# MEGA PROJECTS AND MEGA RISKS:

## Lessons for Decision-makers through a Comparative Analysis of Selected Large-scale Transport Infrastructure Projects in Europe, USA and Asia Pacific

# VOLUME 3: OMEGA RESEARCH PROGRAMME UK CASE STUDIES: PROJECT AND COUNTRY FINDINGS

## Findings of a five year international research programme funded by the Volvo Research and Education Foundations (VREF)

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Omega Centre
**Centre for Mega Projects in Transport and Development**

A global Centre of Excellence in Future Urban Transport sponsored by Volvo Research and Educational Foundations (VREF)

# VOLUME 3 TABLE OF CONTENTS

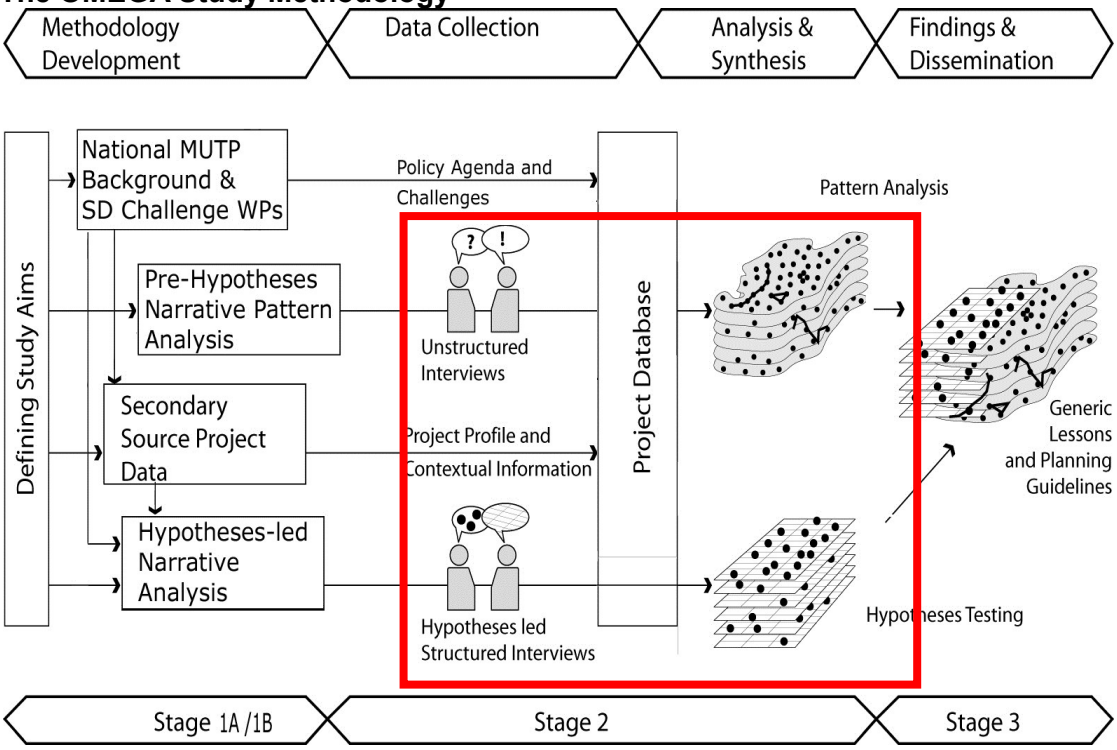
## List of Figures

## List of Tables

## Document Navigation

The figure directly below offers an overview of the overall OMEGA research programme Study Methodology. The area highlighted in red is dealt with by this volume of the report.

**The OMEGA Study Methodology**



# 1. Introduction

Volume 3 presents the findings of the OMEGA Centre's research into three UK mega-transport projects:

1. the Channel Tunnel Rail Link – the first high speed rail line in the UK, (now known as High Speed One);
2. the Jubilee Line Extension – a new tube line connecting major new developments in East London to the centre of London;
3. the M6 Toll Road – the UK's first tolled motorway, and also one of the UK's first PFI's (private finance initiative) in the transport sector.

The findings of the research, which was undertaken between 2007 and 2011, are presented on a case-by-case basis in Chapters 2 to 4. Chapter 5 then presents a synthesis of the overall findings, with lessons and conclusions from the three case studies combined.

Readers may note a degree of repetition regarding certain findings associated with the responses to ORQs and ORHs, the '4 Tests' findings and lessons provided – both between individual case study findings and in relation to the UK synthesis below. This is somewhat unavoidable given: the often significant resonance that exists between the case study findings, and; the methodological process that was followed, whereby responses to the OMEGA Overall Research Questions and Hypotheses inform the preparation of key lessons.

## 1.1 Rationale for the choice of case studies

The UK case studies were selected according to three main criteria (with a similar approach adopted for the 27 international mega-urban transport projects (MUTPs), as presented in Volume 4). The criteria were:

- Selected case study projects had to be in accordance with the overall definition of a MUTP included in the original OMEGA CoE Proposal – i.e. large-scale, complicated land-based transport infrastructure projects, such as: bridges, tunnels, highways, rail links and their related transport terminals plus combinations of such projects with construction costs *in excess* of US$ 1 billion (at 1999 prices) that are located in urban and metropolitan areas or regions[1]. Such projects often link local networks with global networks, and are perceived as national icons of development, and critical to the delivery of national and regional development strategies. Two of the three UK case studies fitted this profile.
- Case studies were sought which represented a degree of variety (and uniqueness) with regard to their principal functions, characteristics and attributes so as to enhance the spectrum of potential findings and enable a degree of useful 'compare and contrast' analysis in the national UK context: for example:
  - Channel Tunnel Rail Link (CTRL) – comprises the UK's first (and so far only) high speed heavy rail project which provides regional and international links and is associated with major regeneration and restructuring initiatives;
  - Jubilee Line Extension (JLE) – represents a very significant component of London's underground network and is also associated with major development initiatives in the city;
  - The M6 Toll Road - was the first UK toll road funded entirely by the private sector (PFI).
- It was considered vitally important that inside-stories and narratives regarding the selected case studies should be accessible from persons intimately involved in key

[1] This definition has been adopted by the OMEGA Centre at UCL and is extracted from a paper entitled: *Globalization, Mega Transport Projects and the Making of Mega Places* presented at the Transportation Research Board Annual Meeting, Washington D.C. in January 2005

aspects of the project decision-making, so as to provide unique insights into responses to the research programme's Overall Research Questions and Overall Research Hypotheses (see study methodology in next section).

## 1.2 Study methodology

The research methodology was described in detail in Volume 1, and the approach was followed in both the UK and international case studies. To re-cap, the research was carried out in three main stages:

**Stage 1 (a and b):** Definition of study aims and methodology, and preparation of background working papers on (i) national policy and planning frameworks; (ii) aspects of sustainable development as applied to MUTP's;

**Stage 2:** Collection and analysis of interview data from key stakeholders for each case study. The interviews were conducted and analysed in stages: firstly, Pre-Hypothesis interviews were carried out, in a straightforward 'trawling' exercise to identify key issues and details. The responses were then transcribed and analysed, both manually and with the assistance of 'sense-making' software to identify patterns. Secondly, specific research questions and hypotheses were formulated, and a further round of Hypothesis-led interviews was conducted with key stakeholders, to get their responses to the overall research questions and hypotheses according to their personal experiences.

**Stage 3 (a and b):** The various research outputs and findings were consolidated in a Final Report (this document and other volumes of the draft Final Report). Also, the research findings are being disseminated through an (on-going) programme of teaching, publications, conferences and other modes of dissemination.

## 1.3 The overall research questions and hypotheses (ORQ's and ORH's)

The OMEGA 2 research programme adopted three overall research questions (ORQs) and three overall research hypotheses (ORHs), to provide a common framework for investigating the 30 mega-project case studies.

The overall research questions were:

- **ORQ #1:** What constitutes a 'successful' mega urban transport project in the 21st Century?
- **ORQ #2:** How well has risk, uncertainty and complexity been treated in the planning, appraisal and delivery of such projects?
- **ORQ #3**: How important is context in making judgements regarding ORQs 1 and 2?

The overall research hypotheses were:

- **ORH #1:** Traditional criteria relating to cost overruns, completion dates, generation of travel time savings for users and rates of returns to investors are inadequate measures of success in the 21st Century as sustainable development concerns become increasingly critical both globally and locally;
- **ORH #2:** The new emerging international and local agenda related to vision(s) of sustainable development are multi-dimensional and go beyond notions of environmental sustainability, as critical as this may be; it also concerns inter-related concepts of economic sustainability, social sustainability and institutional sustainability;
- **ORH #3:** The level of competence in decision-making in today's fast-changing world is best assessed by the adequacy of the treatment of risk, uncertainty and complexity plus sensitivity to context(s); all of which constitute important demands on strategic planning and tests of resilience.

The UK responses to these questions and hypotheses are presented case-by-case in the following chapters, with an overall synthesis in Chapter 5.

## 1.4 Main documentary outputs from the UK research

The main documentary outputs from the UK research are: [2]

- **Working Paper 1.10** on The History and Background of the Planning, Policy and Funding Frameworks of Mega Urban Transport Projects in Great Britain since the Second World War – by Francis Terry, UCL (prepared as part of the Working Paper 1 series on national planning frameworks – see Volume 2 for further details);
- The **Working Paper 2** series on sustainable development challenges of MUTP's (these are topic- rather than country-specific – see Volume 2);
- **Project Profiles** prepared for each UK case study, setting out the main factual details and case histories of each project. (Short summary profiles of each project are included in this volume, with hyper-links to the full Project Profiles);
- The **Pre-Hypothesis Reports**, prepared for each of the case studies. (Summaries are given in this volume, with hyper-links to the full reports);
- The **Hypothesis-Led Reports,** prepared for each of the case studies. (Summaries are given in this volume, with hyper-links to each full report);
- The **'4 Tests Reports',** prepared for each of the case studies. These are presented in each chapter, and examine project achievements relative to:
    - Test 1: Project Objectives – those originally established for the project and those that emerged during project planning and delivery;
    - Test 2: Sustainable Development Visions and Challenges – as reflected in prevailing policy at the time the project was originally planned and delivered and in relation to current policy;
    - Test 3: Treatment of Risk, Uncertainty, Complexity and Context – with particular reference to normative statements established against the background of the OMEGA 1 Project;
    - Test 4; Synthesis of Tests 1-3 – in relation to responses to the OMEGA Research Questions and Hypotheses, the identification of project 'winners and losers' and provisional lessons.
- The **UK Country Synthesis Report**, which combines the findings from the three case studies in a single report. This is presented in Chapter 5.

Volume 3 now presents the detailed findings from the three UK case studies.

Volume 4 presents the findings from the 27 international case studies, and Volume 5 combines the UK findings with those of the international case studies, to give overall conclusions and lessons from the OMEGA research project.

[2] Other outputs are described in Volume 1, and include the OMEGA workshops and various other supporting papers.

# 2. The Channel Tunnel Rail Link

*High speed trains at St. Pancras*

## 2.1 Project profile: CTRL

For each case study (both UK and international case studies) a Project Profile was prepared, giving details of the project's main features, characteristics and history. The profiles cover information such as:

- principal project objectives (both original and emergent);
- start and completion dates for planning and delivery processes;
- project costs;
- major project enabling mechanisms and agents;
- project planning and environmental regimes;
- project financing methods and structures;
- key project quantities;
- associated project developments;
- project traffic forecasts and actual usage, and;
- a timeline showing significant decisions and events critically impacting on the project.

The full CTRL Project Profile can be downloaded here: http://www.omegacentre.bartlett.ucl.ac.uk/studies/by_place_2.php , and a summary version is presented in the following pages.

## CHANNEL TUNNEL RAIL LINK, LONDON-KENT, UK

### OVERVIEW

**LOCATION: LONDON-KENT, UK**
**SCOPE: REGIONAL/INTERNATIONAL**
**TRANSPORT MODE: RAIL**
**PRINCIPAL CONSTRUCTION: AT GRADE**
**NEW LINK: YES**

### PRINCIPAL OBJECTIVES

**INTERNATIONAL/NATIONAL LINK**
**PART OF EU TEN-T NETWORK**
**INCREASE CAPACITY**
**TRAVEL TIME SAVINGS**
**EMERGENT OBJECTIVE: REGENERATION**

### PRINCIPAL STAKEHOLDERS

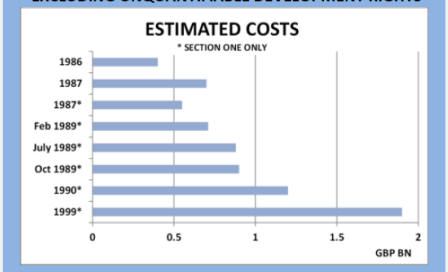
**CLIENT: BRITISH RAIL & DEPARTMENT OF TRANSPORT**
**CONCESSIONAIRE:**
**LONDON & CONTINENTAL RAILWAYS (LCR)**
**PROJECT MANAGER: RAIL LINK ENGINEERING/LCR**
**FUNDER: LCR (WITH GOVERNMENT BACKING)**

### PLANNING AND IMPLEMENTATION

**PLANNING START DATE: 1974**
**CONSTRUCTION START DATE: 10/1998**
**OPERATION START DATE: 11/2007**
**MONTHS IN PLANNING: 264**
**MONTHS IN CONSTRUCTION: 109**
**PROJECT COMPLETED:**
**48 MONTHS BEHIND SCHEDULE**

### COSTS (IN 2010 USD)

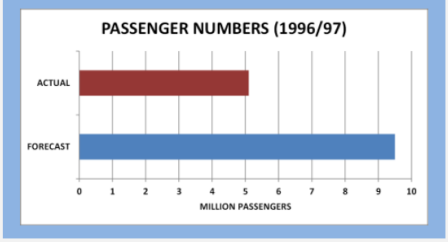
**PREDICTED COST: 6.14BN**
**ACTUAL COST: 9.63BN**
**PROJECT COMPLETED: 57% OVER BUDGET**
**FUNDING: 29% PUBLIC* / 71% PRIVATE**
***EXCLUDING UNQUANTIFIABLE DEVELOPMENT RIGHTS**

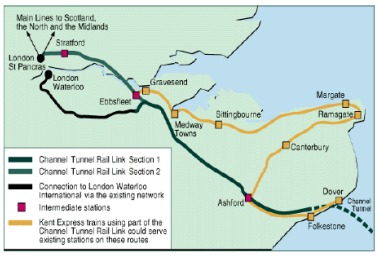



### INFRASTRUCTURE QUANTITIES

**LENGTH: 113KM; IN TUNNEL: 26KM**
**NUMBER OF BRIDGES: 152**
**COST PER KM (2010 USD): 0.085BN**

### PATRONAGE




### INTRODUCTION

The Channel Tunnel Rail Link (CTRL) is a UK high speed rail link between the Channel Tunnel and London St Pancras International, with three intermediate stations at Ashford, Ebbsfleet and Stratford (see map above). The Link opened in November 2007, since when all four stations have become major hubs for urban development and regeneration of the surrounding areas.

The genesis of the project lies in negotiations between the British and French governments to build a fixed rail link between the two countries, culminating in the 1986 Channel Tunnel Treaty, and parallel negotiations between the national rail companies (British Rail and SNCF) to build rail links to their respective capital cities.

### BACKGROUND

The objectives of the project were initially to increase rail capacity and to reduce journey times between London and the Channel Tunnel, and to link London with Paris and Brussels. The aim of using the Link to stimulate local and sub-regional urban regeneration emerged *during* the route planning process, not before. The Link is part of the EU TEN-T Network, a trans-national priority project within the high speed rail axis between Paris, Brussels, Cologne, Amsterdam and London.

A series of route options were proposed (notably by British Rail and the consultancy firm Ove Arup) in 1989, and subsequently evaluated between the late 1980s and early 1990s.

The 1996 Channel Tunnel Rail Link Act provided outline planning consent. Later that year, London & Continental Railways (LCR) was awarded the concession to build, operate and maintain the Link. Local authorities along the route were responsible for awarding detailed planning permission and were represented on a 'high level forum'. Among the most influential were Kent County Council, which significantly influenced the southern route of the Link and insisted on the inclusion of Ashford as one of the stations, and the London Borough of Newham, which lobbied successfully for an international station at Stratford as part of a wider urban regeneration project. The potential for development around the Thames Estuary (now known as Thames Gateway) was first identified in the regional planning framework in the early 1990s.

An environmental impact assessment in 1996 established Minimum Requirements specifying protection measures to be taken along the route, but the public opposition that had been provoked by BR's 1974 proposals was revived.

**TIMELINE**

**CONCEPTION: 1971: BR & SNCF WORK ON COMBINED RAIL SCHEME BETWEEN TWO CAPITAL CITIES**

**CONCEPTION: 1974: BR FIRST PROPOSES LINK**

**CONTEXT: 1986: UK AND FRANCE SIGN CHANNEL TUNNEL TREATY**

**CONTEXT: 1987: CHANNEL TUNNEL ACT RULES OUT PUBLIC FUNDING FOR INTERNATIONAL SERVICES**

**INCEPTION: 1988: BR STUDY OF ROUTE AND TERMINAL CAPACITY**

**INCEPTION: 1989: BR INVITES TENDERS FOR JOINT VENTURE PARTNER. EURORAIL SELECTED**

**DELAY: 1990: BR'S JOINT VENTURE WITH EURORAIL DISBANDED**

**INCEPTION: 1991: EVALUATION OF ROUTE OPTIONS**

**INCEPTION: 1991: GOVERNMENT ANNOUNCES CONSTRUCTION WILL BE JOINT VENTURE UNDER PRIVATE FINANCE INITIATIVE**

**INCEPTION: 1994: PUBLIC CONSULTATION ON PREFERRED ROUTE. CHANNEL TUNNEL RAIL LINK BILL IN PARLIAMENT**

**CONTEXT: 1995: THAMES GATEWAY PLANNING FRAMEWORK PUBLISHED**

**INCEPTION: 1996: CTRL BILL GAINS ROYAL ASSENT. ENVIRONMENTAL IMPACT STUDY. LCR APPOINTED AS CONCESSIONAIRE**

**DELAY: 1997/98: LCR UNABLE TO RAISE SUFFICIENT FINANCE. FINANCIAL RESTRUCTURING AGREED**

**CONSTRUCTION: 1998 (OCT): CONSTRUCTION OF STAGE ONE BEGINS**

**CONSTRUCTION: 2001 (JUL): CONSTRUCTION OF STAGE TWO BEGINS**

**DELIVERY: 2003 (SEP): STAGE ONE OPENS**

**DELIVERY: 2007 (NOV): STAGE TWO OPENS**

**DELIVERY: 2009: IMPACT STUDY**

**DELIVERY: 2010: CONCESSION SOLD TO CANADIAN PENSION PLAN**

In 2009, an Environmental Impact study suggested the project's benefits were more than double the costs. A workforce of 8,000 was subsequently employed on the project, and an estimated 50,000 jobs created as a result.

BR's cost estimates for the Link increased steadily from GBP 0.4bn in 1986 to GBP 1.255bn for Section 1 alone in 1990. At Royal Assent in December 1996, the estimated construction cost of the Link was GBP 3bn[i] (USD 6.13bn at 2010 prices). In 1998 the target construction cost agreed between LCR and the UK Department of Transport, for sections 1 and 2 including allowances for inflation, was GBP 5.233bn[ii]. The final cost for Sections 1 and 2 was GBP 5.8bn[iii] (USD 9.63bn at 2009 prices) – 10% above the cost agreed in 1998 and 57% above the cost estimated at Royal Assent in 1996, adjusted for inflation.

Rail Link Engineering, a consortium formed in 1997 of LCR's four engineering stakeholders (Arup, Bechtel, Halcrow and Systra) acted as project manager, and the six main contracts were awarded to high profile contractors such as Alfred MacAlpine and Balfour Beatty. The Link was built in two sections – Section 1: Channel Tunnel to Fawkham Junction (constructed from October 1998 to September 2003) and Section 2: Southfleet Junction to St Pancras (constructed from July 2001 to November 2007).

**TIMELINE ISSUES**

Route selection was a lengthy process influenced by political considerations, the emergence of strategic development potential and competing agendas. Key events are shown in the timeline on the left.

**FUNDING**

The project's reliance on private sector funding dates from its conception and was at the insistence of the Prime Minister of the time (Margaret Thatcher). This situation (at least in its rhetoric) continued beyond 1997, despite the change in government. LCR was responsible for financing its construction and operation, but the government agreed to provide GBP 1.7bn funding and development rights around Kings Cross and Stratford stations, and guaranteed LCR's debt[iv].

However, LCR was *unable* to raise the GBP 0.8bn equity and GBP 3-4bn debt finance needed to build the Link. Escalating costs and reduced passenger forecasts were cited as reasons. The government refused to provide more grant funding, but agreed a financial restructuring with LCR, involving the sale and leaseback of trains, in 1998. Revenue and patronage have continued since to be *below* forecast. In 2010, the 30 year concession was sold to a Canadian pension plan for GBP 2.1 bn[v].

[i] HC Deb, 29.02.96, cc 999-1016
[ii] HC Deb, 19.05.99, c354W
[iii] HC Deb, 16.10.07, c969w N.B This value excludes certain real estate components
[iv] Butcher (2011) Railways: Channel Tunnel Railway Link SN/BT/267, House of Commons Library
[v] ibid

## 2.2 The pre-hypothesis investigation: Channel Tunnel Rail Link

### 2.2.1 Introduction

The Channel Tunnel Rail Link (CTRL) Pre-hypothesis 'Sensemaking' Report seeks to highlight the key patterns of knowledge drawn from the pre-hypothesis interview narrative in the form of anecdotes collected for the CTRL Case Study (on the basis of interviews conducted with 28 stakeholders between May 2007 and March 2008), together with some 40 Sense-Making Items (SMIs) comprising magazine/newspaper articles, speeches etc. collected over the same period.

This raw data was analysed mainly by using Cognitive Edge's Sensemaker Software in combination with a parallel exercise which essentially comprised a manual 'trawl' through all the narrative (referred to hereafter as the Sensmaking Oversight Method of Analysis) in order to provide:

- a check on whether the Sensemaker Software revealed similar themes/topics and correlations/relationships;
- a means to identify important emergent or new themes/topics and correlations/relationships that needed to be subsequently analysed using the software.

Any apparently significant emergent themes/topics or correlations/relationships that were identified as a result of the Sensemaking Oversight Method were subsequently examined using the Sensemaker Software.

A summary of the key findings of the combined sense-making analysis of the CTRL Case Study data is provided below in the following section, with a more detailed account provided in a separate report entitled "Pre-Hypothesis Analysis: CTRL Data Analysis using SenseMaker Explorer & Manual-Oversight Method" (CD ROM: OMEGA Prehypothesis and Hypothesis Led Reports\OMEGA CENTRE - CTRL PHR Report - Final.doc). As a lead-in to the following discussion, Table 3.1 of Appendix 26 provides a useful insight into the key themes that arose from the sense-making analysis.

### 2.2.2 Summary of findings of the sense-making analysis

**Project concept and objectives**

The combined CTRL-Thames Gateway vision was seen by many as a *means* to also promote political agendas by (for example) encouraging the regeneration of areas controlled by the chief opposition party at the time which were mainly in East London.

Early imperatives to deliver a 'least-cost' rail link using existing systems were ultimately overridden by concerns over national prestige, and project objectives were subject to change as a result of emergent agendas during the project planning period. This led, for example, to the CTRL being re-positioned as a key spine for the regeneration and growth agenda associated with the Thames Gateway.

**Project 'vision'**

The positioning of CTRL as a means to promote regional restructuring, growth and urban regeneration required both considerable faith and strong advocacy skills amongst key political decision makers. CTRL's relationship to the Thames Gateway project was seen as essentially *symbiotic* - i.e. they could not have existed in their present form without each other.

**'Strategy for decision-making'**

The lack of a co-ordinated strategy to the project by government agencies led to numerous ad-hoc decisions, and the need for the Government to resolve high level strategic issues – such as co-ordination between different transport sectors working on large projects – proved critical.

Nonetheless, conflicts between short and long-term strategies were endemic in the decision-making process, and this showed the importance of forming good long-term strategic relationships among project stakeholders, to enable mutually beneficial deals to be struck.

**Initial project planning and appraisal**

The initial planning period for CTRL was highly politicised in so far as a number of project elements (e.g. urban redevelopment initiatives associated with the project) were later 'bolted-on' in response to highly effective political lobbying. Most key decisions that shaped the CTRL project were taken at the highest political level, though many of these were taken only after substantial political manoeuvring and consensus-building.

The project planning and appraisal process became not only more rigorous but also more 'open' to the input of new ideas/concepts from the late 1980s onwards, which accounts for the intense lobbying for station locations at places like Stratford and Ebbsfleet.

**Consultation approaches/methods**

Early attempts at consultation (in the mid-to-late 1980s) were seen as 'naïve' and 'heavy handed', with the result that public reaction was universally hostile. Later consultation exercises were generally seen as much more 'professional' and useful, leading to rather less hostility on the part of the public. In the latter case, the promoters and affected local authorities played a key role in all consultation exercises. Private sector partners were less inclined to undertake adequate consultation (unless it was legally required).

**Project programming and implementation issues**

Project plans and implementation programmes need to be 'certain', 'realistic' and enable the proper integration of actions and activities by all concerned key parties. 'Certainty' was seen as particularly critical in terms of the delivery of key decisions: in practice, project programmes were often unrealistically short.

Making 'shared visions' explicit through agreed project objectives and deliverables could be a unifying element amongst the various actors that helped to reduce uncertainty and mitigate risk. However, for projects with long planning and implementation periods it was unrealistic to expect to be able to choreograph all project plans and programmes with precision, due to (among other things) frequent contextual changes.

The preparation and delivery of comprehensive, fully-integrated plans and programmes was highly dependent on the transparency within and between the involved agencies. There were also moments in time in project planning and implementation when circumstances were ripe for key decisions to be made (and conversely, times when they were not). The project needed to achieve a critical momentum before it could be presumed 'irreversible' in terms of its implementation.

**Project financing and funding**

The UK Treasury proved extremely influential in the CTRL planning and delivery process, particularly in terms of its instructions to minimise costs – this was seen by many as representing a very significant 'block' on the ability to bring forward major new infrastructure projects generally, and aspects of the CTRL more specifically. It was suggested that under instruction from the Treasury, CTRL project costs were both under-reported and 'adjusted' to ensure that they remained within pre-approved ceilings;

It remains unclear whether passenger forecasts were simply 'wrong' or 'manipulated' so that the government was told what it wanted to hear. Some interviewees speculated that the bidders' strategy was simply to win the project, in the knowledge that they would be able to re-negotiate terms later - i.e. once the project had sufficient (political) momentum.

While cost-benefit-ratio (CBR) calculations were used extensively in appraising the CTRL, it was suggested that key decision-makers did not rely on such modelling exercises, and that political influence, lobbying and the pursuit of the grand political 'vision' for the Thames Gateway were more critical. There was little apparent enthusiasm or methodology for rigorously valuing the benefits derived from regeneration, in the project appraisal process.

Funding arrangements made CTRL vulnerable from the outset to concerns about Risk, Uncertainty and Complexity (RUC) – it was (mistakenly) thought that RUC would be reduced by the early decision to finance the project using private funds.

**Project roles and responsibilities**

From an early stage, it appeared that all affected Local Authorities supported the concept of the CTRL line-haul (i.e. the rail link) as a potential catalyst for economic growth, development and regeneration. Having taken this stance, the Local Authorities concentrated their efforts on:

- lobbying for their locations as international/domestic stations;
- public consultation;
- seeking to avoid adverse environmental impacts, blight and disruption associated with the CTRL; and
- attempting to secure the maximum community benefits from development/regeneration proposals that accompany the project.

Community groups were largely perceived by key project stakeholders as vehicles to moderate and/or frustrate the plans of developers associated with the CTRL project.

**Institutional and organisational issues**

A 'risk-averse' culture amongst civil servants, and their self-perceived role as protectors of their political masters, was seen to mitigate against their ability to take a long-term view of infrastructure investment. A high staff turnover in all agencies associated with the project was also seen as detrimental, whilst (conversely) continuity in key positions enabled consistent and speedy decision-making.

A problem of poor cross-functional sharing of appropriate information/data and ideas was identified both within and between organisations and networks, and consequently there was a clear need for managers and decision-makers who could see the project in its entirety (holistically). Generally, personalities and personal relationships were seen as vitally important at all levels, both within and between organisations.

The CTRL project was affected by having too many institutions with unclear remits and responsibilities, which resulted in a lack of focus and real purpose. In addition, there was little evidence of institutional learning on the part of the promoters and other stakeholders.

**Trust, consensus building, co-operation and lobbying**

Consensus-building amongst key political and other decision-makers was seen as critically important to the success of a project, especially at the project conception, planning and appraisal stages. This consensus-building required:

- 'trust';
- strong lobbying skills;
- 'working together' and networking.

**Project champions**

'Project champions' were perceived by almost all stakeholders as having a pivotal influence on the project outcome. They were seen as operating at all levels of the project and also at different stages during the project lifecycle. The key characteristics of project champions were considered to include the attributes described above: namely, visionary skills; good networkers and consensus builders; tenacious in character, tactically and politically aware, and trustworthy.

**Notions of success/failure**

The most commonly cited measures of 'success' for the CTRL project were:

- its role as a catalyst for regeneration;
- its affordability;
- the establishment of domestic services alongside the international services;
- its promotion of links to other parts of the UK;
- its promotion of 'green travel';
- its creation of fast rail links with Europe.

In terms of project ‘failures’, the most commonly cited factors were:

- its over-encouragement of commuting patterns; and
- its displacement of existing local communities..

**The London 2012 Olympics as a project driver**

There were mixed views regarding the impact of the 2012 Olympics on the CTRL project. The main positive impact was its acting as a further catalyst for economic growth/regeneration. The main negative impact was its potential diversion/drain of scarce resources. It was suggested both that the CTRL had been instrumental in winning the bid for the London Olympics, and (conversely) that the Olympic bid had been critical in obtaining funding for domestic rail services along the same route.

**Risk, uncertainty and complexity**

The satisfactory management of political risk was recognized as very important to private sector success. The private sector thus sought to minimize risk during the preparation of the CTRL bid through the recognition of ‘skills gaps’ within the team, and a political motivation analysis of key players within the Cabinet. Some interviewees thought that reliance on the private sector and markets to manage risk was unrealistic in today’s economic climate(s), and that any possibility of doing this successfully depended on strong leadership in order to achieve higher levels of certainty.

## 2.3 The hypothesis-led investigations: Channel Tunnel Rail Link

### 2.3.1 Introduction

A total of 20 Hypothesis-led research (HLR) interviews were conducted for the Channel Tunnel Rail Link (CTRL) case study between March and July 2008. HLR questionnaires were also sent to 22 additional stakeholders on 9th June 2008 and 9 responses were received. A copy of the interview questionnaire and index sheet is attached at Appendix 22.

The following section provides a summary of the main findings from the HLR interviews in relation to OMEGA's Overall Research Questions (ORQs) and Overall Research Hypotheses (ORHs) as they affect the CTRL. The full report on the HLR phase for the CTRL case study (with other important observations) can be found on the CD Rom: OMEGA Prehypothesis and Hypothesis Led Reports\OMEGA CENTRE - CTRL HLR Report - Final.docx

### 2.3.2 CTRL response to overall research questions and hypotheses

**ORQ#1 - What constitutes a 'successful mega urban transport project in the 21st century?**

The following interviewee observations provide insights into the pre-requisites for planning, appraising and delivering a 'successful' MUTP - particularly in regard to matters such as the need for context awareness, understanding the impact of political influence, and appreciating the role of 'visions' and strategy formulation.

#### 2.3.2.1 Importance of context

Interviewee responses suggest that:

- MUTP 'success' can only realistically be judged against the background of full knowledge of the context that prevailed at the time the project was conceived, planned, appraised *and* implemented;
- successful projects are likely to be characterised by planning and delivery agents that possess acute awareness of: the importance of context *throughout* the project lifecycle, the need and ability to scan and comprehend different contextual matters/influences (and likely changes thereof over time) and the likelihood that the project will itself result in contextual changes;
- significant contextual elements that need to be clearly understood by MUTP planning and delivery agents are seen to be: stakeholder perspectives/motives/agendas (also subject to change), political context (especially important), financial context and MUTPs as agents of significant contextual change;
- successful projects are capable of adapting/evolving in response to changing contextual elements - the evolutionary nature of projects such as CTRL is seen as largely *inevitable* given their scale, complexity and vulnerability to changing context;
- key MUTP characteristics that are themselves contextual elements and need to be taken into account in the decision making process require: a high level of cost/capital investment, are likely to be of national/regional significance and constitute significant drivers/agents of change, require political/parliamentary approval and/or public inquiry, are likely to fulfil multiple roles and have multiple types of impacts, and are likely to be large and complex.

#### 2.3.2.2 Political power and champions

Interviewee observations in respect of political power and champions were as follows:

- political influence/support at all levels of government is generally considered to be *the* critical factor in MUTP planning and delivery - seen as somewhat inevitable given the above-mentioned characteristics;
- having political patronage in the form of a well respected and influential champion is also a key asset for MUTP planners and delivery agents. Champions act as key foci in (clarifying/setting/adjusting project objectives, establishing project credibility and consensus building;
- MUTPs require faith (in its idea) and political commitment (to its implementation), which needs to be sustained throughout their planning period;
- MUTPs may bring about unexpected impacts/benefits which *only* become apparent in the long-term.

#### 2.3.2.3 Vision and strategy

Interviewee comments acknowledge a number of areas where tension exists in relation to the role of MUTP visions and strategies that need to be employed to get the built. These are as follows:

- interviewee responses suggest evident tension existed between keeping to 'vision' underlying the MUTP and political practice/pragmatism. Here some key politicians were found to be rather uncomfortable with overtly backing a ‘vision’ for fear it may generate hostility and may backfire on them. Short-termism and progressing matters through consensus building among key stakeholder was seen as the most acceptable modus operandus;
- interviewees indicated that clearer project objectives would have had minimum impact on the need for ad hoc decision-making given the complexity and size of the project since MUTPs such as the CTRL were seen *inevitably* to have to evolve organically in view of the large number of interests involved, the wide range and scale of potential impacts, the high cost and controversy associated with the project and other contextual changes that occur over the normally lengthy planning and delivery period);
- a few interviewees explained there *were* clear project objectives for CTRL *but* that these were inconsistent, poorly disseminated and changed significantly over the life of the project;
- overall, interviewee responses suggest there was no clearly thought-out, all-embracing ‘strategy’ for CTRL’s development. The consensus was that this MUTP’s developments were largely characterized by ad hoc decision-making. Some parties interviewed expressed the view that they considered this ‘understandable’ on account that *no* single organisation/body could possibly exert control of *all* factors surrounding the project’s planning, appraisal and delivery.

#### 2.3.2.4 Project appraisal

Current project appraisal approaches, tools, methods and processes - especially the manner in which they are employed - were perceived by the majority of those interviewed to be fundamentally flawed. This suggests that dependence upon these methods, tools and processes *alone* is unlikely to mould a ‘successful’ MUTP.

#### 2.3.2.5 Treatment of risk, uncertainty and complexity

CTRL interviewees overall agreed with the notion that the 21st Century is characterised by a faster pace of change, resulting in significantly greater risk, uncertainty and complexity (RUC) and that these, therefore, need to be taken fully into account in the planning, appraisal and delivery of MUTPs if they are to be judged successful.

If increased levels of RUC are to be successfully addressed, it was concluded that it is necessary for MUTP planners and delivery agents to: display enhanced competencies (including a more holistic view and greater political/tactical awareness); understand better the relationship between contextual influences (both present and future); develop robust, flexible and adaptable planning and implementation strategies, and; make better use of stakeholders so as to better understand emerging/changing stakeholder agendas.

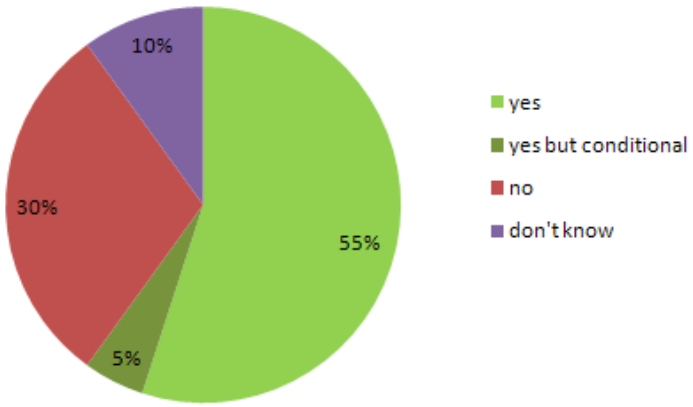
### 2.3.2.6 Project funding

Real estate associated with MUTPs was broadly seen as a suitable means of providing financial support for the MUTP (so that the 'line haul' and the transport hub developments become mutually sustaining). However, concern was expressed at the potential risk levels associated with the role of such real estate to help fund MUTPs given market fluctuations, heavy up-front expenditures and the lengthy carrying periods *before* revenues are forthcoming.

### 2.3.2.7 'Time to breathe'

More than half of all respondents saw a 'time to breathe' as positive in terms of delivering a successful project (see Figure 2.1). Here, the 'time to breathe' is seen as the process by which the project evolved over time in response to changing contexts, thereby making the project more relevant and robust to prevailing and future anticipated developments. Those who disagreed with this premise suggested that 'time to breathe' simply prolongs uncertainty.

**Figure 2.1 : Interviewee responses to - 'do projects need time to breathe?'**




### 2.3.2.8 'Control' of planning and delivery process

CTRL interview respondents broadly conceded that it is unrealistic to expect to be able to control *all* aspects of MUTP planning and delivery (see Figure 2.2); – despite undertakings given to politicians and the public to the contrary. In addition, it was suggested that it is only the later project lifecycle stages (construction and operations) that are capable of effective control.

**Figure 2.2 : Interviewee responses to - 'is it unrealistic to expect to be able to tightly control project planning and delivery?'**

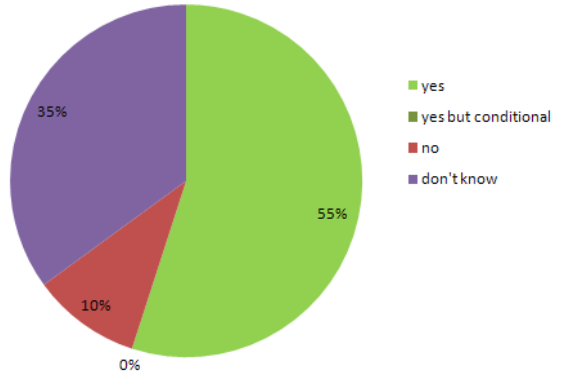
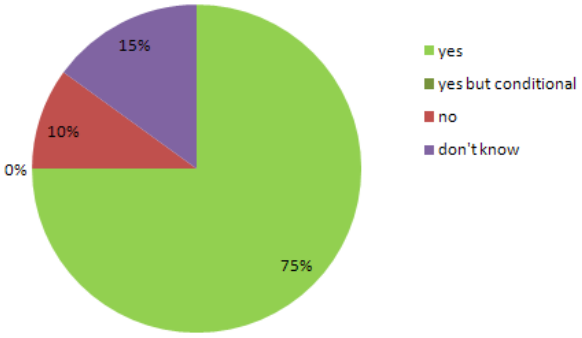



**Figure 2.3 : Interviewee responses to the 'seize the day' premise**




### 2.3.2.9 Community engagement

CTRL interviewees were *equally* divided on whether community engagement can make a positive contribution to MUTP success. Those who saw such engagement in a positive light commented that formal objections can actually lead to improvements in project concept and design and that consultations can produce decisions that are '.....fast, transparent, inclusive, robust and defensible, and of a high quality.'

Those with a negative view commented that community engagement simply leads to delays and/or is mainly concerned with small-scale/local 'not in my back yard' (NIMBY) issues. That said there was general consensus about the need to build trust with all stakeholders by keeping them fully informed *throughout* the project.

**ORQ#2 - How well has risk, uncertainty and complexity been treated in the planning, appraisal and evaluation of such projects?**

**ORH#3 - The level of competence in decision-making and planning in today's fast-changing world is best assessed by the adequacy of the treatment of risk, uncertainty and complexity and sensitivity to context – all of which are important demands on Strategic Planning**.

### 2.3.2.10 Risk, uncertainty, complexity and the pace of change in the 21st Century

Interviewee responses indicated that the 21st Century *is* indeed characterised by a faster pace of change, resulting in significantly greater RUC in the planning, appraisal and delivery

of MUTPs. Key contextual forces/influences seen to lead to greater RUC included: unstable economic circumstances; the use of new technology; climate change and energy concerns; the extended time required in completing MUTP development processes. It was concluded that MUTP developments are especially vulnerable to RUC because of their lengthy processing and appraisal periods which are overly complex.

The concluded appropriate responses to this increased RUC include the need for:

- enhanced competencies in the planning and delivery of MUTPs - especially, a holistic view of project planning and delivery processes and enhanced political/tactical awareness;
- better understanding of the influences associated with current and emerging future contexts on the planning and delivery process for MUTPs;
- the preparation of strategies that address the contextual changes brought about by MUTPs;
- planning and implementation strategies/programmes that are robust and adaptable;
- greater stakeholder involvement in the planning, appraisal and delivery processes.

#### 2.3.2.11 Mega events (Olympics) and risk, uncertainty and complexity

CTRL interviewees suggested that mega events (MEs) have a significant impact on the perceived levels of RUC associated with MUTPs (especially when these events drive MUTP plans/programmes). Their positive influence is particularly seen in terms of RUC mitigation through firm funding and programme commitments. Their negative influence is suggested to include the diversion of attention and (more importantly) resources *away* from projects that are not directly linked to the ME.

#### 2.3.2.12 Project risk transfer/balance

Generally, interviewees suggested that in 1997/98 UK central government had little option but to transfer much of the financial risk associated with the CTRL back to the public sector so as to ensure that the project would *not* 'fail' or stall. This decision was seen to be based upon political risk considerations as well as issues of national prestige rather than financial risk concerns.

Determining an appropriate degree of risk-sharing between the public and private sectors was seen as extremely problematical by interviewee respondents. The point was made that it is *only* in the long-term and/or when things go wrong that risk share can be accurately assessed. The following specific issues were noted in this context:

- transferring risk to the private sector carries with it the risk that the project scope/nature may change from that originally conceived as a result of re-negotiation of terms and/or the private sector delivering the project it can best 'afford';
- risk management is an imprecise 'art' that requires the type of expertise that is not presently available in the public sector;
- balancing risk management between the public and private sectors is difficult when gains may *only* be realised in the long-term, while political horizons are typically short-term.

PPP/PFI arrangements especially pose a level of risk to the private sector that is not always well understood by the public sector. For example in the case of the CTRL, risk was seen as very significant in regard to those developments which are part of the real estate financial support mechanism. Such developments involve heavy up-front expenditure and a lengthy period before any substantial returns are available.

Interviewees suggested that central government failed to take full account of the risks associated with undertaking CTRL as a PPP/PFI project. They cited, as an example the failure to anticipate the impact of low cost airlines and were as a consequence manifestly optimistic about forecasts. Moreover, it is suggested that successive governments viewed the PPP/PFI approach as the 'only game in town' that was likely to be politically acceptable to fund the project.

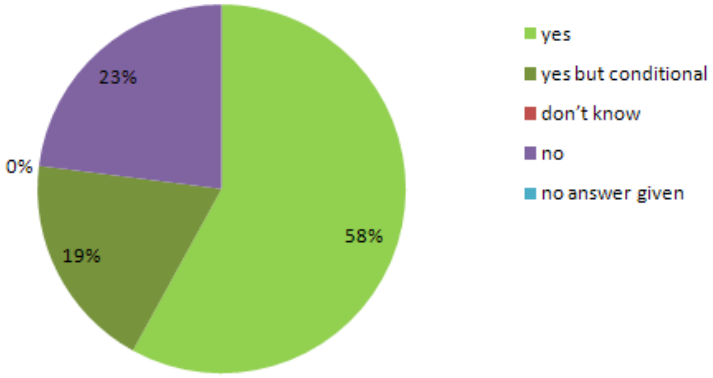
### 2.3.2.13 Appreciation of risk, uncertainty and complexity and 'traditional' appraisal toolbox

'Traditional' appraisal approaches/tools (including the use of CBA) were perceived by the majority of respondents to represent inadequate means by which to 'model' the full range of contextually driven RUCs. This includes a failure to correctly identify and quantify project outcomes, anticipate changes in context and treat projects as both open systems and more than mere commodities.

**Impact of project visions/objectives on risk**

The existence of clear visions and related objectives for MUTPs at the commencement of planning was *not* perceived by interviewees as being a means to mitigate risk. In the case of CTRL, it was acknowledged that changing contexts resulting from emerging stakeholder agendas meant that having firmly fixed objectives may well have increased risk - by restricting the project's adaptability to change. This may be particularly relevant as respondents broadly agreed that the 21st century poses a more uncertain world and higher levels of risk (see Figure 2.4).

**Figure 2.4: Interviewee responses to the question "Does the 21st Century pose a faster pace of change and a therefore a more uncertain world subsequently requiring higher levels of competence of the treatment of risk, uncertainty and complexity in MUTP planning, a**




**ORQ#3: How important is context in making judgements regarding Overall Research Questions 1 and 2?**

### 2.3.2.14 Influence of 'context' on project planning and delivery

Context awareness was viewed as being critical to *all* aspects of CTRL planning, appraisal and delivery by interviewees who also considered that there is a need to take account of the likelihood that many/most contextual influences will change over the course of the (usually lengthy) project lifecycle. These evolving influences serve to explain why many MUTPs also evolve in terms of their anticipated role, function, scope and interfaces with other initiatives. As noted above, many interviewees also suggested that 'project success' can *only* be

judged in light of the sound knowledge of the context that prevailed at the time the project was conceived, planned, appraised and implemented.

The most influential 'generic' aspects of context affecting MUTP decision making identified from the CTRL interviewees include :

- stakeholder perspectives/motives/agendas - which often change over the course of the project;
- political contexts - which are both all pervasive and subject to change in light of short-term political cycles;
- financial context - especially, specific financial arrangements for projects and changes in the external financial environment.

What was also noted was that MUTPs are themselves readily able to mould the 'context' into which they are placed.

Specific contextual elements that impacted on CTRL included:

- the 2012 Olympics;
- central government policy agenda supporting London's pre-eminent financial position plugging the UK economy more firmly into the EU and regenerating Thames Gateway;
- lobbying for stations as regeneration/growth stimulants;
- politics and project champions.

### 2.3.2.15 Perception of context

CTRL interviewee respondents suggested that there are different professional perspectives on the influence/importance of context – with planners and politicians seen as more contextually aware than 'traditional' project managers who are more driven by day-to-day aspects of project delivery according rigidly interpreted programmes. More broadly, the 'project delivery phase' is seen as less contextually sensitive than other phases because of the perception that the project is 'locked-in'.

### 2.3.2.16 Best practice, institutional learning and context

'Best practice' is often seen as being contextually insensitive and consequently needs to be applied with great care – and perhaps with greater 'safety' once projects have been effectively 'frozen'/locked-into for implementation. Institutional and professional learning is then perceived as beneficial

**ORH#1 - Traditional criteria relating to cost overruns, completion dates, generation of travel time savings for users and rates of returns to investors are inadequate measures of success in the 21st Century as sustainable development concerns become increasingly critical both globally and locally.**

### 2.3.2.17 Adequacy of 'traditional' appraisal methodologies and criteria

CTRL interviewees generally concurred with the above premise. The identified shortcomings associated with traditional appraisal approaches/tools such as CBA included:

- Their lack of precision in identifying and quantifying project impacts (e.g. regeneration);
- their inability to ascribe appropriate 'weights' to different cost-benefit elements; and
- their inability to forecast future contextual elements or on many occasions to even consider and test future scenarios.

In light of the above, the OMEGA Team consider it is hardly surprising to note the wide ranging perception amongst interviewees that political will/imperative/pragmatism generally

overrides outputs from traditional project appraisal methodologies and that political 'judgements and gut feelings' are consequently seen as playing a key role.

That said, the interviewees emphasised that traditional appraisal tools still have an important role to play, especially concerning particular economic and financial aspects and should therefore be 'improved' rather than discarded - as part of a broader multi-criteria approach, for example. Of critical importance in this context is the need to ensure that the bases of current appraisal criteria and techniques are properly explained to decision-makers (especially their limitations).

### 2.3.2.18 Closed v open system approach

Interviewee responses suggest that CTRL was initially treated as a 'closed' system (as a basis for the business case assembly) but was later treated as 'open' so as to accommodate those elements that ultimately helped justify its construction. The opening-up of this scrutiny incorporated regeneration, economic growth in the wider Thames Gateway and wider sustainability concerns within the appraisal process albeit sometimes in a less structured and integrated manner.

**ORH#2 - The new emerging international and local agenda related to vision(s) of sustainable development is multi-dimensional and goes beyond notions of environmental sustainability, as critical as this may be, in that it also concerns inter-related concepts of economic sustainability, social sustainability and institutional sustainability.**

### 2.3.2.19 Role of sustainable development in project appraisal

Over 75% of CTRL interviewee responses felt sustainability considerations *should* play a part in the planning, appraisal and delivery of MUTPs (see Figure 2.5 below). Responses acknowledged the need to use a broader range of criteria (including environmental, economic, social dimensions of sustainability in project appraisal (see Figure 2.6 below), but note with concern that currently available models/systems are not capable of this

**Figure 2.5: Interviewee responses indicating that sustainability considerations should play a major part in the planning and delivery**

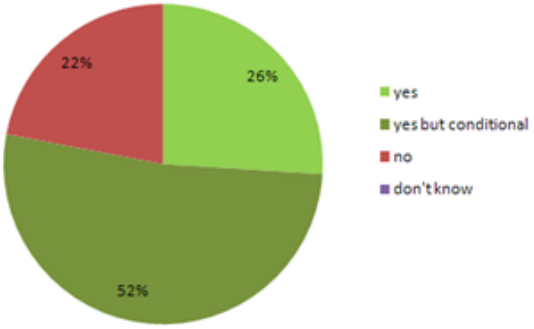
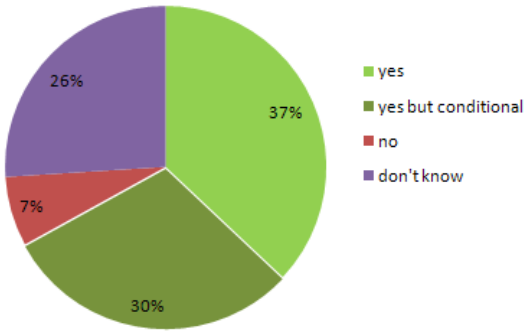



**Figure 2.6: Interviewee responses to the question - "Does the new emerging agenda related to visions of sustainable development offer a better framework for judging the success of MUTPs?**




This is seen as predominantly due to the lack of workable, operationalised definitions of various aspects of sustainability and the consequent unavailability of frameworks and

associated evaluative criteria to help operationalised the sustainable development vision (SDV). It is therefore unsurprising that responses suggest no overwhelming enthusiasm for the notion that current SDVs offer a better framework for judging the success of MUTPs - and that that there is still much work to be done in turning SDVs into a meaningful framework that can influence day-to-day decision-making.

While it is impossible to establish a correlation, a number of interviewees also noted that professional silos and entrenched project management thinking in MUTP development pose was widespread and that this frequently posed effective barriers to the introduction of a more holistic view of sustainable development in project planning, appraisal and delivery.

## 2.4 Project findings – the 4 tests: CTRL

### 2.4.1 Test 1: Project objectives

#### 2.4.1.1 The stated objectives

CTRL objectives were formulated at different stages in the project lifecycle. Thus, the analysis which follows seeks to assess project achievements *against* the background of:

- Test 1a - the original project objectives set when the project commenced;
- Test 1b - new project objectives that 'emerged' during the course of planning and implementation.

Table 2.1 below identifies the principal objectives for CTRL. The three commonly stated objectives on the part of the principal sponsors and project undertakers (Government, London and Continental Railways [LCR] and Union Railways) can be summarised as:

- provision of increased service capacity between London and the Channel Tunnel;
- provision for domestic (commuter) services;
- stimulation of regeneration in East London and the Thames Gateway.

**Table 2.1: Stated objectives for CTRL (from project profile)**

| Source | Stated Objective | Overview of achievements |
|---|---|---|
| Government objectives (1990):<br><br>Gambrill, B. (May 2003a)<br><br>Channel Tunnel Rail Link: 1971 to 1990. in: ICE Civil Engineering 156, pp. 4-10, Paper 13210. | • 50% increase in link capacity between London and the Channel Tunnel (see below - 'Rail services') | • believed to have been achieved (see below - 'Rail services') |
| | • Ability to maximise use of the new line for domestic rail users (see below - 'Rail services') | • believed to have been achieved (see below - 'Rail services') |
| | • Regeneration and redevelopment values should be maximised by the design of the route and location of the stations. In particular, to maximize the positive regeneration benefits of CTRL termini at Ebbsfleet (Kent Thames Gateway), Stratford (East London) and King's Cross (particularly in regard to the former King's Cross Railway Lands) (see below 'Regeneration and Restructuring'). | • potentially or partially achieved (see below 'Regeneration and Restructuring'). |
| **Source** | **Stated Objective** | **Overview of achievements** |
| London & Continental Railways objectives: 'LCR – An | • Build extra rail capacity between the Channel Tunnel, Kent and London (see below - 'Rail services') | • believed to have been achieved (see below - 'Rail services') |
| | • Reduce international and domestic journey times. | • achieved |

| | | |
|---|---|---|
| Incredible Journey', available from: www.lcrhq.co.uk | • Stimulate regeneration in inner London, the Thames Gateway and Kent Thameside (see below 'Regeneration and Restructuring') | • potentially or partially achieved (see below 'Regeneration and Restructuring'). |
| Union Railways objectives - Union Railways (1993)<br><br>British Railways Board Report, March 1993 | • To provide the main railway link between Britain and continental Europe | • achieved |
| | • To provide a major increase in the capacity and improvement in the quality of journeys between Kent, Essex and London | • believed to have been achieved (see below - 'Rail services') |
| | • To provide the transport spine for the East Thames Corridor development, shifting development pressure from the West to the East of London | • potentially or partially achieved (see below 'Regeneration and Restructuring'). |
| Key objectives as articulated by Mike Glover, Tech Director of Rail Link Engineering Channel Tunnel Rail Link section 1 : an overview – Mike Glover, Paper 13470, Institution of Civil Engineers – Proceedings, May 2003 | • **International railway link**. Forming the railway link between London and Continental Europe, with the provision for high-speed services beyond St Pancras to the north of England via the west-coast and east-coast mainlines. On completion of the CTRL the current journey time from the Channel Tunnel to London will be halved to 35 mins, resulting in journey times from St Pancras to Paris of 2 h 15 min and to Brussels of 2 h. | • believed to have been achieved (see below - 'Rail services') |
| | • **Commuter and freight capability**. Providing an increase in commuter capacity and improvement in the quality of journeys between Kent and London by providing the fixed infrastructure for the domestic operator to run high-speed commuter trains on the CTRL. Journey times from north Kent could be reduced from in excess of 1 h 15 min and those from Ashford halved. The railway will also provide the capability to carry freight trains on the CTRL. | • believed to have been only partially achieved (see below - 'Rail services') |
| | • **Urban rejuvenation**. Providing the transport spine for the east Thames corridor development, shifting development pressure from the west to the east of London and providing stimulus to the rejuvenation of three derelict areas—Ebbsfleet, the inner city areas around Stratford and Kings Cross—and to reinforce the growth of the area around Ashford. At the heart of each of these areas will be a CTRL station to facilitate the creation of a multi-modal transportation hub for the wider area. | • potentially or partially achieved (see below 'Regeneration and Restructuring'). |
| | • **Thameslink 2000**. Creating a new core station and interchange for Thameslink 2000 at St Pancras including the associated tunnelled rail link with the east-coast mainline which will greatly increase the functionality of the Thameslink system. | • achieved. |
| | • **London Underground**. Providing the extended London Underground Ltd (LUL) underground station at Kings Cross and St Pancras (as required by the 1987 Fennel report1) combined with new easy-access linkage to the mainline railway stations. | • achieved. |

Rail Link Engineering (see Project Profile) appears to have added three more objectives which are not shared by Government and LCR. These include the:

- provision for freight carrying capacity (though this is not defined more precisely). This matter is discussed below under 'Rail services');
- provision of a new station and interchange for Thameslink 2000 at St Pancras (this has been provided and is *not* discussed further below);
- provision for LUL at Kings Cross/St Pancras (again, this has been provided and is *not* discussed further below).

Given the extended period in which the planning and appraisal of CTRL evolved (some 15 years+ - see Project Profile), it is hardly surprising that there is no single straightforward response to a number of the above objectives.

#### 2.4.1.2 Unstated objectives

In addition to the CTRL objectives cited above there were a number of unstated objectives that warrant attention. These include:

- **National prestige:** Pre-hypothesis research and Hypothesis-led research (PHR and HLR) interviews suggest that CTRL was *mainly* about national prestige and not being left behind in the development of high speed railways following adverse comparison with French rail services on the Channel Tunnel line.
- **Extracting benefits:** there was (and still is) no clear or adequate means to determine the appropriate level of community benefits from projects such as CTRL. PHR interviewees suggested that CTRL benefits are of the 'trickle down' variety in terms of: improving the economic prospects of hub locations and regeneration at the hubs, and; general improvements in the transport network, in terms of: improved connectivity with Europe and time savings. It was also noted that the delivery of benefits will inevitably be a lengthy process given the very long implementation periods for hub developments.

#### 2.4.1.3 Project achievements relative to these objectives

Regarding Test 1a (original project objectives) the picture is unclear, as follows.

**Project costs**

Project costs escalated significantly over time in the 'early' planning period for CTRL, despite the frequent Treasury dictates to the contrary. Costs estimates in January1986 stood at £400m whilst costs for Phase 1 alone had risen to £1.255 billion by July 1990. However, it should be acknowledged that this cost increase spans a period of some five years in which route options were still being developed and the technical specification for the project changed significantly - from the upgrading of existing infrastructure to a fully dedicated high-speed route (1988-1990).

It is thus, in conclusion, difficult to argue that the 'on budget' aspect of CTRL was met in the *early* planning period for the project.

**Project programme and technical specification**

In regard to project programme and technical specification/quality objectives, it would seem that none were specifically set in this early planning period *before* the project became effectively ‘frozen’ (this did not occur until the project was launched as a PFI in the mid-1990s). It is consequently impossible to make a judgement about whether programme and technical specification objectives were achieved. However, it is abundantly clear that project specifications changed *dramatically* in response to the decision to proceed with CTRL as a

dedicated high speed line (see above) and that this critically impacted upon programme and specification requirements. (The costing of the original rail link, it should be noted, was not based on a high speed rail link, on account it is speculated, that this would be too costly and thus rejected by the Treasury).

Regarding 'emergent objectives' (Test 1b), the following findings are seen to be particularly relevant.

**Programme and budget**

In the context of Test 1b, if we take the financial restructuring of the project which took place in 1997/98 (when Government effectively rescued the project from impending disaster and CTRL was split into two Sections) as the 'new' emergent baseline, it *must* be concluded that the evidence collected for the Project Profile suggests that CTRL *was* delivered on time *and* within budget *following (but not before) the restructuring*. As shown by the Project Profile, in the absence of any adverse comment by the National Audit Office (NAO) (or other sources) regarding the technical specification or 'quality' of the project, it must be concluded that this aspect of CTRL has been *fully* achieved.

### 2.4.1.4 Commentary on project objectives

**The nature of CTRL project objectives**

The demarcation between objectives relevant to Test 1a (the original objectives) and those that are relevant to Test 1b (the 'emergent objectives) is *not* easy to define in precise terms. What does seem clear is that by 1990 the principal project objectives associated with the provision of increased service capacity between London and the Channel Tunnel, increased domestic service capacity and promoted urban regeneration (and, though not explicitly stated, the implementation of the project via private sector funding) had largely been established. Prior to that, in the 1980s, CTRL project objectives had been principally confined to obtaining an international rail link (London-Paris-Brussels) as cheaply as possible, and at *no* cost to the public purse. It is therefore acknowledged that CTRL project objectives 'matured' by the early 1990s after a considerable evolutionary period (see below) but that for the purposes of the following commentary only Test 1a is relevant.

Both PHR and HLR interviewees generally consider that the objectives for CTRL evolved over time *in response* to new and emerging contextual influences (notably changing stakeholder agendas), especially in the period prior to 1990. However, in broad terms, HLR responses suggest that this did *not* generally have an adverse impact on the project. Rather, it was considered that the fluidity inherent in CTRL's planning and appraisal process enabled the project to 'evolve' in an almost organic manner so as to address the various changing contextual influences. Many respondents in fact consider that this robustness the CTRL was delivered through (variously) a flexible, evolving and responsive approach which needed to address/accommodate the complexity of project developments and its ever-changing context(s) as well as the complexity associated with CTRL design issues, which also had to adapt to changing circumstances.

Notwithstanding this noted flexibility of approach, a number of HLR interviewees maintain that there *were* clear visions and objectives for CTRL but that these varied between different organisations over time and were not clear to all stakeholders. In addition, interviewees noted that too firm/broadly agreed objectives at the outset would *not* have been helpful or present a meaningful approach to reducing risk because of the very existence of changing contextual influences and emerging agendas. It was, in other words, seen as *impossible* to determine every facet of the project at the outset in light of the lengthy planning and implementation period of the CTRL project.

**Political influence**

Political considerations appear to have played a key role in determining the development of project objectives:

- Michael Heseltine is believed (by interviewee) stakeholders to have considered that combining the CTRL with the East Thames Corridor proposals would promote the regeneration of East London and thereby improve his political party's standing in this principally opposition-controlled area. Some also suggest that routing CTRL through East London would avoid marginal Conservative constituencies in South-East London. This allegation had been made previously by others and may indeed have been of significance in that the original BR SE London route seems to have been characterised as posing major potential negative environmental impacts that would have required extensive tunnelling;
- national prestige/status associated with the country having its own High Speed Railway Network also played its part, as noted above. It is suggested that the drive to achieve a 'cost minimisation' solution for CTRL was overridden by matters such as national prestige/status in the face of high speed rail developments on the continent and elsewhere.

**International link**

Initial CTRL project objectives (in the mid-late 1980s) were *principally* confined to obtaining an international rail link between the three capitals (London-Paris-Brussels) as cheaply as possible, and at no cost to the public purse. Whilst the latter cost objectives have arguably not been met (see below), it is clear that the CTRL comprises an efficient and effective high speed link to continental Europe.

**Regeneration and restructuring**

From 1990 onwards, through the interventions of the consulting firm, Ove Arup (in the form of its new route proposal) and Heseltine's political backing (for CTRL as an important component of growth and regeneration strategies within the Thames Gateway), the CTRL's objectives became inextricably linked with the Thames Gateway - both concepts derived 'strength' from each other. Arguably, this meant that the CTRL was also seen as a key means to support the economic pre-eminence of London and to effectively link the UK to Europe in a most tangible manner.

All CTRL hubs have significant development and regeneration components that are strongly linked to the real estate potential created by implementation of the CTRL. It is also clear that the development areas at King's Cross/St Pancras and Stratford have become a key financial component of the deal that government struck with LCR following the financial restructuring of the project – permitting them access to part of the real estate spoils.

Many interviewees noted that it is simply too early to make a judgment as to whether CTRL has, in itself, played a significant role in the regeneration and restructuring of the hubs (i.e., King's Cross, Stratford, Ebbsfleet and Ashford) and, more generally, the Thames Gateway. Nonetheless, it would seem apparent that the concept/vision of linking CTRL with the regeneration of these hubs (and Thames Gateway as well) has carried *significant* weight and belief over time since its advent in the early 1990s. There is also concrete evidence to suggest that belief in the catalysing role of CTRL has borne fruit by virtue of the very significant investments that have already taken place in the large-scale regeneration projects at King's Cross, Stratford and Ebbsfleet. Indeed, once the CTRL-Thames Gateway concept was firmly established, Local Authorities lobbied hard (from the mid-1990s onwards) for the introduction of domestic services on the line as this was seen as the key catalyst for growth/regeneration initiatives (PHR).

Interestingly, HLR interviewees suggest that it is the domestic rather than international services that are the key factor in stimulating developer interest - some also argue that for King's Cross, the CTRL project simply *delayed* regeneration initiatives (rather than accelerated them) suggesting that these could have been implemented much earlier but for the fact that the former railway lands in this location were part of the project funding mechanism.

The situation in regard to Ashford is much less clear, though here there appear to have been no major associated development projects specifically geared to the advent of CTRL - and there have been very significant fears that the potentially beneficial impact of CTRL has been undermined by the reduction in International Services to Ashford Station suggesting, at the very least, that 'belief' and branding as an international station is rather important in confidence building.

**Sustainable development and retrofitting**

Whilst the planning and appraisal of CTRL effectively preceded current sustainable development visions and concerns it is nevertheless interesting to note the very limited overt mention of the potential role of project as a means to promote/support such visions - other than rather oblique mentions of the re-use of brown field sites and the long-term promotion of 'green travel'.

Moreover, few interviewee responses explicitly refer to the role of planning objectives and strategies in shaping (retrofitting) communities so as to enhance their relationship with the CTRL and to implement sustainable development visions.

**Rail services**

Original CTRL project objectives called for (see Table 2.1 above) both a 50% increase in link capacity between London and the Channel Tunnel and the ability to maximise use of the new line for domestic rail users and for freight. It is clear today that the project has very significantly enhanced capacity and that passenger numbers are increasing - though these would still seem to be short of the original growth projections.

High speed domestic services commenced in 2009, dramatically reducing journey times between Ashford, Ebbsfleet, Stratford and Central London. Some interviewees suggest that the London Olympic bid was instrumental in obtaining the necessary funding for these domestic services.

S40 of the Channel Tunnel Act required BR to produce a plan (by end-1989) showing how it intended to secure the provision of international through rail services to various parts of the UK. This 'regional service' role has never been fully exploited by the provision of a direct link between the CTRL and cities such as Birmingham, Manchester and Edinburgh. It however may be considered the genesis of the High Speed (HS) 2 project.

**Funding/financing**

From an early stage it was intended that CTRL was to be privately financed, owned and operated; S.42 of the Channel Tunnel Act (1987) specifically stated that no Government support would be forthcoming for the construction of a new rail link. Yet it was clear that BR expressed significant doubt about the project's financial viability – for example, in 1990 BR's Joint Venture explained that the CTRL could *not* be funded commercially due to high construction costs (especially related to extensive tunnelling). Despite this, successive governments maintained the view that the CTRL should be undertaken as a PFI project and

consequently appointed a private consortium to carry out the project. In the course of doing this the consortium was granted significant property development rights (King's Cross and Stratford) to support project viability.

Some 12 months after their appointment, LCR communicated serious financial difficulties to the government as a result of lower than expected passenger numbers. Reacting to this, government was at pains to maintain its support for the project by (*inter alia*) providing for £3.75 billion of privately raised debt to be government backed to reduce the overall cost of financing (the government-LCR 'restructured deal' was announced in mid-1998). In light of this it would seem that much of the financial risk associated with the project had in fact passed to government – seemingly in contravention of S42 of the Channel Tunnel Act.

Drawing from the above analyses and observations of CTRL developments a number of potential lessons can identified from the Test 1 exercise for future MUTPs. These are summarized below in Table 2.2 below.

**Table 2.2: Test 1 Lessons, CTRL**

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| **Lesson #1: MUTP** planners and delivery agents need to take account of the likelihood that new project objectives will emerge over the course of the planning and appraisal periods as a result, among other things, of changing contextual influences (including emerging/changing stakeholder agendas). |
| **Lesson #2:** In the context of CTRL, 'emergent objectives' were no bad thing in that they ultimately helped shape the project to better suit its contextual influences than early proposals that were essentially limited to a 'least cost' solution for upgrading existing facilities. This seems to contradict the view that project objectives should be clearly set at the outset. Indeed, having clear and consistent objectives at the outset may be positively harmful to a project in not allowing it to respond to changing stakeholder agendas and other contextual influences. In light of this, it is clear that all key stakeholders should be involved in setting project objectives - not merely consulted 'after the event'. |
| **Lesson #3**: MUTP objectives should reflect the degree of interaction they are anticipated/expected to have with the areas they traverse and impact upon - such objectives should be accompanied by clear policy statements indicating the scope and nature of such impacts, using MUTPs as important agents of change. |
| **Lesson #4**: Wherever possible, MUTP objectives should differentiate between those objectives that are:<br>core/essential, and represent the fundamental reason why the project is being implemented, and; represent perhaps less certain but nevertheless desirable project outcomes. |
| **Lesson #5**: Having such a categorisation of objectives will enable a fairer and more consistent approach to be adopted to project appraisal and evaluation. |
| **Lesson #6:** Project objectives should be capable of being operationalised in such a way as to be meaningful to all stakeholders – interviewees expressed concern that objectives associated with both 'regeneration' and 'sustainability' are frequently meaningless due to their being incapable of implementation. |
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| **Lesson #7**: Projects like CTRL that have wider objectives - which suggest they are more a service than a commodity - and have potentially far-reaching agent of change impacts (and |

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| are likely to result in a commitment of significant public sector resources) ought to be debated and scrutinised at the highest political level. This process, furthermore, should be taken into account when setting (particularly) programme objectives. |
| **Lesson #8**: Early project cost, programme and quality data must be treated with caution - as should predictions about the beneficial nature of project impacts. In order to avoid not overly raising expectations of MUTP outcomes, project data should be released *only* when key route and other specification details have been effectively 'frozen' and are thus reasonably 'certain' and should be accompanied by a suitable cautionary note regarding its (in)accuracy. Here it needs to be noted that there exists a classic civil service mantra regarding the handling of stakeholder expectations - 'always under promise, over provide'. |
| **Lesson #9**: When setting project objectives regarding financing, funding and risk share, there is a need to ensure that an audit trail is established which is capable of tracking transactions that might otherwise become opaque as a result of so-called 'commercial sensitivity'. In the case of CTRL, for example, there is still lack of clarity regarding the full cost of the project in relation to the value of Railway Lands at Kings Cross and Stratford and post 1997/98 government guarantees. |
| **Lesson #10**: Project objectives should acknowledge that the benefits/costs and impacts associated with MUTPs are:<br>• often very difficult to discern at the outset<br>• often only realised in the long-term<br>• often unexpected |
| **Lesson #11**: Objectives for MUTPs should provide for the establishment of measurements and systems/processes that enable clear and transparent appraisal and post-project evaluation of performance on a consistent and accurate basis. |

### 2.4.2 Test 2: Sustainable development visions and challenges

It should be noted that much of the prevailing policy guidance available from sources identified for this analysis does not readily lend itself to allocation to each of the four dimensions of sustainability adopted by OMEGA since it covers the general multi-dimensional nature of sustainability *as a whole*. Thus, a new category has been adopted against which project achievements are to be tested - 'general sustainability principles'.

#### 2.4.2.1 Policy background

Early responses to the Brundtland Report by the British Government, which can be taken as prevailing policy background in the formative years of CTRL planning and appraisal (i.e., broadly from late 1980s to mid-1990s), are confined to the following:

- "Our Common Inheritance" (1990) White Paper which outlined the intention to ".....develop policies consistent with the concept of sustainable development".
- "Sustainable Development - the UK Strategy" (1994) which highlighted the important role of the planning system in working towards achieving more sustainable development. Within this strategy, particular reference is made to the importance of such factors as the re-use of previously developed urban land and the need to guide new development to locations which minimise the need to travel and encourage the use of public transport.
- National Planning Policy Guidance (PPG1): General policy and principles (1997) which provided a slightly more focused and definitive sustainable development visionary (SDV) framework to guide new development and transport.

Against this background it is argued that at the most important formative period in CTRL planning and appraisal: sustainability was essentially a vision that was still in its formative stages and still evolving with the result that the UK Government was at the time struggling to come to terms with how best to incorporate SDVs into planning and transportation policy frameworks. As a consequence there existed no authoritative, definitive or readily applicable policies and guidelines relating to 'sustainability' that one could argue should or could realistically have been taken into account.

It is thus hardly surprising that OMEGA research to date has uncovered no outright statement indicating that the planning, appraisal and delivery process for CTRL (nor indeed for most other of its case study projects) was either supposed to consider 'sustainability' as a key objective or appraisal criterion or that those conducting this process included such concerns in the course of their deliberations - except insofar as objectives relating to such matters as regeneration and environmental protection. Moreover, in this context it is interesting to note that there appears to have been little (if any) attempt to subsequently 'retrofit' CTRL so as to address/accommodate guidelines on promoting sustainable development that have been available since 1997 - a point emphasised by a number of HLR interviewees.

#### 2.4.2.2 General sustainability principles

**Maximise re-use of brownfield sites in existing urban areas (particularly housing**):

From the early 1990s onwards CTRL was positioned as both a key spine for the Thames Gateway and a significant catalyst for the regeneration of the former Railway Lands at King's Cross and Stratford, and former Blue Circle quarry sites at Ebbsfleet. These areas have attracted very significant investment in development that is expected to regenerate the areas in which they are located. It may therefore be concluded that CTRL has functioned as an important catalyst to further welcomed development. Indeed, the Royal Town Planning Institute's (RTPI) observations on CTRL (provided in the context of the RTPI Planning Awards 2008) indicated that its panel judges consider the regeneration benefits brought about by the project to be very significant in the Thames Corridor and North Kent.

However, this apparent 'success' must be seen against the background of the following concerns:

- prolonged discussions regarding CTRL effectively served to slow down urban regeneration in the area;
- CTRL hub development is *not* seen as fundamentally dependent upon the availability of CTRL's international services;
- King's Cross redevelopment has led to the displacement of local communities and businesses contrary to the rhetoric;
- It is widely believed that the full impacts of CTRL related regeneration at the hubs will *not* materialise for some time to come.

**Integrate transport programmes and land use policies**

Land use and development policies for King's Cross and Stratford seek to maximise the benefits associated with their high degree of public transport accessibility - predominantly high density commercial development which is oriented around access to the stations.

Similarly, development plans for Ebbsfleet seek to encourage the location of higher density components close to the international station. However, the achievement of this aim is somewhat frustrated by the existence of a very large (3000 space) surface car park provision

which lies adjacent to the station which somewhat undermines the sustainability case for the CTRL. Accessibility to the station from the more remote parts of the development (mainly housing) by public transport is dependent upon a 'Fastrack' bus service with (some) dedicated paths.

**Environmental outcomes**

CTRL was accompanied by extensive mitigation measures (covering landscape, ecology, archaeology and cultural heritage, noise, vibration and air quality and countryside restoration and management) which are generally considered to be exemplary. Indeed, there were no adverse observations from interviewees on this matter.

### 2.4.2.3 Economic sustainability principles

In terms of economic sustainability, interviewees noted that the full economic (and other) benefits of CTRL have yet to be realised given that hub developments associated with the project are still under development. As noted above, they largely considered that the success of hub developments is *not* generally dependent upon the presence of CTRL (though domestic rather than international services are seen as a little more significant in this respect). Some even consider that the lengthy discussions over CTRL at the planning stage effectively blighted King's Cross for many years. Having said this, the linking of CTRL with associated real estate at King's Cross, Stratford and Ebbsfleet has definitely resulted in a significant inflow of private sector capital creating new jobs and floor space devoted to economic (commercial) uses in the areas under question.

More broadly, CTRL was positioned as a very significant means to stimulate economic development in the capital and Thames Gateway, and thereby enhance/sustain London's position as the pre-eminent financial centre in Europe and globally. The ability of CTRL to 'plug' the UK economy into that of the EU more firmly was consequently seen as a key factor in its initial promotion by government and a major contribution to sustained economic growth.

Given that environmental matters were considered seriously at the route option appraisal stage (if not at the initial planning stage), it may be argued that economic growth/development was encouraged to be broadly compatible with environmental objectives.

### 2.4.2.4 Social sustainability principles

Efforts to alleviate CTRL project impacts were *generally* not focused on social issues. Indeed, development proposals at King's Cross were criticised by some interviewees as effectively displacing local communities and businesses in favour of major new commercial development. At Ebbsfleet, one of the major challenges is the creation of an entirely new community that is seen to be socially inclusive in a fundamentally deprived area. Given that the development is *still* in the planning stage, it is clearly too early to tell whether social inclusion/cohesion is likely to be achieved. However, interviewees have understandably raised the concern that the occupants of new housing at Ebbsfleet are likely to be commuters who will have only limited engagement with the wider 'local' community.

CTRL is positioned as a significant catalyst for the regeneration of parts of London and the Thames Gateway and growth nodes in areas such as Ashford which in turn is intended to create significant new housing, employment, education, shopping and leisure/community facilities. These benefits are being realised at King's Cross and Stratford and are planned for Ebbsfleet. However, it is still too early to conclude that such initiatives will, in reality, secure access to such benefits.

**Community engagement**

Early attempts at consultation in the planning of the CTRL in the mid-late 1980s were seen by interviewees as naive and 'heavy handed' with the result that public reaction was universally hostile - the then project sponsors were seen to be ill-equipped to handle consultation. Later consultation exercises, however, were generally seen as much more 'professional' and useful, leading to rather less hostility on the part of the public. Both the promoters and affected local authorities played a key role in all consultation exercises– with the result that these groups consider that public consultation "went well/smoothly". However, the actual community engagement process for CTRL *must* be seen against the background of the fact that both the sponsors and local authorities were already committed to backing the project by the time this later public consultation took place.

There was, nonetheless, the view in certain quarters that community group roles were perceived in terms of moderating and/or frustrating the plans of developers rather than generating new community led visions. Notwithstanding this, the community group stakeholders interviewed consistently emphasised the need to work closely with both developers and local government to ensure the free and proper exchange of information and views. There was also a general consensus amongst interviewees that there is a need to work more closely/build trust with community group stakeholders to keep them fully informed throughout the project - so as to identify/anticipate potential issues going forward that could otherwise jeopardize the planning and delivery process.

### 2.4.2.5 Institutional sustainability principles

The organisational arrangements associated with the preparation, implementation and operation of the CTRL are highly complex, involving a large number of public and private sector interests and institutions. It may be argued that this was necessarily the case given the high profile/high risk nature of the project, the breadth and depth of sectoral interests involved and also the lengthy period required to plan and deliver the project. However, this multiplicity of stakeholder groups/bodies clearly posed significant institutional and organisational challenges and led to the project having to respond to different agendas at different stages in its evolution.

Post-project completion, there is little to suggest the availability of any one single institution (or organisational structure) that has been established to consider how best to retrofit CTRL so as to serve the wider and more current SDV agenda. This would seem to parallel the present lack of a coherent overall institutional structure capable of effectively pursuing and leading the 'sustainable' development of Thames Gateway.

In this context interviewees suggest:

- the risk averse culture prevalent amongst civil servants and self-perceived role as protectors of their political masters is seen to mitigate against their ability to take a long-term view of infrastructure;
- high staff turnover in all agencies associated with the project was seen as detrimental, whilst (conversely) continuity in key positions enables consistent and speedy decision-making;
- poor cross-functional sharing of appropriate information/data and ideas (silos) was identified both within and between organisations and networks;
- the project was impacted by too many institutions with unclear remits and responsibilities, resulting in a lack of focus and real purpose.
- there is little apparent enthusiasm for the use of SDVs as a framework for MUTP appraisal due in part to the perceived difficulties in defining 'sustainability' in an operationally assessable manner.

- both public and private sectors need to have full understanding, based on the proper availability of information, of each parties' constraints.
- co-operation and relationship building is seen as more fruitful than an adversarial relationships.
- it is helpful to maintain consistency of personnel throughout the planning and delivery process so as to maintain mutual understanding of negotiation positions.

Drawing from the above analyses and observations of CTRL developments a number of potential lessons can identified from the Test 2 exercise for future MUTPs. These are summarized below in Table 2.3

**Table 2.3: Test 2 lessons, CTRL**

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| **Lesson #1:** SDVs do *not* presently offer a better framework for judging the success of MUTPs due to the lack of workable, operationalised definitions of the various dimensions of sustainability and the consequent unavailability of associated appraisal criteria. There is thus still much work to be done in translating SDVs into a meaningful framework that can influence both MUTP planning as well as day-to-day decision-making. Respondents in particular conceded the need for a much broader range of criteria for the appraisal of MUTPs that are better able to emphasise 'sustainability'. With this in mind, it is it is suggested that SDV frameworks for MUTPs need to be:<br>• clear, consistent and applicable to all parties in MUTP planning and delivery (making clear all respective roles and responsibilities)<br>• capable of being operationalised by MUTP planning and delivery agents so as to influence decision-making more directly. |
| **Lesson #2**: Professional silos and current project management approaches to MUTP planning and development represent barriers to the introduction of a more holistic view of SDVs as a framework for MUTP planning, appraisal and delivery. This is particularly the case since, arguably, the multi-dimensional nature of 'sustainability' demands an holistic view of the complexities associated with MUTPs and the developments/initiatives with which they are associated. |
| **Lesson #3:** The relationship between CTRL and 'sustainability' is generally seen more in terms of the delivery of regeneration benefits at development hubs than in relation to the rail services themselves. Indeed concern is expressed that projects such as CTRL simply facilitate ever more travel, both long distance and commuting, which is in itself unsustainable. Arguably the essentially low density nature of development at Ebbsfleet adds further doubt about the sustainability credentials of CTRL. |
| **Lesson #4**: Interviewee responses and reports compiled for the CTRL project suggest a degree of scepticism about the true ability of major rail projects such as the CTRL to catalyse regeneration. Some saw CTRL as effectively blighting King's Cross as a result of the lengthy planning period for the project. That said, it is hard to argue that CTRL has *not* led to the advent of major private sector investment in regeneration. Perhaps the most significant point here is that tying the provision of the infrastructure (CTRL) to the regeneration of former Railway Lands (at King's Cross and Stratford) was a sensible approach whereby mutually beneficial objectives were achieved. However, it is also clear that lack of parallel public sector investment is likely to result in non-achievement of the full suite of potential sustainability benefits (e.g. lack of adequate levels of public sector investment in Thames Gateway). |
| **Lesson #5**: Evidence from the TGV experience in France, to date, and the less directly comparable experience of the rapid rail transit systems in the UK, Germany and North America, suggests that rail investment itself is *unlikely* to stimulate economic development, but that it may be a catalyst in the process *if* other favourable conditions exist; in other words |

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| rail investment will *not* itself spark a substantial process of economic development, but it can be used as a strategic instrument to exploit development potential. |
| **Lesson #6:** There appears to be a distinct lack of clarity on the part of stakeholders as to how MUTPs and the development/regeneration projects they spawn might be planned and/or retrofitted so as to later achieve key sustainability objectives. |
| **Lesson #7:** Sustainability appraisals should be a key part of the initial project conception, planning *and* appraisal process to determine: the need/justification for the project, and; alignments, associated developments and technical specifications etc. that will enhance the sustainability profile of the project and the areas on which it impacts. Most importantly, such appraisals should not simply be used as a means to appraise the performance of different pre-determined options. |
| **Lesson #8:** Sustainability appraisals for MUTPs should, by virtue of the size of such projects, their cost and potential impact, be the subject of scrutiny by parliament. |
| **Lesson #9**: Speeding up the planning, appraisal and delivery of MUTPs in a manner that also delivers environmental benefits is seen as important by government. However, such attempts to accelerate developments may present conflicts with the need to allow complex projects have 'time to breathe' and thereby adequately mould themselves to changing contextual forces so as to ultimately make them more robust. |
| **Lesson #10:** MUTPs that spawn significant new suburban development may *not* be a positive influence on social cohesion - though community building could never be justifiably a realistic objective for MUTPs. |
| **Lesson #11:** Full community engagement from the outset is seen as the most appropriate means to mitigate downstream MUTP planning and delivery problems associated with stakeholder relations. Early heavy-handed tactics as pursued by BR on CTRL led to continued suspicion of sponsor motives for a substantial period of time after. Building trust and consensus-building – as early as possible - is therefore key in this respect. |

### 2.4.3 Test 3: Treatment of risk, uncertainty and complexity and the power of Context

#### 2.4.3.1 Context:

CTRL responded to changing contextual influences exerted through a variety of project stakeholders and champions which even early on saw the original project objectives supplanted by both 'new' initiatives associated with the Thames Gateway/East London redevelopment aspirations and government's willingness to accept financial risk when the project was in financial difficulties in 1997/98.

HLR interviewees reinforce the importance of the power of context on MUTPs by noting that the changing contextual elements impacting on the CTRL project resulted in the evolving (organic) nature of the project – and the adoption of planning and delivery processes that responded to these moulding influences over time. This appreciation of the power of context and the importance of MUTP planners and promoters being context sensitive at all parts of the project lifecycle is clearly recognised by numerous PHR and HLR interviewees as being especially significant *if* project 'success' (in its widest of terms) is to be achieved.

**Contextual matters of greatest significance**

The most significant generic contextual elements f which need to be clearly understood by MUTP planners and delivery agents according to the analysis of interviewee responses include:

- changing stakeholder perspectives/motives/agendas; changing political contexts;
- changing financial/economic contexts, and;
- the ability of MUTPs to function as agents of change which implies powers of new context setting.

The more specific contextual elements that are seen to have impacted on CTRL include:

- 2012 London Olympics - effectively served to bring forward the implementation of high speed domestic services;
- government policy agenda - CTRL was seen as a means to (variously) support London's financial position, plug the UK economy more firmly into the EU, fulfil an important role relative to the restructuring and regeneration of Thames Gateway/East London;
- lobbying initiatives - for stations at Stratford, Ebbsfleet and Ashford as a means to foster regeneration and growth and to enhance the viability of real estate development;
- the prevailing politics and project champions - the arrival and influence of (especially) key political personalities who became project champions both moulded and made use of prevailing political contexts to further specific agendas, and;
- national prestige - early imperatives to deliver a 'least-cost' CTRL rail link were ultimately overridden by concerns over national prestige.

HLR interviewee responses identify a number of key characteristics associated with MUTPs which are themselves contextual elements and need to be taken into account in the decision making process if a successful project is to be delivered. These include:

- the high level of cost/capital investment requirements;
- the potential national/regional significance of such projects (e.g. in terms of impacts, purposes and/or meeting of strategic needs);
- the role of such projects as likely drivers/agents of change;
- the political/parliamentary approval and/or public inquiry requirements;
- their need to fulfil multiple roles and have multiple types of impacts,
- the likely complex developments that will emerge as a result of lengthy MUTP planning & delivery periods, complex construction characteristics etc.

**Political influence**

Interviewees considered that political influence/support for a project is the most critical contextual factor in all aspects of MUTP planning, appraisal and delivery and a clear pre-requisite to the successful launch of a project. This is seen as somewhat inevitable given that MUTPs are usually costly, require some form of government backing, are potentially controversial and have wide ranging impacts over a broad area etc..

Political patronage in the form of well-respected and influential project champions (at numerous levels) is also seen as a key asset for MUTP project sponsors, planners and delivery agents. Champions fulfil a number of important roles as a foci for:

- clarifying/setting/adjusting project objectives,
- establishing project credibility and mandate for project teams,
- consensus building and project networking.

In this connection it is essential for champions, project sponsors and planning & delivery team leadership to display acute awareness of the subtleties associated with fluid political contexts.

**Perceptions of context**

HLR responses suggest there are different professional perspectives on the influence/importance of context – here planners/politicians are seen as more contextually aware than 'traditional' project managers who are driven more by the iron triangle of project objectives and day-to-day aspects of project delivery according set-out programmes.

Interviewees also support the notion that there occur moments in time (contexts) when circumstances are ripe for decision-makers to 'seize the moment'. This lends support to the belief that successful project planners and delivery agents need to a degree to be opportunistic e - albeit in an instinctual rather than formal way.

Key contextual forces/influences that are especially seen to lead to greater RUC in the 21st Century include:

- unstable economic circumstances;
- the use of new technology;
- climate change and energy concerns, and;
- the extended time required in completing MUTP planning and development processes.

Appropriate responses to increased RUC in the 21st Century are seen to include:

- enhanced competencies in the planning and delivery of MUTPs - especially, the need for a broader holistic view of project planning and delivery processes and enhanced political/tactical awareness of the influences on such processes;
- the need to understand better the influences associated with prevailing and emerging future contexts on the planning and delivery process for MUTPs;
- the need to identify and anticipate through appropriate strategies the contextual changes that may be brought about by MUTPs;
- the need for planning and implementation strategies and programmes that are robust but also capable of ready adaptation in the face of changing needs/demands and contextual items, and;
- the need for greater stakeholder involvement in the planning and delivery process, including the identification of prevailing and emerging/changing stakeholder motives and agendas.

**CTRL as an agent of change**

In light of the positioning of CTRL as a key force in related urban regeneration, growth and restructuring initiatives, it may be concluded that the project was indeed seen by those interviewed as a very significant agent of change. And while project stakeholder interviewees suggest that the relationship between the CTRL and these wider initiatives has *not* been fully exploited in terms of coherent land use-transport strategies (and retrofitting strategies) they do note that the project has had a beneficial impact on the encouragement of investment in (particularly) regeneration. However, stakeholders also suggest that the full benefits of the project in terms of regeneration and growth will only materialise in the longer term.

Little thought appears to have been given to the institutional context into which the project was placed - no evidence of the establishment of an institutional framework capable of dealing with the multiplicity of contextual elements (especially stakeholder contexts) so as to maximise the potential benefits of CTRL on the Thames Gateway - the prevailing institutional framework remains somewhat fragmented, unfocused and under-resourced.

**Context monitoring**

There is little evidence to suggest that there were explicit mechanisms and procedures for identifying and monitoring contextual forces, except in terms of stakeholder forums/community consultation processes and formal 'planning' procedures that primarily dealt with detailed and day-to-day issues (such as mitigation measures). However, the many references to relationship and consensus building on the part of key decision-makers suggests a considerable degree of 'informal' context awareness and scanning - politicians are seen to be especially sensitive to (changing) context.

### 2.4.3.2 The role of strategy

**CTRL as an evolving project**

Interviewees noted that CTRL project objectives were essentially subject to considerable change as a result of emergent agendas during the project planning period. HLR interviewees in particular observed that:

- there is evident tension between 'vision' and political pragmatism - politicians in the UK are rather uncomfortable with overtly backing a ‘vision’ as this may present them as a hostage to fortune –
- short-termism and progressing matters through consensus building is seen as the most usual modus operandus;
- political pragmatism is seen as the enemy of strategic thinking and strategy formulation/implementation;
- poor cross-functional sharing of appropriate information/data and ideas (silos) was identified both within and between organisations and networks, and;
- the UK seems lack the tradition of taking tough strategic decisions on infrastructure developments that require firm political support for costly projects.

All of the interviewee observations suggest (for whatever reason) there was indeed no clearly thought out, all-embracing ‘strategy’ for CTRL’s development – in that it was more usually characterized by ad hoc decision-making in response to new and changing contextual elements. PHR interviewees considered that Government needs to become more involved in resolving high level strategic issues such as facilitating co-ordination between different transport sectors working on large projects.

**Impact of visions/objectives on risk**

The existence of clear visions and related objectives at the commencement of project planning and delivery was not perceived by interviewees as being a significant means to mitigate risk. Rather, in the case of CTRL, it was acknowledged that changing stakeholder agendas that emerged over the project's planning and implementation period meant that having firmly fixed visions/objectives may well have increased risk by reducing its ability to respond to these fluid agendas

The lengthy planning and implementation period for the CTRL was itself seen by several interviewees as being a significant source of risk and uncertainty - having particularly serious knock-on effects for private sector investors with many parties explaining that it is still 'early days' in this respect in that many impacts are only likely to become apparent in the long-term.

**Factors that affected balance between vision and practicality**

Early project planning was wholly driven by perceived practicalities - e.g. identification of least cost route. Subsequent project planning work in the early 1990s and onwards saw the

balance tip in favour of a more vision-led approach (but arguably without the commitment of significant public sector resources and institutional support and consequent over dependence on private sector investment in regeneration sites at King's Cross, Stratford and Ebbsfleet).

**Robustness and adaptability**

As earlier indicated a number of interviewees suggest that CTRL was delivered through (variously) a flexible, evolving and responsive approach which needed to address/accommodate the complexity of the project and its ever-changing context, as well as the complexity associated with the project's CTRL design, which also had to adapt to changing circumstances.

The fact that the CTRL (and it is suspected other major projects as well) are inevitably evolutionary in nature as new and changing stakeholder agendas emerge over time was seen as beneficial by most respondents in that it enabled the project to respond in an appropriate manner to changing contexts/circumstances. In this connection, one interviewee observed:

"..... basically you plan the project and then see what it can do in terms of delivering other benefits - but initially you concentrate on the project itself. This is *not* muddling through, it is just the way the system works whereby you have the project up front and then expose it to the system in which 'planning' plays the role of honest broker, hearing all stakeholder views....."

That said, it there was a general conclusion that it is doubtful that government *deliberately* adopted a strategy for planning CTRL that was 'flexible, adjustable and robust, paying attention to short, medium and long term consequences simultaneously'. Rather, it would seem that new contextual influences and ideas simply occurred in an ad hoc manner which ultimately served to mould the project over time and place.

**Projects as closed/open systems**

As earlier noted , the analyses of the responses thus far suggest that the project was essentially treated as a 'closed system' with the following qualifications:

- it was initially treated as a closed system in terms of its financial (demand) modelling and appraisal as part of the business case assembly;
- it was, however, subsequently treated as an 'open system' in terms of accommodating broader elements that were ultimately a major part of the justification of the project (i.e. regeneration and economic growth associated with East London and the wider Thames Gateway).

HLR interviewees noted inconsistent treatment of the project as closed or open systems, at different stages in the project's lifecycle. Initially commencing as a closed system the transport services it offered were treated as commodified services the returns on which would ultimately justify the project or not. When the sums did not add up, so to speak, an open system approach to the project was employed whereby broader benefits were taken into account (in terms of real estate uplift and agglomeration advantages) as a basis for justifying the project anew when faced with criticism that passenger demand forecasts were incorrect. This indiscriminate swapping from closed to open systems analysis was both a method that sought to mitigate risks and uncertainties but one could argue simultaneously spawned additional risks and uncertainties.

### 2.4.3.3 Governance, regulatory frameworks and enforcement

**National / International standards and regulations**

Interviewees noted that the Hybrid Bill process significantly reduced risk of delays (rigorous and fast legal procedures were adopted). This was seen as both fair and rigorous and minimised delay.

**Extracting benefits from MUTPs/CTRL**

Considerable risk and uncertainty was noted by HLR interviewees regarding the extraction of benefits from CTRL through the planning system. This was suggested on the basis that it was associated with:

- an uneasy bargaining atmosphere initially in view of the many uncertainties at the start of the project;
- a lack of flexibility on the part of the public sector in light of prevailing (planning) rules and regulations;
- an absence of consistency on the part of the public sector in application of these rules and regulations;
- applications for real estate projects which took a long time to complete (and was difficult to foresee future needs for where S.106 was employed);
- applications which span several local authority areas, which call for a clear need for mutual understanding of each parties' constraints and opportunities. (This was seen as a must in moving relationships forward).

Notwithstanding the above, HLR responses also suggest that the planning instruments/processes employed for the CTRL were “more-or-less” adequate and that the most critical factor (for the public sector) was the bargaining skills of its representatives in their dealings with the private sector and community groups.

**Availability of national agency and national planning framework**

What was especially highlighted as important by interviewees was the fact that during CTRL’s planning and delivery stages, there was *no* clearly identified body/agency explicitly tasked with taking a multi-disciplinary/multi-functional view of the roles, functions and implementation needs associated with the project. As a result, government policy capable of guiding CTRL planning and delivery was effectively reflective of departmental and professional silos. For example, the Department of Transport (DoT) pursued solely transport matters, while the Department of the Environment (DoE) sought to insert broader considerations in the project’s planning, appraisal and delivery considerations. As already alluded to, ultimately, it took a powerful political champion to overcome (or bypass?) these silos in the form of Michael Heseltine (prompted by the Arup proposal) who pursued his own vision of a wider role for CTRL.

Interviewee comments suggest that National Planning Frameworks (NPFs) potentially offer a positive background against which MUTPs can (and should be) planned and delivered. The bulk of these supportive comments were made by interviewees from the private and NGO/other sectors with the basis for such support coming from the following statements:

- NPFs are essential, especially as a means to establish relative priorities for MUTP delivery;
- NPFs could provide a sound basis for political and financial commitments to be established, and
- while NPFs are essential in principle, the 'devil is in their detail'.

Potential issues and problems cited by interviewees that could accompany the establishment of NPFs in the UK include:

- NPFs are likely to become a hostage to political expediency;
- the need to acknowledge that NPFs should represent a framework rather than a rigid, inflexible plan and will need constant monitoring and updating;
- NPFs would need to be all-embracing in regard to the prioritisation of manifold stakeholder agendas and sectoral issues and also balance national needs with regional/local concerns, and;
- UK (including the civil service) has no track record in the kind of strategic thinking that should accompany the establishment of NPFs.

### 2.4.3.4 Project information

**Project information**

Interviewees suggested that MUTP planning, appraisal and implementation need to be "certain", "realistic" and "enable the proper integration of actions and activities by all concerned parties". 'Certainty' here is seen as particularly critical in terms of commitments to the delivery of key decisions, approvals and infrastructure components (by a specified time) on which parallel investment and funding decisions are to be based.

The preparation and delivery of comprehensive, fully-integrated plans/programmes is, however, highly dependent on transparency within and between involved agencies in regard to the availability of up-to-date, accurate input data. This requires a high degree of co-operation and trust. The availability of high quality project information potentially assists in the ability to identify/anticipate moments in time in project planning and implementation when circumstances are ripe for key decisions to be made. Poor cross-functional sharing of appropriate information/data and ideas (silos) prevents this bringing together of key information and was identified by HLR interviewees as prevalent both within and between organisations and networks in CTRL planning and delivery activities.

HLR interviewees also suggest that the collection and analysis of excessive amounts of data concerning forecast project performance can often obscure rather than enlighten. Such data is seen as no substitute for experience and expertise, especially in terms of risk mitigation and tactical awareness in regard to the handling of political influences affecting project developments (which was all pervasive in CTRL's planning and delivery).

### 2.4.3.5 Tools/techniques for coping with risk, uncertainty and complexity

**Perceptions of models and analytical tools**

It is clear from PHR and HLR interviewee responses that current project appraisal tools, methods and processes (especially the manner in which they are utilised), are seen widely as fundamentally flawed, and that consequently, any dependence upon these is unlikely to deliver a successful MUTP.

Key miscellaneous issues associated with the current MUTP appraisal 'toolbox' include:

- the inability to identify, quantify and 'weight' *all* relevant factors that determine/influence project outcomes with any real degree of precision;
- current 'costs' are perceived to be more tangible than (future) 'benefits';
- the lack of attention to future contextual elements/conditions likely to impact on project outcomes;

- the need to understand that political influence is (particularly) likely to override the outputs from the use of traditional appraisal tools, methods and processes - and that 'gut feeling' and the application of experience are often perceived to be more effective;
- the perception that political decision-makers are often told “what they want to hear” in terms of modelling outputs that purport to represent project achievements;
- the fact that the shortcomings associated with current appraisal methods are not adequately explained to decision-makers;
- the Treasury appear to have been very reluctant to give any sort of recognition to regeneration benefits until rather late in the day (when called to account by the NAO).
- there is a perception that the UK employ rather immature methodologies for valuing externalities associated with major infrastructure projects - including factors such as innovation, enhanced skills/knowledge building etc.

Notwithstanding these issues, interviewees emphasised the need to build-on current MUTP appraisal tools, techniques and processes rather than abandon them - by, for example, making use of multi criteria approaches to MUTP appraisal that take a fuller account of future contextual conditions and place current methods and techniques such as CBA in their appropriate context rather than making them all purpose methods that claim they can appraise more than they actually do.

**Risk sharing**

Interviewees confirmed that determining the appropriate degree of risk-sharing between the public and private sectors in MUTP developments is *extremely* problematical. The CTRL experience is a case in point. Judging the appropriate balance is seen as an art rather than a science that requires considerable skill and experience across the board. Interviewee respondents indicated that in particular: transferring risk to the private sector carries with it the risk that the project scope/nature may change from that originally conceived – as a result of re-negotiation of terms and/or the private sector delivering the project it can best 'afford'; risk management requires the type of expertise that is not presently available in the public sector; balancing risk management between the public and private sectors is difficult when gains may only be realised in the long-term, while political horizons are typically short-term.

PPP/PFI arrangements pose a level of private sector risk exposure that is under appreciated by the public sector - e.g. where projects require heavy up-front expenditure in return for proceeds that may not be fully realised for a considerable period of time. With this in mind, some interviewees consider that government should absorb such risk in light of its ability to raise 'cheap' finance.

In 1997/98 the government had little option but to transfer much of the financial risk associated with CTRL back to the public sector so as to ensure that the project would not 'fail' or stall. Moreover, interviewee responses suggest that this action was based upon political risk considerations rather than financial risk concerns - there was sufficient political consensus to enable the government to take this action based on the fear of loss of prestige (political and national prestige) in not completing the project.

Government failed to take full account of the risks associated with undertaking CTRL as a PPP/PFI project - in the event the project appraisal process failed to anticipate the impact of low cost airlines and were consequently manifestly optimistic, resulting in the need (in 1997/98) for government to shoulder much of the risk burden. Indeed, it would seem that successive governments viewed the PPP/PFI approach as the 'only game in town' that was likely to be politically acceptable.

### 2.4.3.6 Project stakeholders

**Stakeholder scanning**

As noted above, although according to interviewee responses indicated that early CTRL stakeholder consultation proved to be ineffectual (and actually resulted initially in hostility towards the project), later activities were better organised - especially in terms of the high degree of collaboration between local authorities in obtaining mitigation measures and making good use of CTRL as a catalyst for growth/regeneration and the dissemination of project details to communities and community groups. Formal groups such as the High Level Forum, Planning Forum and community liaison bodies latterly provided the *opportunity* to scan stakeholder agendas and viewpoints in regard to CTRL planning. It is, however, unclear how effective these vehicles were or indeed the extent to which project sponsors actively sought to discern prevailing/changing stakeholder agendas.

The Planning Forum was seen (by those involved) to be a very effective vehicle for decision-making on the route, mitigation measures etc. - it was a technical forum and did not include members of the public or politicians but reported decisions to the High Level Forum which included Council members (politicians). This perception must, however, be seen against the background of the fact that Local Authorities involved in the consultation process were, in essence, committed to the idea of CTRL and saw their prime role as getting the 'least adverse' result .

**Stakeholder engagement**

HLR interviewees were equally divided on whether community engagement can make a positive contribution to MUTP success (however this may be defined). Those who saw such engagement in a positive light commented that formal objections can actually lead to improvements in project concept and design and that consultation produces decisions that are ".....fast, transparent, inclusive, robust and defensible and of a high quality." By contrast, those who adopted a rather negative position on the subject commented that community engagement simply leads to delays and is generally only concerned with small-scale/local Nimby issues.

There was, however, general consensus regarding the need for MUTP stakeholders to work more closely and build trust with other stakeholders to keep them fully informed throughout the project - so as to identify/anticipate potential issues going forward that could otherwise jeopardize the planning and delivery process. However, one interviewee commented that:

"…… you know this is a really high profile site, on any other site probably they would have got further, but the stakes are so high here politically and financially, legally, from national government to London government to Camden Borough Council, that it has proved very, very difficult to get the kind of balance that we would like to see".

In such circumstances, without doubt, lobbying is acknowledged as having played a key role in shaping CTRL developments (particularly the route and station selection process).

Interviewees acknowledged that consensus building is critically important at the project planning stage. This is particularly significant at the highest political levels given that the size/cost/potential impacts of MUTPs such as CTRL make it imperative that key formative decisions are taken at the heart of government.

**Trust and transparency**

The positioning of CTRL as a means to promote regional restructuring and urban growth and regeneration required both considerable faith and strong advocacy skills amongst key political decision makers. It also required consensus-building skills amongst key political and other influential decision-makers, especially at the project conception, planning and appraisal stages - i.e. before the project has gathered sufficient 'momentum' to have a life of its own. Consensus-building requires 'trust' and strong lobbying skills and benefits immensely from transparency in transactions and decision-making.

Interviewee responses suggested that the value of 'working together' and the close relationship of networking and trust is seen as significant by most MUTP stakeholders, particularly in regard to overcoming 'silo thinking'. The same source argued that while consensus-building indeed requires 'trust' and strong lobbying skills - to demonstrate the reality of benefits accruing from mutual support - transparency is all important.

In the case of the CTRL it would seem that the establishment of close working relationships within and between key organisations greatly helped to overcome barriers and silos – with the result that there arose a greater mutual understanding of different organisation's motives and positions.

One interviewee noted:

"You have to communicate, you have to have fun, you need to trust one another, and be seen to deliver on what you say and if there is a change you defend and explain it. It is really important to communicate with all sectors; the technocrats; the bureaucrats; the communities; and (to posses) the ability to communicate in a language people understand."

### 2.4.3.7 Lesson learning/sharing

The retrospective research and analysis undertaken of the CTRL suggests there is little evidence of systematic proactive institutional learning on the part of the project promoters and other stakeholders - despite the apparent abundance of relevant knowledge and experience amongst various international consultants and responsible organisations in continental Europe. Interviewee responses suggested
the need for institutional and professional learning is very laudable – always provided it is applied in a context sensitive manner.

While the obstacles erected by professional silos and much current entrenched closed-system project management thinking in MUTP developments - and how they represent effective barriers to the introduction of a more holistic view of SD in project planning, appraisal and delivery - has already been alluded to. There is no evidence to suggest that extensive lesson-learning and sharing systems and processes have been established in the UK to disseminate post-project institutional learning of the kind derived from the CTRL and other similar projects in any formal sense. That said, interviewees indicate that such learning is disseminated in an informal manner as personnel move from project to project.

Drawing from the above analyses and observations of CTRL developments a number of potential lessons can identified from the Test 3 exercise for future MUTPs. These are summarized below in Table 2.4.

**Table 2.4: Test 3 Lessons**

| |
|---|
| **Lesson #1:** It is problematic to undertake financial demand modeling and project appraisal with closed system frameworks void of robust scenario considerations as part of building the business case. These exercises need to view the project under review as part of an open system in order to capture some of the possible dynamics from the outset of the planning exercise. |
| **Lesson #2**: The lengthy planning and implementation periods of many/most MUTPs present a major source of risk and uncertainty – potentially having particularly serious knock-on effects for private sector investors. |
| **Lesson #3:** Identifying the nature and scale of potential MUTP 'impacts' is *extremely* problematical, especially in the early days of a project's development. |
| **Lesson #4**: There is a critical need for MUTP managers and decision-makers who are able to see such projects in their entirety (i.e., holistically) over the whole lifecycle, especially in terms of the RUCs they pose. |
| **Lesson #5:** Despite the acknowledged evolutionary ('open system') nature of most if not all MUTPs little has been suggested in relation to retrofitting strategies for such projects that have now been built for several decades and pre-date the adoption of sustainable development principles/visions. |
| **Lesson #6:** The introduction of legislation such as the UK Hybrid Bill process for the CTRL is seen to considerably reduce the risk of project delays (in that it was associated with the adoption of rigorous and fast legal procedures and involving no local inquiry on account that that objections were handled by a select committee). |
| **Lesson #7:** The UK planning system is perceived to pose considerable risks and uncertainties, especially for MUTP private sector investors, particularly with regard to the extraction of benefits from the planning system. From the public sector perspective, the most critical factor is the bargaining skills of public sector representatives in their negotiations with key stakeholders, especially the private sector. |
| **Lesson #8:** It is critical during the MUTP planning and delivery stages that there is a clearly identified public sector body/agency clearly tasked with taking a multi-disciplinary/multi-function view of the roles, functions and implementation needs associated with MUTP developments to overcome traditional governmental professional silos which can otherwise often only be ultimately overcome through the involvement of a powerful political champion as in the case of the CTRL. |
| **Lesson #9:** National planning frameworks (NPFs) potentially represent a positive background against which MUTPs can and should be planned and delivered - especially in terms of establishing relative priorities for MUTP delivery and obtaining political and financial commitments. |
| **Lesson #10**: While political influence/agendas clearly have a significant on-going impact on the planning and delivery of MUTPs (as in the case of the CTRL), there is in the UK typically no formal monitoring mechanisms in place to assess the risks, uncertainties and complexities stemming from circumstances where there is insufficient political will, inappropriate governance and regulation etc. |
| **Lesson #11**: It is deemed preferable that MUTP plans/programmes convey a high degree of 'certainty', are deemed 'realistic' and enable the 'proper' integration of actions and activities by all concerned parties in project development. |

| |
|---|
| **Lesson #12**: 'Certainty' in MUTP developments is highly prized. It is seen as particularly critical in terms of commitments to the delivery of key decisions, approvals and infrastructure components on which parallel investment and funding decisions are to be based. |
| **Lesson #13**: The availability of high quality MUTP information potentially assists in the ability to identify/anticipate moments in time in project planning and implementation when circumstances are ripe for key decisions to be made. Such opportunities are not always easy to perceive and require constant scanning of existing and emergent contextual elements. |
| **Lesson #14**: Poor cross-functional sharing of appropriate MUTP information/data and ideas both within and between MUTP stakeholder organisations and networks is the source of much silo barrier building. Lesson #15: The collection and analysis of excessive amounts of data concerning forecasts of MUTP project performance can often obscure rather than enlighten. Such data is seen as no substitute for experience and expertise, especially in terms of risk mitigation and tactical awareness in regard to the handling of political influence (which is all pervasive in MUTP planning and delivery). |
| **Lesson #16**: Successful MUTPs are likely to be characterised by parties employing planning and delivery agents that possess an acute awareness of the importance of context *throughout* the project lifecycle and its impacts on risk, uncertainty and complexity developments. |
| **Lesson #17**: Regular and sustained monitoring of contextual matters that are likely to influence project planning and delivery is critical o the development of 'successful' MUTPs. This requires extensive oversight of all inter-related and inter-disciplinary matters associated with contextual influences and project impacts. Project planners and delivery agents need to be aware that informal monitoring of contextual matters (notably politics) is often a key activity that takes place through well established formal as well as informal relationships and networks as part of consensus building. |

### 2.4.4 Test 4: Synthesis of tests 1-3

#### 2.4.4.1 Chief context-specific influences on project achievements

Based on the outcome of Tests 1-3 conducted above, these are seen to be the following for the CTRL project:

- **London Olympics** - which effectively served to precipitate the implementation of high speed domestic services on CTRL.
- **Government policy agenda** - CTRL was seen as a means to (variously): support London's financial position; plug the UK economy more firmly into the EU; fulfil an important role relative to the restructuring and regeneration of Thames Gateway/East London.
- **Lobbying** - for example, the lobbying for stations at Stratford, Ebbsfleet and Ashford as a means to foster regeneration and growth (and, in the case of Stratford and Ebbsfleet) to enhance the viability of real estate development.
- **Politics and political champions** - the arrival and influence of (especially) key political champions who both moulded and made use of prevailing contexts to further particular agendas (e.g. Heseltine 'vision' for Thames Gateway/East London, Prescott determination to rescue CTRL from financial difficulty in 1997/98). Interviewee comments suggest overwhelming support for the view that CTRL in particular, and major projects in general, require(d) political backing at the highest level throughout the planning process. More detailed comments indicate that such backing:

- was given as a means to support key visions (a dedicated high-speed line, Thames Gateway concept, regeneration at Stratford etc.)
- overrode techno-rational arguments in favour of (for example) different route/station location options
- had to take due account of stakeholder agendas as expressed through local authorities and the Hybrid Bill process (the Hybrid Bill process was seen by multiple interviewees as beneficial to the planning and delivery process for CTRL in that it represented a rigorous process for addressing different stakeholder concerns),
- has to be based on both political self-confidence and consensus building in the political arena

### 2.4.4.2 Chief generic influences on project achievements

Based on the outcome of Tests 1-3, these are seen to be the following for the CTRL project:

- **Context awareness** - is critical to *all* aspects of project planning and delivery and that there is a need to take account of the likelihood that many/most contextual elements are likely to change/evolve over the course of the (usually lengthy) project lifecycle.
- **Project 'success'** - can only be judged in light of sound knowledge of the context that prevailed at the time the project was conceived, planned, appraised and implemented.
- **Changing contextual elements** - result in the evolving nature of projects such that the planning and delivery process responds to the moulding influence of changing contextual elements over time.
- **Successful projects** - are likely to be characterised by planning and delivery agents that possess acute awareness of the importance of context *throughout* the project lifecycle.
- **Political influence/support** - is *the* critical contextual factor in all aspects of MUTP planning and delivery and a clear pre-requisite to the successful launch of a project.
- **Tendency towards 'short-termism'** - on the part of politicians and civil servants suggests both an inability and lack of desire to effectively scan existing and future context – rather, the focus is on defining what is practical and achievable in the short run.
- **Monitoring contextual forces** - there is little evidence to suggest that there were *explicit* formal mechanisms and procedures in place for identifying and monitoring contextual forces, except in terms of stakeholder forums/community consultation processes and formal 'planning' procedures that primarily dealt with detailed and day-to-day issues (such as mitigation measures). **Consensus building** - many references to relationship and consensus building on the part of key decision-makers suggests a considerable degree of 'informal' context awareness and scanning - politicians are seen to be especially sensitive to (changing) context.
- **Changing stakeholder perspectives/motives/agendas** - these continuously evolved over the duration of the project and impacted projects in a manner that demanded of project stakeholders proactive measures, adaptive courses of action and changed resource allocations.
- **Changing political contexts** - these were both all pervasive and frequently subject to changes in priorities in light of short-term political cycles.
- **Changing economic and financial context**s - national and international economic booms and downturns set different scenes throughout the course of the project's planning and implementation that introduced particular financial arrangements and changes in response to the project's external financial environment.

### 2.4.4.3 Principal stakeholder 'winners and losers'

Based primarily on interviewee perceptions, the **principal project 'winners'** were seen to be:

- Members of the CTRL consortium;

- Real estate developers at King's Cross, Stratford and Ebbsfleet;
- Consulting and contractor firms who benefitted from work on the project;
- High and middle-income rail commuters – through introduction of the domestic high speed services in particular;
- The economy of London and the South East which is seen as being strategically supported by the advent of CTRL, the developments it has spawned and the opportunities it provides in relation to the restructuring and renewal of the Thames Gateway.

Based primarily on interviewee perceptions, the **principal project 'losers'** were seen to be:

- The taxpayer – in light of the opportunity costs associated with CTRL and the continuing public sector risk exposure posed by the project;
- Intra London commuters (mainly as a result of resources being diverted away from public transport systems in London) and would be rail users of lower income categories;
- Selected local community groups/areas adversely disrupted by the project such as those /displaced local community and businesses at King's Cross.

### 2.4.5 Responses to CTRL overall research questions and hypotheses: Lessons of a context-specific nature

The following tables 2.5 to 2.9 summarise what are considered the context-specific lessons derived from the CTRL interviewee responses to each of the overall research questions and hypotheses.

**Table 2.5: CTRL ORQ #1 context specific responses**

| **ORQ #1 - What constitutes a 'successful mega urban transport project (MUTP) in the 21st Century?** |
|---|
| *In the UK context,* MUTPs such as CTRL appear to have wider objectives than transportation aims which suggest they are more an infrastructure investment that services strategic change rather than merely offering transportation services at a cost determined by the market. They thus need to be debated and scrutinised at the highest political level - this should be taken into account in setting (particularly) programme objectives. |
| *For public-private sector partnership projects*, there is a need to ensure that an adequate audit trail is established which is capable of tracking transactions that might otherwise become opaque as a result of so-called 'commercial sensitivities'. |
| *In the UK context,* successful MUTPs often require high levels of faith, belief, commitment, trust and political intervention on behalf of project promoters. This needs to be sustained throughout the planning and appraisal period, not least because such projects often cannot be justified on the basis of economic benefits alone. In parallel, there is a need to build up trust and confidence between the MUTP promoters, public bodies and the public at large through demonstrated honesty and transparency in decision-making. |
| *The value of MUTP stakeholders 'working together'* and the close relationship with networking and trust established among themselves is seen as significant by most stakeholders, particularly in regard to overcoming 'silo thinking'. |

**Table 2.6: CTRL ORQ#2 & ORH#3 context specific responses**

| **ORQ #2 - How well has risk, uncertainty and complexity been treated in the planning, appraisal and evaluation of such projects? AND**<br><br>**ORH #3 - The level of competence in decision-making and planning in today's fast-changing world is best assessed by the adequacy of the treatment of risk, uncertainty and complexity and sensitivity to context – all of which are important demands on Strategic Planning.** |
|---|
| *Impact of visions/objectives on risk*: In the context of CTRL, the availability of clear visions at the commencement of project planning and delivery was *not* perceived as being a means to mitigate risk. Changing contexts resulting from new stakeholder agendas meant that (for the political champions) having publically stated firmly fixed project visions/objectives may well increase risk by attracting the attention of the adversaries to them and reducing project decision-makers' ability to respond to these fluid agendas. |
| *Factors that affected balance between vision and practicality*: The evolutionary nature of the MUTP planning process can see the balance tip in favour of a more vision-led approach from a more pragmatic approach (e.g. early work on the identification of a least cost CTRL route was supplanted by emergent urban agglomeration imperatives and concerns associated. The planning and appraisal period for MUTPs like CTRL is furthermore often highly politicised with a number of key project elements (e.g. redevelopment initiatives) 'bolted-on' over time in response to highly effective political lobbying. |
| *Critical elements of RUC*: Two distinct periods of MUTP development pose RUC concerns: The first is the lengthy planning period, the second is the lengthy implementation period. Both are seen particularly to pose serious knock-on effects for private sector investors. |
| *Identifying the nature and scale of potential 'impacts'*: This is extremely problematical for MUTPs in the UK context - for CTRL, many stakeholders consider that it is still 'early days' in this respect. |
| *Statutory processes*: Statutory processes *can* be a means to mitigate risk in the UK context (for CTRL, for example, the Hybrid Bill process was seen to reduce the risk of delays). |
| *Extracting benefits from MUTPs*: In the UK context there is considerable risk and uncertainty surrounding the extraction of benefits through the planning system as a result of the:<br>• uneasy bargaining atmosphere caused by uncertainties at the start of any mega project;<br>• perceived lack of flexibility on the part of the public sector and/or a lack of consistency in the application of rules and regulations (as perceived by the private sector); and<br>• the need for better understanding of each parties' constraints and opportunities. |
| *Best practice v institutional learning*: While reliance on 'best practice' was not perceived to be a significant feature of the CTRL *planning* process, drawing on experience from other projects was seen as a key means to mitigate risk (e.g. high speed rail in France), provided this is applied in a context sensitive manner.<br><br>'Best practice' principles and practices are frequently seen to be contextually insensitive and consequently needs to be applied with great care but can be applied with greater 'safety' once projects have been 'frozen' (locked in) for implementation – suggesting that this later stage is less subject to changing contextual influences and associated risks and uncertainties. |
| *Risk management & project funding*: Reliance on the private sector alone to mitigate risk is |

unrealistic in today's economic and political climates for most MUTPs. This is so since such projects are often vulnerable to short-term knocks in confidence of (for example) passenger patronage trends requiring the capabilities of the public sector to take on a longer term view and to not be too discouraged by short term outcomes. create

*Treatment of real estate:* The CTRL's Financial Structure increased exposure to environmental and social compromises - using real estate to fund infrastructure was seen by some as encouraging the extraction of maximum profit from the railway lands and creating a scheme which will not meet environmental and local social objectives.

Real estate associated with MUTPs is broadly seen as a suitable means of funding in the UK context – i.e. a potential element in project 'success' – in that the line haul and hubs are mutually sustaining. Despite this, interviewees suggest a generally ambivalent view of the importance of frequent, high quality train services to the associated hub developments. However, concern was expressed at the potential risk levels involved in using real estate (exposure to market fluctuations and heavy up-front expenditure coupled with lengthy carrying periods before revenues are forthcoming) and, in consequence some interviewees suggest that the public sector is better able to carry project funding risk, including real estate-related risk.

*Risk sharing*: For PFI/PPP projects, determining an appropriate degree of risk-sharing between the public and private sector is problematical and is seen as an art rather than a science requiring considerable skill and experience. In particular:

- transferring risk to the private sector carries with it the risk that the project scope/nature may change from that originally conceived – as a result of the private sector delivering the project it can best 'afford'.
- risk management requires the type of expertise that is not presently strong in the public sector.
- balancing risk management between the public and private sectors interests is difficult when gains may only be realised in the long-term, and while political horizons are typically short-term.
- it is only in the long-term and/or when problems arise that clarity over appropriate risk share is typically obtained.

PPP/PFI arrangements pose a level of private sector risk exposure that is under-appreciated by the public sector - e.g. where projects require heavy up-front expenditure in return for proceeds that may not be fully realised for a considerable period of time.

Political risk is a key factor for UK MUTPs. In 1997/98 the government had little option but to transfer much of the financial risk associated with CTRL back to the public sector so as to ensure that the project would not 'fail' or stall. This action was based upon political risk considerations rather than financial risk concerns - there was sufficient political consensus to enable the government to take this action based on the fear of loss of prestige (political and national prestige) in not completing the project.

*Time to breathe'*: In the context of CTRL, giving an MUTP 'time to breathe' is seen as a positive and wise decision in project planning and delivery (and means to mitigate risk); here, 'time to breathe' is seen as the process by which the project is allowed to evolve and adapt over time in response to important changing contexts that impinge on outcomes. Measured judgements of this kind contrast with the view shared by some who view any delay as problematical by virtue of prolonging the project's planning, delivery and uncertainty.

*'Control' of planning and delivery process*: It is unrealistic to expect to be able to control all

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| aspects of MUTP planning and delivery – despite undertakings given to politicians and the public to the contrary and the expectations of many project managers. Only during the later project lifecycle stages (i.e., construction and operations) are seen as stages that are capable of more effective control (see below). |
| *Negotiation processes/skills/relationships* Levels of RUC may be increased (in the UK context) by the following contextual influences:<br>• an uneasy bargaining atmosphere which is common at the commencement of stage of an MUTP when perceived uncertainties are frequently at their greatest;<br>• the public sector is often seen as inflexible (especially in relation to planning policy and guidelines) and inconsistent by its private sector counterparts;<br>• there is a clear need for mutual appreciation and understanding of each parties' position – thus, collaboration rather than confrontation is seen as important in moving forward decision-making. it is helpful to maintain consistency in the staffing of negotiating teams;<br>• it is essential to build trust and confidence between MUTP promoters, public bodies and community groups through honesty and transparency |
| *Consensus building and champions*: In the UK context, consensus building is seen as critically important at the planning stage of MUTPs. This is particularly significant at the highest political levels given the size/cost/potential impacts of such projects. Projects such as CTRL make it imperative that key formative decisions are taken at the heart of government. |

**Table 2.7: CTRL ORQ#3 context specific responses**

| ***ORQ#3 - How important is context in making judgments regarding Overall Research Questions 1 and 2?*** |
|---|
| *Context and the project lifecycle*: In the UK, MUTP planning and delivery is especially vulnerable to RUC because of the lengthy processing and appraisal periods, that are also overly complex. |
| *Contextual forces influence pivotal decisions*: CTRL responded to changing contextual influences in terms of:<br>• the decision to pursue the project through private financing – initiated by the Thatcher Govt but sustained by subsequent governments;<br>• decision to pursue dedicated high speed line – due to lack of capacity on existing lines but also a response to issues of national prestige and the notion that CTRL could be used to promote regeneration and growth;<br>• arrival of new political champion (Heseltine) and associated Thames Gateway vision |
| *The need for context scanning:* While for CTRL there is little evidence to suggest that there were *explicit* mechanisms and procedures for identifying and monitoring contextual forces, the many references to relationship and consensus building on the part of key decision-makers suggests a considerable degree of 'informal' context awareness and scanning - politicians are seen to be especially sensitive to (changing) context. Moreover, since CTRL clearly responded to manifold contextual changes as it evolved over time, context awareness and resultant action occurred in a somewhat ad hoc manner. |
| *MUTPs as 'agents of change':* In the UK the relationship between MUTPs and wider spatial/sectoral initiatives has not been fully exploited in terms of coherent land use-transport strategies (and retrofitting) – e.g. whilst CTRL was a key element in the policy decision in favour of regeneration, growth and restructuring initiatives associated with the Thames Gateway, this has not been accompanied by dedicated and meaningful resource allocation plans, programmes and institutional arrangements. Thus, for MUTPs to function fully as |

'agents of change', careful thought needs to be given to the *institutional context* into which they are placed. Moreover, it has to be acknowledged that the full benefits of agent of change MUTPs may well only materialise in the longer term.

MUTP planning and delivery agents such as those involved in CTRL often do not demonstrate clarity of thinking about the nature and impact of forces of change – i.e. merely a 'belief' or vision (or hope?) that the project could have a beneficial regeneration and restructuring impact on East London/Thames Gateway in some way and that the private sector was capable of committing sufficient resources to implement both CTRL and its attendant developments.

*Mega events as contextual items:* Mega events may have both a positive and negative impact on MUTP planning and delivery. For example, the London Olympics is seen as an important contextual influence on CTRL but is considered to be both beneficial and problematic in terms of RUC:

- fixed deadlines associated with MEs 'focus the mind' and help reduce risk by facilitating broad consensus on the need for/commitment to action to be reached quickly in light of national/political prestige;
- the downside of MEs is seen in terms of the diversion of attention/oversight and resources away from other important projects, thus increasing risk.

*Clarity of goals/visions and objectives:* There appears to have been no clearly thought out, all-embracing 'strategy' for CTRL – it was more usually characterized by ad hoc decision-making in response to new and changing contextual elements. This may have resulted from the fact that no single organisation/body was able to adequately control all factors relevant to project planning and delivery.

However, interviewees suggest that clearer project visions/objectives would have had minimum impact on CTRL which 'needed' to experience the normal organic evolution of a large MUTP in the UK. Indeed, it is suggested that complex projects such as MUTPs *inevitably* have to evolve organically in view of the large number of interests involved, the wide range and scale of potential impacts, the high cost and controversy associated with the project and other contextual changes that occur over the normally lengthy planning and delivery period.

Some interviewees suggest there *were* clear project visions/objectives for CTRL but these were inconsistent between organizations, poorly disseminated and changed significantly over the life of the project. Interestingly it was also suggested that clearer visions/objectives would have actually been *unhelpful* in not allowing the CTRL to evolve over time in response to changing stakeholder agendas and other contextual influences. It was also suggested that it is impossible to identify every facet of the project that needs to be reflected in overarching vision and strategy at the outset.

Having a shared vision about project objectives and deliverables *can* become a unifying element within and between actors that helps to address issues of uncertainty - inasmuch as this can become the basis for commitments by parties responsible for delivering key parts of the project/programme.

**Table 2.8 : CTRL ORH#1 context specific responses**

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| ***ORH#1 - Traditional criteria relating to cost overruns, completion dates, generation of travel time savings for users and rates of returns to investors are inadequate measures of success in the 21st Century as sustainable development concerns become increasingly critical both globally and locally.*** |
| *Closed v open system approach:* Project planners in the UK need to be aware that MUTPs may be treated as both 'open' and 'closed' at different stages, and for different reasons (CTRL was *initially* treated as a closed ('frozen') system in terms of financial (demand) modelling and appraisal but was *subsequently* treated as an open system in terms of accommodating agglomeration objectives that were ultimately a major part of project justification. |
| *Models and analytical tool:* Current UK project appraisal and evaluation tools, methods and processes (especially the manner in which they are utilised), are perceived to be *fundamentally flawed*. Therefore, dependence upon these tools, methods and processes alone is unlikely to deliver a successful MUTP.<br><br>Key issues/problems associated with the current appraisal and evaluation 'toolbox' are:<br>• the inability to identify, quantify and 'weight' all relevant factors that determine/influence project outcomes with any real degree of precision;<br>• the lack of attention to future contextual elements/conditions that are likely to impact on project outcomes;<br>• the need to understand that (particularly) political influence is likely to override the outputs from the use of traditional tools, methods and processes and that 'gut feeling' and the application of experience are perceived to be more important;<br>• the perception that decision-makers are often told 'what they want to hear' in terms of model outputs that purport to represent project achievements;<br>• shortcomings of current appraisal methods and tools are not adequately explained to decision-makers;<br>• the inconsistent treatment, mainly by sponsors/proponents of MUTPs (such as CTRL), as projects that are both 'open and closed systems' and as both 'commodities and services' at different stages in their lifecycle.<br><br>There is a need to *enhance* current tools, techniques and processes by, for example, making use of a wider multi criteria approach that takes full account of future contextual conditions.<br><br>SDVs are not presently seen as a suitable framework for judging the success or otherwise of MUTPs due to perceived difficulties in defining 'sustainability' in an operationally assessable manner.<br><br>The UK is seen as having immature methodologies for valuing externalities associated with major infrastructure projects - including factors such as regeneration, innovation, enhancing skills/knowledge etc. |
| *Political will/ influence:* In the UK, political will/imperative/pragmatism frequently overrides outputs from appraisal methodologies that apply 'traditional' tools/methods and criteria (as noted above). Accordingly, key decision-makers frequently do not rely on modelling exercises. In particular, (financial) model outputs are often seen as a means to post-rationalise decisions and/or legitimise previously held positions.<br><br>The Management of political risk is important to private sector success (the private sector sought to minimize risk during preparation of the CTRL bid through both the realistic |

recognition of skills gaps within the team, and a political motivation analysis of key players within the Cabinet.

For UK MUTPS, most key decisions that shape projects are taken at the highest political level. As noted above, this may be somewhat inevitable. Indeed, key decisions are taken after only after substantial political manoeuvring and consensus building to ensure that projects achieve sufficient momentum. Powerful political champions represent a means to reduce risk through increased certainty that the project is likely to proceed in a prescribed form.

**Table 2.9: CTRL ORH#2 context specific responses**

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| ***ORH#2 - The new emerging international and local agenda related to vision(s) of sustainable development is multi-dimensional and goes beyond notions of environmental sustainability, as critical as this may be, in that it also concerns inter-related concepts of economic sustainability, social sustainability and institutional sustainability.*** |
| *SDVs and MUTP planning, appraisal and delivery*: Professional silos and currently entrenched project management thinking often represent effective barriers to the introduction of a more holistic view of SDVs as a framework for project planning, appraisal and delivery.<br><br>The multi-dimensional nature of 'sustainability' demands an holistic view of the complexities associated with MUTPs and the developments/initiatives with which they are associated. However, the relationship between CTRL and 'sustainability' is seen more in terms of the delivery of regeneration benefits at development hubs than in relation to the rail services themselves. |
| *MUTPs and sustainability:* Unless carefully planned as a part of an overall framework, in which SDVs are the central focus, MUTPs may simply facilitate ever more travel, both long distance and commuting which is in itself unsustainable - the essentially low density nature of development at Ebbsfleet creates doubt about the sustainability credentials of CTRL. |
| *MUTPs, regeneration and SDVs:* The ability of MUTPs alone (especially rail projects) to catalyse regeneration appears unproven and will normally require parallel public sector investment in order to achieve the full suite of potential sustainability benefits. Some consider that CTRL effectively blighted the King's Cross area as a result of the lengthy planning period for the project. That said, it is hard to argue that CTRL has not led to the advent of major private sector investment in regeneration at King's Cross, Stratford and Ebbsfleet. Perhaps the most significant point here is that tying the provision of the infrastructure (CTRL) to the regeneration of former Railway Lands (at King's Cross and Stratford) was a sensible approach whereby mutually beneficial objectives were achieved. However, it is also clear that lack of parallel public sector investment in areas such as the Thames Gateway has meant that the full regeneration benefits of CTRL have yet to be achieved.<br><br>There appears to be a distinct lack of clarity on the part of stakeholders as to how MUTPs and the development/regeneration projects they spawn might be planned and/or retrofitted so as to achieve key sustainability objectives.<br><br>Sustainability appraisals for MUTPs should, by virtue of their size, cost and potential impact, be the subject of scrutiny by parliament.<br><br>MUTPs that spawn significant new suburban development may not be a positive influence on social cohesion - though community building could never be justifiably a realistic objective for MUTPs. |
| *National policy framework and SDVs:* During CTRL planning and delivery stages there was |

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| no clearly identified body/agency clearly tasked with taking a multi-disciplinary/multi-function view of the roles, functions and implementation needs associated with the project. Government policy reflected professional silos and ultimately it needed a powerful political champion to overcome (or bypass?) these silos.<br><br>In the UK, national planning frameworks (NPFs) potentially represent a positive background against which MUTPs can and should be planned and delivered - especially in terms of establishing relative priorities for MUTP delivery and obtaining political and financial commitments. However, contextual problems are seen to include: NPFs becoming a hostage to political expediency; the need to acknowledge that NPFs should represent a framework rather than a rigid, inflexible plan and will need constant monitoring and updating; NPFs would need to be all-embracing in regard to the prioritisation of manifold stakeholder agendas and sectoral issues and also balance national needs with regional/local concerns, and; UK (including the civil service) has no track record in the sort of strategic thinking that should accompany the establishment of NPFs. |
| *Institutional learning:* Professional silos and current entrenched project management thinking represent effective barriers to the introduction of a more holistic view of SD in project planning and delivery. |

### 2.4.6 Responses to CTRL overall research questions and hypotheses: Lessons of a potentially generic nature

The following tables 2.10 to 2.14 summarise what are considered the generic lessons derived from the CTRL interviewee responses to each of the overall research questions and hypotheses.

**Table 2.10: CTRL ORQ#1 responses**

| ***ORQ#1 - What constitutes a 'successful' mega urban transport project (MUTP) in the 21st Century?*** |
|---|
| *'Success' and project objectives:* Project planners and delivery agents need to take account of the likelihood that new objectives will emerge over the course of the project planning and appraisal period as a result of changing contextual influences.<br><br>To an extent, this contradicts the view that project objectives (including those associated with project and agency roles/functions and performance indicators) should be clearly set at the outset and fully disseminated to all stakeholders. Indeed, having clear and consistent objectives at the outset may be positively harmful to a project in not allowing it to respond to changing stakeholder agendas and other contextual influences. In light of this, it is clear that all key stakeholders should be involved in setting project objectives - not merely consulted 'after the event'<br><br>As noted below, judgements concerning 'success/failure' must take into account the objectives that were originally set for a MUTP - in parallel with the evaluation of outcomes that are undertaken with a view to retrofitting.<br><br>MUTP objectives should reflect the degree of interaction they are anticipated/expected to have with the areas they traverse and impact upon - such objectives should be accompanied by clear policy statements indicating the scope and nature of such impacts, using MUTPs as important agents of change.<br><br>Wherever possible, MUTP objectives should differentiate between those objectives that are: core/essential, and represent the fundamental reason why the project is being implemented, and; those that represent perhaps less certain but nevertheless desirable project outcomes. |

Having such a categorisation will enable a fairer and more consistent approach to be adopted to project appraisal and evaluation.

Project objectives should be capable of being operationalised in such a way as to be meaningful to all stakeholders. In this context it is noted that objectives associated with both 'regeneration' and 'sustainability' are particularly difficult to operationalize in a direct and meaningful way.

Early cost, programme and quality data must be treated with caution - as should predictions about the beneficial nature of project impacts. In order to avoid not overly raising expectations of MUTP outcomes, project data should be released only when key route and other specification details have been effectively 'frozen' and are thus reasonably 'certain' and only when accompanied by a suitable cautionary note regarding its (in)accuracy.

Project objectives should acknowledge that the benefits/costs and impacts associated with MUTPs are:

- often very difficult to discern at the outset
- often only realised in the long-term
- often unexpected

Objectives for MUTPs should provide for the establishment of measurements and systems/processes that enable clear and transparent appraisal and post-project evaluation of performance on a consistent and accurate basis.

**Table 2.11: CTRL ORQ#2 & ORH#3 responses**

| ***ORQ#2 - How well has risk, uncertainty and complexity been treated in the planning, appraisal and evaluation of such projects?* ….and….**<br><br>***ORH#3 - The level of competence in decision-making and planning in today's fast-changing world is best assessed by the adequacy of the treatment of risk, uncertainty and complexity and sensitivity to context – all of which are important demands on Strategic Planning.*** |
|---|
| *Community engagement as a means to mitigate RUC:* Full community engagement from the outset is seen as a means to mitigate downstream risk, uncertainty and complexity associated with stakeholder relations. Trust and consensus-building is key in this respect.<br><br>Stakeholder engagement presents opportunities to: identify those potential objections that can actually lead to improvements in project concept and design, and producing decisions that are ".....fast, transparent, inclusive, robust and defensible and of a high quality."<br><br>Negative impacts of stakeholder engagement are perceived as delays in project planning and delivery and over-emphasis on small-scale/local Nimby issues.<br><br>There is a need to work closely/build trust with stakeholders to keep them fully informed throughout the project - so as to anticipate potential issues going forward that could otherwise jeopardize the planning and delivery process.<br><br>Lobbying should be acknowledged as potentially playing a key role in shaping MUTPs. |
| *Robustness and adaptability:* MUTPs often need to be delivered through a flexible, evolving and responsive approach which is able to address/accommodate the complexity of the project and its ever-changing context as well as the complexity associated with its fundamental design. |

*RUC and the pace of change in the 21st Century as context for MUTP planning and delivery:* The 21st Century is seen as being characterised by a faster pace of change, resulting in significantly greater RUC in the planning and delivery of MUTPs.

Key contextual forces/influences that are seen to lead to greater RUC in the 21st Century include:

- unstable economic circumstances;
- the use of new technology;
- climate change;
- energy concerns;
- the extended time required in completing MUTP planning and development processes.

This increased RUC in the 21st Century is seen to require the type of skills and competencies identified below.

*Skills and competencies*: There is a need for managers and decision-makers who are able to see projects in their entirety (holistically) over the whole lifecycle. Such managers and decision-makers need to:

- develop political/tactical awareness;
- understand better the contextual influences (existing and future) on MUTPs and the ways in which MUTPs themselves influence context;
- develop planning and implementation strategies and programmes that are robust and adaptable so as to accommodate changing needs/demands and contexts;
- make better use of stakeholder involvement in the planning and delivery process so as to understand emerging/changing stakeholder agendas.
- personal relationships are seen as vitally important at all levels, within and between organisations.
- strong leadership *can* reduce uncertainty - the private sector have a requirement for strong leadership and the certainty that accompanies this.
- in order to mitigate risk, both public and private sectors need to have full understanding, based on the proper availability of information, of each parties' constraints. Co-operation and relationship building is thus seen as more fruitful than an adversarial relationships.

*Need for 'certainty', accuracy and realism*: Project planning and implementation plans/programmes need to be 'certain', 'realistic' and enable the proper integration of actions and activities by all concerned parties. *Certainty* is seen as particularly critical in terms of commitments to the delivery of key decisions, approvals and infrastructure components (by a specified time) on which parallel investment and funding decisions are to be based.

The availability of high quality project information potentially assists in the ability to identify/anticipate moments in time in project planning and implementation when circumstances are ripe for key decisions to be made (often referred to as points in time when 'the planets are correctly aligned'). Such opportunities are not always easy to perceive and require constant scanning of existing and emergent contextual elements.

Poor cross-functional sharing of appropriate information/data and ideas (silos) is seen as increasing RUC.

The collection and analysis of excessive amounts of data concerning forecast project performance can often obscure rather than enlighten. Such appraisal data is seen as no substitute for experience and expertise, especially in terms of risk mitigation and tactical awareness in regard to the handling of political influence (which is all pervasive in MUTP planning and delivery).

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| *Context scanning:* Regular and sustained monitoring of contextual matters that are likely to influence project planning and delivery is critical if RUC is to be minimised. This requires extensive oversight of all inter-related and inter-disciplinary matters associated with contextual influences and project impacts.<br><br>Project planners and delivery agents need to be aware that informal monitoring of contextual matters (notably politics) is often a key activity that takes place through well established (informal) relationships and networks as part of consensus building. |

**Table 2.12: CTRL ORQ#3 responses**

| ***ORQ#3 - How important is context in making judgments regarding Overall Research Questions 1 and 2?*** |
|---|
| *Understanding context is critical:* Changing contextual elements often result in the evolving nature of MUTPs. Thus, context awareness on the part of MUTP planning and delivery bodies is especially significant if 'success' is to be achieved. Moreover:<br>• 'project success' can only realistically be judged in light of sound knowledge of the context that prevailed at the time the project was conceived, planned, appraised and implemented;<br>• successful projects are likely to be characterised by planning and delivery agents that possess acute awareness of the importance of context *throughout* the project lifecycle.<br><br>The most significant *generic* contextual elements for MUTPs (according to interviewees) are:<br>• stakeholder perspectives/motives/agendas<br>• political context<br>• financial context<br>• MUTPs as agents of significant contextual change |
| *Context and the project lifecycle*: The 'project delivery phase' is seen as less contextually sensitive than other phases because of the perception that the project is 'frozen'. |
| *Clarity of goals/visions and objectives:* There is evident tension between 'vision' and political practice/pragmatism - politicians are rather uncomfortable with overtly backing a 'vision' as this may backfire on them. Thus, political pragmatism is often seen as the enemy of strategic thinking and strategy formulation/implementation. |
| *Carpe Diem*: There are perceived to be moments in time in the project lifecycle that present ideal opportunities to take decisive action in pursuit of specific ideas, agendas and decisions. For CTRL such planetary alignment moments were largely framed by political events. |
| *When should projects be frozen?* Given that many/most MUTPs are necessarily 'evolutionary' in nature, it may be argued that such projects should *only* be frozen after all contextual eventualities have been taken into account - this may mean that matters such as cost and programme control remain problematical for a considerable period of time. What is also clear is that contextual influences *never* remain static. This suggests that experience and sound judgement based on extensive stakeholder consultation may be the only realistic means of determining when to freeze a project for the purposes of implementation. However, the prudent project planning and delivery agency will always ensure that project design/scope is capable of subsequent adjustment as far as possible - in terms of scalability, connectability and functionality.<br><br>Once projects have entered the implementation/construction stage they: often have to be modified to cope with unexpected conditions, and; are notoriously difficult (costly) to change |

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| in terms of their fundamental design specification - this has implications for decisions to use innovative technology. |

**Table 2.13: CTRL ORH#1 responses**

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| ***ORH#1 - Traditional criteria relating to cost overruns, completion dates, generation of travel time savings for users and rates of returns to investors are inadequate measures of success in the 21st Century as sustainable development concerns become increasingly critical both globally and locally.*** |
| Observations concerning this hypothesis are largely seen as context-specific rather than generic, as noted above. |

**Table 2.14: CTRL ORH#2 responses**

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|---|
| ***ORH#2 - The new emerging international and local agenda related to vision(s) of sustainable development is multi-dimensional and goes beyond notions of environmental sustainability, as critical as this may be, in that it also concerns inter-related concepts of economic sustainability, social sustainability and institutional sustainability.*** |
| It would seem that SDVs do not presently offer a better framework for judging the success of MUTPs - due to the lack of operationalised definitions of the various dimensions of sustainability and the consequent unavailability of associated evaluative criteria.<br><br>However, interviewees concede the need for a broader range of criteria that emphasise 'sustainability'. With this in mind, it is it is suggested that SDV frameworks for MUTPs need to be: clear, consistent and applicable to all parties in MUTP planning and delivery (making clear all respective roles and responsibilities), and; capable of being operationalised by MUTP planning and delivery agents so as to influence decision-making more directly.<br>.<br>Sustainability appraisals should a key part of the initial project conception, planning and appraisal process - i.e.: to determine the need and justification for the project, and; to determine alignments, associated developments and technical specifications etc. that will enhance the sustainability profile of the project and the areas on which it impacts. Most importantly, unlike CTRL, such appraisals should not simply be used as a means to appraise the performance of different pre-determined options. |
| *Strategic components (and impacts) are difficult to identify and quantify:* The changing circumstances (contexts) that surround the MUTP planning and delivery process and the impacts this can have on moulding project approach/content is difficult to identify (much less quantify). This mitigates against having very clear and well established objectives at the outset if systems/processes do not allow such objectives to be modified in response to changing contextual elements and emerging agendas such as those associated with SDVs. |

### 2.4.7 CTRL opportunities and threats associated with *external* factors to the Project, such as blocking and inducement mechanisms

**Table 2.15: CTRL opportunities and threats associated with external factors to the project, such as blocking and inducement mechanisms**

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| **Opportunities:** | • Climate change concerns may encourage increasing use of HST services rather than low-cost airlines;<br>• continued growth of HST network in EU and UK, of which CTRL would be a key component;<br>• Thames Gateway remains only partially developed and there remains the potential to enhance its symbiotic relationship with CTRL in terms of both domestic and international services. |
| **Threats:** | • climate change - especially flood risk in the Thames Gateway which could impact on both the CTRL itself and the development/regeneration areas with which it is associated;<br>• continued economic downturn - potentially serious impact on the continued development of key hub sites in London and the Thames Gateway;<br>• continued ascendancy of low cost airlines coupled with a tight financial climate may mean that passenger numbers do not rise sufficiently to achieve desired income levels;<br>• government policy agenda may turn away from the development of HST if this is seen as unpopular or too expensive;<br>• vulnerability of key hub areas due to ability of operator to change service patterns - as has happened at Ashford;<br>• the apparent lack of debate or understanding regarding the ways and means of introducing retrofitting strategies which may enable MUTPs to better address 21stC needs, especially those associated with SDVs. This problem is compounded by the current lack of any sustained attempt at monitoring MUTP project outcomes (such as CTRL) so as to build up a suitable information base on which such retrofit strategies might be based;<br>• lack of a comprehensive institutional framework capable of exploiting the 'agent of change' function of CTRL in terms of its relationship with territorial restructuring and regeneration initiatives (especially those relating to the Thames Gateway). |

# 3. The Jubilee Line Extension (JLE)

*Canary Wharf and Millennium Dome (destinations on the JLE)* *Photo: Nick Dennison*

## 3.1 Project profile: JLE

For each case study (including both UK and international case studies) a Project Profile was prepared, giving details of the project's main features, characteristics and history.

The full JLE Project Profile can be downloaded here: http://www.omegacentre.bartlett.ucl.ac.uk/studies/by_place_2.php, and a summary version is presented in the following pages.

## JUBILEE LINE EXTENSION, LONDON, UK

### OVERVIEW

**LOCATION: LONDON, UK**
**SCOPE: INTRA-URBAN**
**TRANSPORT MODE: METRO**
**PRINCIPAL CONSTRUCTION: TUNNEL**
**NEW LINK: YES**

### PRINCIPAL OBJECTIVES

**LOCAL TRANSPORT LINK**
**REGENERATION**
**ACCESSIBILITY**
**CONGESTION RELIEF**
**TRAVEL TIME SAVINGS**

### PRINCIPAL STAKEHOLDERS

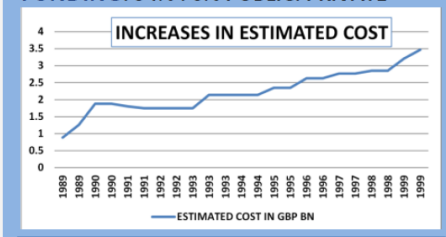
**CLIENT: LONDON UNDERGROUND LTD**
**CLIENT'S ADVISER:**
**ARUP PROJECT MANAGEMENT**
**PROJECT MANAGER (FROM 1998):**
**BECHTEL CORPORATION**
**MAIN FUNDER: NATIONAL GOVERNMENT**

### PLANNING AND IMPLEMENTATION

**PLANNING START DATE: 01/1988**
**CONSTRUCTION START DATE: 10/1993**
**OPERATION START DATE: 12/1999**
**MONTHS IN PLANNING: 69**
**MONTHS IN CONSTRUCTION: 74**
**PROJECT COMPLETED:**
**21 MONTHS BEHIND SCHEDULE**

### COSTS (IN 2010 USD)

**PREDICTED COST: 4.82BN**
**ACTUAL COST: 6.83BN**
**PROJECT COMPLETED:**
**42% OVER BUDGET**
**FUNDING: 94% : 6% PUBLIC: PRIVATE**




### INFRASTRUCTURE QUANTITIES:

**LENGTH: 16KM**
**NUMBER OF STATIONS: ELEVEN**
**COST PER KM (USD 2010): 0.43BN**

### PATRONAGE

**FORECAST TRAFFIC**
**127M PASSENGERS PER ANNUM**
**ACTUAL TRAFFIC**
**133M PASSENGERS PER ANNUM**


### INTRODUCTION

An extension to the existing London Underground (LU) Jubilee Line, from Westminster in central London to Stratford in East London, 16km in length.

The project includes six new stations, of which four provide interchanges with other LU lines, and enlarging five existing stations. It is also associated with development and regeneration initiatives at Westminster, Southwark, Canary Wharf, Stratford and North Greenwich.

### BACKGROUND

The main objectives of the project were to improve transport links to and from the Docklands (then emerging as a commercial office hub), Southeast and East London, to act as a catalyst for local area regeneration, to relieve congestion on river crossings and other rail lines. Similar schemes had been considered by LU since the late 1960s but were given added impetus by central government plans to regenerate the Docklands and North Greenwich.

The project's history is closely linked to that of the Canary Wharf office development in the Docklands, owned by Canadian developers Olympia & York (O&Y), who lobbied for substantially improved transport infrastructure to serve the building and promised to contribute to its funding. An earlier proposal by O&Y was rejected by London Transport in 1988.

Parliamentary Bills were deposited in 1989 and 1990 (public consultation and environmental impact assessment forming part of the procedure), and Royal Assent was given in 1992. However, O&Y went into administration shortly after and the project was put on hold until equivalent funding was guaranteed in 1993: a European Investment Bank loan covering the first instalment, followed by O&Y's resurrection with the support of a consortium of banks.

The cost-benefit ratio at this time was 0.95:1 (compared to 1.56:1 in 1989) and approval was granted on the assumption of unquantified regeneration benefits. In 2002, a post-project impact study suggested a real ratio of 1.75:1.

Associated developments include 20.5m square feet of commercial development and 16,500 homes. Up to 5,000 people were directly employed, with an estimated 150,000 jobs through associated developments and another 32,000 in the catchment area.

## TIMELINE

CONCEPTION: 1968: NEED FOR TRANSPORT LINK TO DOCKLANDS IDENTIFIED

CONCEPTION: 1974/76: NEW LINE PROPOSED AND ENDORSED IN STRATEGIC PLAN

DELAY: 1979: PROPOSED NEW LINE ABANDONED DUE TO COST CONSTRAINTS

CONTEXT: 1984: CONSTRUCTION OF DOCKLANDS LIGHT RAILWAY BEGINS

CONTEXT: 1985/86: CANARY WHARF GRANTED ENTERPRISE ZONE STATUS. 1M SQ FT OFFICE DEVELOPMENT PLANNED

DELAY: 1988: GOVERNMENT REJECTS O&Y PROPOSAL

CONCEPTION: 1988 (JAN): NEW PROPOSAL BY CENTRAL LONDON RAIL STUDY

INCEPTION: 1989: 1ST PARLIAMENTARY BILL. O&Y AGREE TO PROVIDE GBP 0.4BN FUNDING

INCEPTION: 1990: EAST LONDON RAIL STUDY CONFIRMS ROUTE. 2ND PARLIAMENTARY BILL

DELAY: 1991/92: SEARCH FOR PRIVATE FUNDING CAUSES 18 MONTH DELAY

INCEPTION: 1992: PARLIAMENTARY BILL RECEIVES ROYAL ASSENT

DELAY: 1992: O&Y IN ADMINISTRATION. PROJECT ON HOLD UNTIL OTHER PRIVATE FUNDING FOUND

INCEPTION: 1993: O&Y RECOVER, PRIVATE FUNDING SECURED, SECRETARY OF STATE GIVES GO-AHEAD

CONSTRUCTION: 1993: CONTRACTS AWARDED FOR GBP 1.2BN, CONSTRUCTION STARTS

DELAY: 1994: HEATHROW TUNNEL COLLAPSE CAUSES SIX MONTH DELAY

CONTEXT: 1996: NORTH GREENWICH CHOSEN AS SITE FOR MILLENNIUM CELEBRATIONS

CONSTRUCTION: 1996 (JAN): TUNNELLED RIVER CROSSINGS COMPLETE, (AUG): RUNNING TUNNELS COMPLETE

CONTROVERSY: 1997: MOVING BLOCK SIGNAL SYSTEM ABANDONED

CONTROVERSY: 1998: BECHTEL REVIEWS AND TAKES OVER PROJECT MANAGEMENT

DELAY: 1999: ELECTRICIANS' WILDCAT STRIKE

DELIVERY: 1999 (DEC): LINE OPENS

DELIVERY: 2002: IMPACT STUDY

## CHARACTERISTICS

The estimated project cost increased steadily from GBP 0.88bn in 1989 to GBP 2.14bn in 1992 (USD 4.82bn, 2010 prices[1]). The final cost was GBP 3.5bn (USD 6.83bn, 2010 prices): GBP 2.2bn ring-fenced central government funding and GBP 1.3bn from LU's core investment programme.

The New Austrian Tunnelling Method (NATM) and sliding platform edge doors were technological innovations used for the first time in London. However, the reputation of the former was tarnished after the collapse of a tunnel on the Heathrow Express link in 1994.

The client, London Underground Ltd (a subsidiary of London Regional Transport), let out the project in 31 separate contracts. Arup Project Management acted as an independent adviser to the government during construction. LUL's project manager was replaced by a team from Bechtel Corporation in September 1998, following Bechtel's critical review of the project management.

## TIMELINE ISSUES

Several factors contributed to delays, including the initial funding difficulties caused by the failure of O&Y. Construction conditions were complex, involving proximity to other lines and the Houses of Parliament. The innovative moving block signal system had to be abandoned due to technical problems. The Heathrow Tunnel collapse led to a six-month delay while the safety of the NATM method was reviewed. Labour costs increased as the economy came out of recession and the Millennium deadline approached.

Timeline issues were estimated to have contributed GBP 0.6bn to the cost overrun.

## FUNDING

The project was financed primarily by central government grant (GBP 2bn was ringfenced for the project in 1993) and LU's own funds. O&Y's promised contribution of GBP 0.4bn was to be paid in phases over 24 years. However, the initial payment was covered by a European Investment Bank loan. By 2000, O&Y had contributed GBP 0.15bn and had agreed a further, final, payment of GBP 0.05bn. In total, private sector contributions represented about 6% of the final cost.

[1] Costs have been converted to USD at 2010 prices, using historic inflation rates and current exchange rates, to allow comparison between projects.

## 3.2 The pre-hypothesis investigations: Jubilee Line Extension (JLE)

### 3.2.1 Introduction

The JLE Pre-hypothesis 'Sensemaking' Report seeks to highlight key patterns of knowledge drawn from the pre-hypothesis interviews in the form of anecdotes collected for the JLE Case Study. Pre-hypothesis interviews were conducted with 10 JLE project stakeholders between March 2009 and June 2009, together with a number of Sense-Making Items (SMIs) comprising magazine/newspaper articles, speeches etc. obtained over the same period.

This collected data was analysed mainly by means of a manual 'trawl' through all the narrative data supported by the use of NVIVO software in order to provide a means to identify important emergent or new themes/topics as well as correlations/relationships that need to be subsequently analysed using the software. NVIVO was used for the JLE pre-hypothesis data analysis as the Cognitive Edge software suite was being updated and hence not available for data input during this stage of the project.

A summary of the key findings of the combined sensemaking analysis of the JLE Case Study data are provided below in the following section, with a more detailed account provided in a separate report entitled "Jubilee Line Extension (JLE) Pre-Hypothesis Led Investigation Using the 'Manual Oversight' Method (CD ROM: OMEGA Prehypothesis and Hypothesis Led Reports\OMEGA CENTRE - JLE PHR Report - Final.doc" As a lead-in to the following summary discussion, Table 3.2, Appendix 26 provides a useful insight into the key themes that arose from the sensemaking analysis.

### 3.2.2 Summary of findings

**Project concepts and objectives**

A principal aim of the JLE was that it should contribute to the 'sustainability' of the London Docklands area, though it was envisaged that this would to take place through private sector investments facilitated by the project. The early JLE project was premised on a Canary Wharf development led entirely by the private sector, with London's financial centre expanding into the Docklands area as a result of the 'Big Bang' deregulation of financial services. Private sector interests therefore had a strong influence on the route alignment.

**'Vision' and 'strategy'**

Previous attempts to improve accessibility to the Docklands were considered to have failed due to the lack of an overall vision for the area. Long-term coherent urban redevelopment strategies were considered lacking at the time the JLE was initially proposed - leading to what many believed was piecemeal planning.

While the urban regeneration for Docklands was to be private sector-led, Local Authorities along the route, meanwhile, had varying levels of expertise to extract urban regeneration benefits from the JLE. Many interviewees highlighted a distinct lack of integration between land use planning and transport planning.

During the project's detailed planning and implementation stages the project development team, led by LUL, focused on the JLE as an infrastructure asset rather than merely a transportation service, which was seen by some to be to the detriment of its' original principal aims – one consequence was that stations became vast architectural 'statements' in their own right.

**Project planning and appraisal**

The decision to proceed with the JLE project was seen as influenced more by political factors rather than by any techno-economic rationale. JLE was seen as "over-ambitious" by many interviewees, especially in relation to its key elements of untried and tested technology related to moving block signaling system and the automated platform doors.

The project appraisal process was seen as "too narrow," too transport orientated, and too CBA-focused. Interviewees identified challenges surrounding the inclusion of non-quantifiable benefits. This was particularly true of 'regeneration' where in some quarters there was a lack of understanding of what it actually entailed and the lengthy timescales associated with it.

Interviewees highlighted a need for significant improvements in appraisal techniques, to measure the potential regenerative effects of urban transport projects.

**Project programming and implementation**

The JLE was considered by some interviewees to have been the victim of naïve and inexperienced project management during the implementation phases. Project contract preparation and subsequent implementation was seen as "flawed" – leading to significant cost overruns. Some senior members of the JLE project management team applied (path dependent) experience gained in Hong Kong with mixed (some argued detrimental) results.

The 'date certain' (i.e. deadline) for the required completion of the Millennium Dome caused major cost increases and led to the JLE project being held to ransom by contractors and their staff leading to further cost escalations.

**Financing and funding**

The 1992 global recession led to JLE project cost estimates being undertaken when construction prices were at the bottom of the market. Moreover, the original cost estimates for the JLE may not have been "all inclusive" and were thus artificially low.

This same recession caused Canary Wharf Plc. (which had promised to contribute £400 million to the project) to go bankrupt. As the Treasury insisted that the creditors of Canary Wharf Plc must honour this commitment before the project could proceed, this caused a delay of 18 months while new finance was sought from a consortium of 11 banks.

The financing of the project through global multi-nationals was believed to have suffered from cultural differences and subsequent mis-understandings that slowed-down progress, and in some instances, even prevented certain agreements from materialising. "The Chemical Bank of America one of these and the representative there just didn't believe that he could trust the British government and London Transport to complete the project."

On the other hand, the private sector was seen by some parties as (too) vulnerable to economic cycles and therefore not best suited to providing the levels of secure finance required over the long timescales.

**Success and failure**

The JLE's 'success' was based on judgements about several dimensions of its delivery, in terms of:

- the ultimate passenger numbers (ridership) it attracted;
- its architecture and station design;

- the urban regeneration it supported;
- the improved accessibility it offered;
- its role as a reliable "technological showcase"; and
- the significant boost to the UK economy it offered.

The project's failure was seen in terms of:
- its technological development difficulties which prevented the specified capacity of JLE being reached in 2000;
- its poor project management in relation to cost control during its initial implementation phase;
- its failure to fully capture the significant land value uplift achieved;
- the lack of transparency in some of the agreements reached among key stakeholders; and
- the failure to undertake a wider appraisal of alternatives such as upgrading the existing tube lines.

**Political intervention**

The JLE was seen as a highly politicized project as political support was critical for it to happen, and also because it transformed the project from what was initially seen as a private sector proposal to link Canary Wharf to Waterloo, to a broader public sector investment that sought to enhance accessibility in East London as well as linking the area to South London.

The private sector was seen as successfully cultivating a close working relationship with the UK government (indeed the Prime Minister, at one stage) to gain the latter's firm support and to 'sell' the private sector's vision for the future development of Docklands.

Later on, the 18-month project suspension was seen as a direct outcome of the government's commitment to their policy of private sector backing for infrastructure, 'come what may'.

The government's plans for the Millennium celebration forced project completion on the JLE by the specified date, and also a change of JLE project management. The government's intervention was considered a mixed blessing by different stakeholder groups, depending on their interests and outlooks.

The weak institutional relationships exposed in the planning, appraisal and development of the JLE is seen in some quarters as demonstrating the UK's national deficiency in developing and implementing MUTPS. The highly politicised nature of the project also exposed the government's nervousness about getting a 'bad press' – the majority of the media coverage being focused on over-runs in project time and costs.

**Culture**

The UK planning context is seen in some influential quarters (especially in the Treasury and private sector) as presenting certain *blocking* mechanisms which impeded the development of other MUTPs as well.

**Technology and standards**

Relevant UK project standards for MUTPs tend not to be regularly updated – this caused some confusion and over-specification in the rush to complete detailed designs, as designers erred on the side of caution. In general, technological progress (in tunnelling and signaling) was seen as outpacing the relevant national regulations.

The introduction of new technology, whether in the form of new signaling systems or new rolling stock, inevitably introduces high levels of risk to MUTPs. The JLE project suffered as a result of the 'fall-out' from other adverse events, particularly the Heathrow Tunnel collapse. Both the JLE and Heathrow Express projects were simultaneously using the New Austrian Tunnelling Method (NATM) in London Clay for the first time.

Technology choices also involved a compromise between the long-term sustainability of the system and pragmatic short term financing costs.

**Lobbying**

Lobbying was seen as a key factor in the realisation of the JLE – at one point a choice lay between either Crossrail or the JLE/Canary Wharf development, and certain parties suspected their project was being misrepresented by officials, leading these parties to circumnavigate the officials and approach the key decision makers directly.

Some argued that the early efforts by Canary Wharf lacked government support and endorsement, possibly because the private sector was seen as too aggressive and because interests in the City feared the competition that a successful Canary Wharf would present.

In the end the JLE went ahead due to the sustained efforts of Canary Wharf Plc to plan and financially support an early version of the JLE in line with government policy.

**Risk, uncertainty and complexity**

Many interviewees felt that the project risks of the JLE had not adequately been shared fairly amongst the project beneficiaries. Also, political reactions to risks (as they arose) were often felt to be unbalanced, and tending towards excessive knee-jerk reactions – causing substantial (negative) project impacts.

Political influence was itself a significance source of both positive and negative risk – the power of political influence and decision-making enabled the JLE to be realised, but this same power significantly interfered with the project during implementation, leading to delays and cost increases

Multiple stakeholder participation early-on at the project inception stage was seen as a good way of mitigating risk, as project teams (especially the clients, LUL), often lacked relevant experience in their roles.

**Transparency**

Government negotiations with the private sector, particularly regarding funding contributions to the JLE project, were seen by many as opaque and lacking transparency due to 'commercial sensitivity', with the result that the exact nature of the agreed risk-share between the public and private sector became an unknown for certain project stakeholders.

## 3.3 The hypothesis-led investigations: Jubilee Line Extension (JLE)

### 3.3.1 Responses to overall research questions and hypotheses

A total of 10 Hypothesis-led research (HLR) interviews were conducted between September and October 2009 for the JLE case study. A copy of the interview questionnaire and index sheet is attached at Appendix 22.

The following comprises a summary of the main findings from the HLR interviews in relation to OMEGA's Overall Research Questions and Hypotheses. The full report on the HLR phase for the JLE case study (which contains many other important generic and project-related observations) can be found on the CD ROM: OMEGA Prehypothesis and Hypothesis Led Reports\OMEGA CENTRE - JLE HLR Report - Final.docx.

**ORQ#1 - What constitutes a 'successful mega urban transport project (MUTP) in the 21st Century?**

#### 3.3.1.1 Project objectives

JLE interviewee responses to the above ORQ suggested a number of key observations regarding the efficacy of project objectives and influences thereon, as follows:

- MUTP objectives do *not* always adequately clearly differentiate between the delivery of a 'product (in the form of a piece of engineering hardware) and the transport service(s). It was felt that this lack of clarity between the difference between a project as a product and as a service may inhibit progress in later stages of the project life cycle where project managers, building the product, hand it over to the operations teams who must run a service.
- successful projects often have far reaching objectives and impacts that may not easily be identified and appraised through the cost benefit analysis (CBA) as outlined by the Treasury Green Book. The decision to proceed with a MUTP is instead more usually based on political considerations –which will take account of the results of the formal narrow appraisal, but balances such findings against the government's wider political objectives, such as regenerating deprived inner city areas, securing financial contribution to critical infrastructure from the private sector etc.
- the MUTP appraisal process is seen as relatively opaque, lacking a detailed account of government objectives, and how these are weighed against the results of a CBA. The criticism is seen to represent a call for a more transparent framework to capture the decision making process applied to appraisal and the weightings used by key stakeholders, especially when appraising projects in relation to their wider impacts;
- for projects to proceed they must generally align with political objectives, however, understanding these objectives, and their relationship with MUTP expectations, is often difficult to discern as policy can be nebulous and cannot be simply extracted from political party manifestos;
- UK MUTPs frequently have regeneration as a key objective. This kind of development is, however, 'not consistently defined, leading to considerable confusion about what (in the form of urban regeneration) can reasonably be expected to be delivered, and when;
- there is a high probability that new project objectives will 'emerge' over the course of the MUTP planning, appraisal and implementation periods as a result of changing contextual elements. These contextual elements may arise from internal or external influences but most often from emerging/changing stakeholder agendas;
- although often attributed to 'muddling through' or ad hoc decision-making, 'emergent objectives' can act to enhance the ultimate sustainability of a project by helping it adapt to and focus on changing contexts. The ultimate relevance and influence of such objectives will partially depend upon their resonance and longevity – some supposedly 'visionary' objectives may be transient and judged as rhetoric or short-term fads, others not;
- early (original) project objectives tend to be limited to achieving 'least cost' solutions such as the Greenwich to Waterloo Line promoted by Canary Wharf. This typical narrow early view makes the MUTP especially vulnerable to 'bolt on'/emergent objectives;

- the evolutionary process by which 'emergent objectives' emerge can be seen as positive since it helps to shape the MUTP to better suit its contextual influences. However, there needs to be some form of accepted 'tolerance' defined for each objective, to limit the possibility of this process turning into 'scope creep', especially during the detailed project design process. This may be achieved through more rigorous definition of objectives (not least to preclude multiple interpretation thereof) coupled with scenario or stress testing;
- MUTP objectives should reflect the degree of interaction they are anticipated/expected to have within the areas they traverse and impact upon;
- project objectives should be based on clear policy statements where possible, recognising the role of MUTPs as 'agents of change' where appropriate. This is especially true of objectives relating to social and environmental sustainability; and
- project objectives should be capable of being operationalised in such a way as to be meaningful to all stakeholders. There is apparent confusion, it was noted, over the definition of 'sustainability' and its relationship to project objectives.

#### 3.3.1.2 Project appraisal

In regard to project appraisal, interviewee responses mirrored a number of the earlier CTRL findings, as follows:

- the need for project objectives to be accompanied by the establishment of measurements and systems/processes that enable clear and transparent appraisal and post-project evaluation of performance on a consistent and accurate basis;
- projects like JLE that have wider objectives than their transport function - which suggests they are more a public service than a commoditised market-led service, with potentially far-reaching impacts that will lead to a commitment of significant further public sector resources. The view was conveyed that these other impacts ought to be debated and scrutinised in such a way as to ensure they are explicit;
- there is a need to acknowledge that some of the benefits/costs associated with MUTPs are often very difficult to identify. They furthermore may only materialise in the long-term and can often prove unexpected.

Interviewees confirmed that UK MUTPs tend to be appraised on a very narrow basis jointly by the transport sector and the Treasury, and that the Department of Transport (DoT) internally ranks projects through CBA ratios which too often offer poor indicators of the project's ability to produce favourable socio- economic impacts. It was also noted that DoT , will often lobby against alternative projects promoted from external sources that have low CBA values, such as the JLE, as a result of which it was felt that potentially valuable projects may be quashed prematurely.

To assist MUTP appraisal, the JLE interviewees highlighted the need to differentiate between those objectives that represent the fundamental reason(s) why the project is being built, and those that represent other less certain but nevertheless desirable important project outcomes. This differentiation process, it was suggested, should be achieved with consultation of multiple stakeholders via a multi-criteria analysis (which could also provide a useful tool for ranking objectives).

#### 3.3.1.3 Risk

JLE interview respondents indicated that the levels of risk for MUTPs affected by PPP financing arrangements should include an analysis/summary of potential project 'winners' and 'losers.' In this context, some interviewees suggested that the public sector in the UK has a poor record of negotiating financial contributions to projects. The JLE was presented a case in point in that contractual caveats accompanying the deal were deemed very

unfavourable for the public sector. In this regard, it was also observed that effective audit trails - capable of tracking transactions that might otherwise become opaque as a result of so-called 'commercial sensitivity' issues – were absent and that such arrangements need to be established for future projects. This concern was reinforced by the UCL OMEGA Team in conducting their research on JLE by their inability to trace the exact details of the financial 'deal' arrived by central government with Canary Wharf and the status of payments made to date .

On the basis of the JLE interview responses, one may conclude that for MUTPs to be considered 'successful' in the UK, high levels of commitment and trust are needed among key stakeholders, aided by positive intervention from both the private and public sector. To elaborate:

- political commitment generally needs to be sustained *throughout* the planning period and must not always be seen as a negative force, even though, political 'interference' due to short-term politicking can be seen as highly problematical; and
- the economic quantification of all benefits is *impossible* to achieve since, among other things, the definition of a 'benefit' is likely to change over time. This calls for a strong political vision and commitment to ensure that MUTPs with the highest potential for wide ranging positive impacts go forward.

The message communicated by many JLE interview respondents was that the value of establishing strong co-operation amongst key stakeholders was seen as very significant to enable MUTPs become as adaptable as possible to future contextual scenarios. Having said this, interviewees noted that this philosophy is not echoed in the way many MUTP teams are currently structured in the UK in so far as many contractual arrangements used are interpreted in such a way as to establish an adversarial relationship between clients, project managers and contractors.

A final issue raised by JLE interviewees in connection with the above ORQ is that a better balance needs to be struck between the amount of time spent on the planning/appraisal stages and the implementation stage. While some advocated shortening the former, others warned that a compressed planning stage can result in high impact decisions being made *without* fully exploring the benefits of other options with all appropriate stakeholders.

**ORQ#2 - How well has risk, uncertainty and complexity been treated in the planning, appraisal and evaluation of such projects?**

**ORH#3 - The level of competence in decision-making and planning in today's fast-changing world is best assessed by the adequacy of the treatment of risk, uncertainty and complexity and sensitivity to context – all of which are important demands on Strategic Planning.**

### 3.3.1.4 Community engagement as a means to mitigate RUC

JLE interviewees suggested that full community engagement from the outset of the project, coupled with stakeholder monitoring during the implementation stage, can be a means to mitigate downstream risk, uncertainty and complexity associated with stakeholder relations. This was a conclusion also arrived at by the CTRL interviewee respondents. Moreover, lobbying was acknowledged as potentially playing a key role in shaping MUTPs and knowledge in this area is particularly important for project promoters.

### 3.3.1.5 Need for 'certainty', accuracy and realism

Information concerning political motives and policies was found to be critical to the success of the early planning stages of MUTPs by JLE interviewee respondents, as ultimately was the proposal's passage through Parliament. However, it was pointed out that gaining the 'required information' to do this was *not* easy as government policy can be somewhat nebulous, requiring direct political assistance to identify key issues.

Project planning and implementation plans/programmes, it was emphasised, need to be 'certain' and 'realistic' to enable the proper integration of MUTP actions and activities by all concerned parties. In this sense, 'certainty is seen as particularly critical in terms of commitments to the delivery of key MUTP decisions, approvals and infrastructure components, ensuring they are delivered by a specified time on which parallel investment and funding decisions are to be based by the private sector. Lack of certainty, it was agreed, can de-motivate key MUTP stakeholders.

### 3.3.1.6 Factors affecting the balance between vision and practicality

JLE interviewees observed that MUTPs *must* strike an appropriate balance between project vision and practicalities of project implementation. For the JLE, the early planning stage was wholly driven by the perceived practicalities of a public/private sector coalition focusing on value for money. Subsequent project planning work - in the early 1990s and onwards - saw the balance move towards a more public sector vision-led approach and the subsequent commitment of further significant public sector resources. Notwithstanding this, JLE interviewee respondents indicated that budget constraints in 1992 saw a refocus back on project practicalities. This interplay between vision and practicality shifted during the project lifecycle so that once the JLE moved from essentially a private sector project to a public sector initiative, the early implicit imperatives to deliver a 'least-cost' rail link using existing systems were overridden by concerns over prestige and the perceived need for a 21st century showcase railway.

The prevailing context at Royal Assent is particularly important – a project entering it's Royal Assent phase is often subject to budget constraints at that point in time which were not readily foreseeable during the planning process. This may force critical decisions to be made at the '11$^{th}$ hour' which are subsequently irreversible.

### 3.3.1.7 Critical elements of risk, uncertainty and complexity

The short planning and implementation period for JLE was cited by many interviewees as a major source of risk and uncertainty. It was suggested that had more time been available for planning, better decisions might have been made concerning the JLE's tunnel diameter, deciding on station size and other related specifications, and more satisfactory solutions to construction/safety standards, which affected the project later on.

### 3.3.1.8 Skills and competencies and the project lifecycle

The ability to take a holistic vision of a MUTP throughout its lifecycle was seen as desirable by JLE interviewees – especially in relation to mitigating project risk, uncertainty and complexity (RUC). JLE interviewees pointed to project management failures during project implementation and suggested that the need for different skill sets and leadership qualities during different phases of the project lifecycle are not readily recognised.

The same source argued that project stakeholder competencies needed to match key MUTP roles. Some interviewees, for example, suggested that clear project vision statements and objectives were articulated for the project but that the management team lacked the skills

during the implementation phase to adequately operationalize these objectives, with the result that scope creep prevailed until such time a new management team was brought in to complete the project. “

### 3.3.1.9 Extracting benefits from MUTPs

Considerable uncertainty was noted by the JLE HLR interviewees regarding the extraction of benefits from JLE through the planning system in so far as they lamented on the absence of the availability of mechanisms to extract benefits from property value uplift attributable to the new line. Section 106 agreements were seen as insufficient for extracting benefits even accrued by the smaller scale private sector real estate developers.

The interviewees conveyed the view that political decisions can be disproportionate to MUTP financial propositions if they fulfil wider policy objectives. In the case of the JLE, it was explained, central government sought contributions from three private developers totalling £425m whereas the net present value (NPV) of these contributions was considerably less at the time of the JLE opening, suggesting that the arrangement was made as much for political reasons as a fair contribution to the project. Many interviewees raised the issue of how land-value uplift can be captured from MUTPs such as the JLE from real estate beneficiaries and the need for a workable system.

An underlying message conveyed by the JLE interviewees was that the heart of the inadequacy of extracting adequate benefits from the private sector vis-a-vis the JLE lie with the limited competence of public sector negotiators. Interviewee responses suggested that while they felt the planning instruments/processes were more-or-less adequate to capture contributions from the private sector, the bargaining skills of public sector representatives undertaking this task fell short of expectations. In this context, MUTP risks in public sector cost recovery can be closely associated with the availability of public sector negotiation skills 'across the board'. JLE respondents saw the public sector as being in a very weak bargaining position throughout the project lifecycle.

### 3.3.1.10 Political will and influence

While political influence/agendas had a significant impact on the planning and delivery of JLE, there were no formal monitoring mechanisms in place (aside from ARUP working as the Secretary of State’s agent) to assess the broader RUCs stemming from any inappropriate governance and regulation of the MUTP. That said, the London Development Docklands Corporation (LDDC) was seen as a powerful organization set up as a result of political will to develop the Docklands and mitigate risks associated with the continued decline of the area at the time.

### 3.3.1.11 Best practice v institutional learning

While relevant experience from other MUTPs overseas was seen by many as a means to mitigate risk, the application of overseas experiences in a context insensitive manner in retrospect was seen by many JLE interviewees as fraught with risks, many of which are difficult to identify in advance. It was argued that the decision to follow MUTP lessons from Hong Kong - by initially appointing to lead the JLE team an ex-Hong Kong team to responsible for planning and building the metro in the territory - marginalised those with more local experience who were available.

This opinion suggests that the concept of ’best practice’ – in the case of the JLE - more in the detailed design and implementation than during the *planning* process –prior to the deposition of the Bill may have resulted in the large cost increase during detailed design, as the original cost estimates did *not* take adequate safety levels into account. While it was

difficult to ascertain from the JLE interviewees whether the institutional learning from other projects (such as the Hong Kong Mass Transit System) was on balance a positive or negative experience for the JLE, what was clear is that many interviewees highlighted the importance of being in touch with "the way things were done in the UK."

#### 3.3.1.12 Skills and competencies

As noted above, JLE interviewees highlighted the need for MUTP managers and decision-makers to be able to see the project in its entirety (holistically) over the whole lifecycle. Coupled with this it was suggested by the same source that there may be a need for as a result of taking this stance for *different* skills to steer the project during different phases of the lifecycle.

Much was made in the interviewee responses of the importance of the clarity of project objectives and of the importance of strong leadership to help reduce uncertainty. Many respondents claimed that the fact that the JLE project management was initially derived essentially from an 'in house team' from London Underground Limited (LUL) who were also the project client introduced weakness and confusion into the management of the project which ultimately critically impacted on the implementation phase of the JLE.

The 'one off' nature of MUTPs all over the world often leads to a public client which lacks the required competence for such a complex undertaking. The same is true for local officials who may have little or no experience of interaction with MUTPs, resulting in lost opportunities at the local level. Under these circumstances, it was noted that it is helpful to maintain consistency of personnel *throughout* the planning and delivery process - so as to maintain mutual understanding of negotiation positions.

The responses from the JLE interviewees confirm that regular and sustained monitoring of MUTP contextual matters that are likely to influence the project's planning, appraisal and delivery is *critical* if RUC is to be minimised. This requires extensive oversight of all inter-related and inter-disciplinary matters associated with contextual influences and project impacts. Informal monitoring of contextual matters (notably politics) was also seen as a key activity by many JLE interviewees. This often takes place through well established (informal) relationships and networks.

#### 3.3.1.13 Risk management and project funding

Financing MUTPs is a particular area of high risk. JLE interviewee responses indicated that the funding arrangements made for the project was vulnerable to high risks and uncertainties from the outset. This it was claimed was because of the importance central government placed on financing the project using private sector investment, effectively exposing the project to broader economic risks which can be particularly acute in the real estate sector. The risk was exasperated by the fact that the public sector has a poor track-record as an effective negotiator which meant it was *not* (as earlier indicated) in a strong position to negotiate contractual terms regarding the private sector contribution to the project.

#### 3.3.1.14 Risk sharing

In the view of many of the JLE interviewees, the JLE did *not* represent a good example of equitable risk share. This opinion was held by 40% of HLR JLE interviewee respondents who considered that the new line did not represent an adequate and appropriate distribution of project and financial risk between the public and private sector.

### 3.3.1.15 'Time to breathe'

Slightly over 50% of JLE interviewee respondents agreed with the premise of the need for the 'time to breath" (see Figure 3.1 below). Interviewees suggested that there needs to be a realization that any 'time to breath' must, however, be context dependent and balance between speed and sloth. JLE HLR responses provide warnings against both overly slow and overly fast planning, appraisal and/or implementation stages. It was explained that projects which are slow to implementation post Royal Assent, in particular, lay themselves open to political and economic risk (as changes of government, economic circumstances, etc). Projects which are *overly* fast, through the planning stage can make project critical decisions *without* having gathered the appropriate information required for a balanced and realistic decision.

### 3.3.1.16 'Control' of the planning and delivery processes

The majority of JLE interviewee respondents considered that *if* a project is correctly planned, it can be delivered to a tightly controlled schedule (see Figure 3.3 below). Having concluded this, a notable respondent argued that "The way that we deliver major projects is flawed, and we (thus) need to change the way we do it. And when we do, we will be able to deliver predictably. And that has to involve the control of the total process; the planning and the implementation and the operation." This inherent belief that if done properly (i.e. with the appropriate control of the planning and delivery processes) does not fit comfortably with other findings of the OMEGA research programme which suggests that a MUTP is certain to change throughout its lifecycle. The skill in managing such a project is not to keep the project on track with a tightly controlled schedule, but responsive and consistent with the changing contexts. In other words: keeping tight control of a dynamically changing project which is responding to a dynamic context.

### 3.3.1.17 Planetary alignment concept

90% of JLE interviewee respondents concurred with the planetary alignment concept (see Figure 3.2 below) –where there are perceived to be moments in time in the project lifecycle that present ideal opportunities to take decisive action in pursuit of specific ideas, agendas and decisions.

**Figure 3.1: JLE interviewee responses to premise of the need for a "'time to breathe'"**

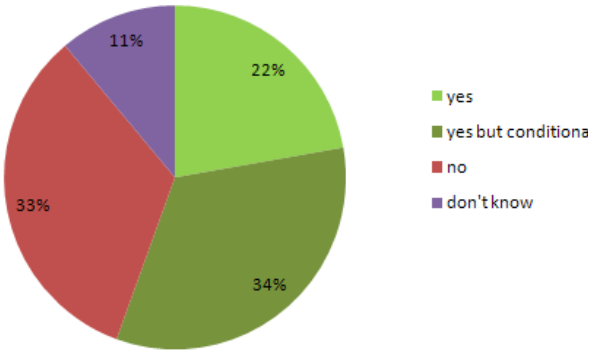



**Figure 3.2: JLE interviewee responses to the premise "seizing the moment'"**

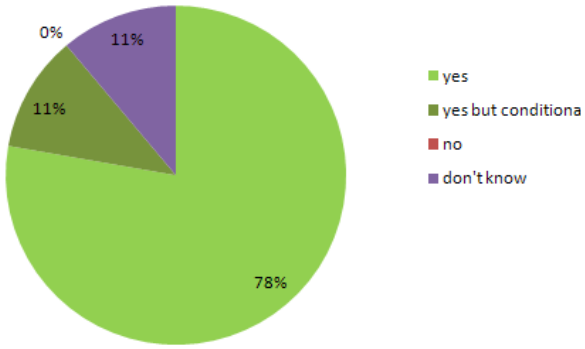
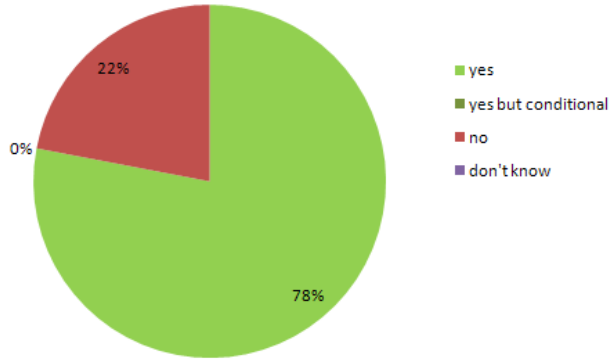


**Figure 3.3: JLE interviewee responses to the premise "tight project control is unrealistic"**




### 3.3.1.18 The negotiation process, skills and relationships and impact on risk, uncertainty and complexity

Responses from the JLE interviewees suggested that in the UK context, levels of risk, uncertainty and complexity (RUC) may be increased by the following:

- the public sector is seen as being in a poor bargaining position by its private sector counterparts (especially in relation to the strength of its planning policy and guidelines);
- public sector staff are seen as less proficient at negotiation than their private sector counterparts;
- there is a clear need for mutual appreciation and understanding of each parties' position thereby making collaboration rather than confrontation as the basis for moving forward decision-making. Such understanding needs to be built up over time (thereby earning trust) on the basis of the free flow of appropriate and accurate information; and
- there is a need to build up trust and confidence between the MUTP promoters, interested public bodies and the public at large through great honesty and transparency on behalf of all.

### 3.3.1.19 Innovation, risk, uncertainty and complexity

JLE interviewee responses suggested that innovation in MUTP developments may become a 'double edged sword.' For when managed correctly, innovation can benefit the realization of a project's objectives significantly, whereas, there are also many potential pitfalls and risks of untried/untested innovative systems and technology failures that can contribute to significant cost overruns and delays. To minimise these situations there is a clear demand for careful monitoring *throughout* the project lifecycle.

### 3.3.1.20 Risk, uncertainty and complexity and pace of change in 21st Century

Some JLE interviewee responses suggested that if a MUTP *cannot* show a favourable result in terms of traditional appraisal (especially CBA outcomes), it is generally unlikely to proceed, and it is the exception that a project is over-ridden for political priorities. It was also suggested that such traditional appraisal approaches should be supplemented by sustainability concerns, although considerable uncertainty was expressed as to how this might be a achieved in practice set against challenges of 21st century.

There was considerable support among many of the JLE interviewees that MUTPs need to be appraised over longer time scales and that the net present value (NPV) rates and project

lifespans used in CBA should be more realistic. One respondent claimed: "….if you assume a 100-year life (for a project) rather than whatever the life is, you get a (much) better return".

The lack of a holistic definition for sustainability visions was cited by many respondents as a problem. What was especially cited as significant was the lack of available (realistic) sustainability criteria employed for MUTP planning and appraisal that looked ahead to 21st century challenges. This was in part attributed to the lack of any strategic public body being available to take the lead in operationalising sustainability.

It was also suggested that the presence of too many MUTP objectives can be detrimental to a project. One respondent commented: "I have a concern that we can introduce so many criteria that we make the process of agreeing on a project yet more difficult while experience tells us it's hard enough already. Should these criteria be viewed, yes, but I was reminded of a discussion I had with a senior politician some time ago after I came back from China where I said I think we have lost our way, in China there's still a view of a greater common good where (here) we seem to be obsessed by the rights of the individual."

On the basis of the above the appropriate responses to increased RUC for MUTPs in the 21st Century are seen to include:

- enhanced competencies in the planning and delivery of MUTPs;
- the removal of professional, technical and functional silos (anticipated to reduce in-fighting between departments responsible for project planning/implementation);
- the need to understand better influences associated with prevailing and future emerging contexts on the planning, appraisal and delivery of MUTPs;
- the need to identify and anticipate (through appropriate strategies) the contextual changes that may be brought about by MUTPs;
- the need for planning and implementation strategies and programmes that are robust in the face of changing needs/demands ; and
- the need for greater MUTP stakeholder involvement in the planning, appraisal and delivery processes..

**ORQ#3: How important is context in making judgements regarding Overall Research Questions 1 and 2?**

### 3.3.1.21 Understanding of context is critical

JLE interviewee responses highlighted the evolving nature of MUTPs, particularly the multiple changing contextual elements that mould projects over time. Respondents confirmed that MUTPs can themselves (through pro-active or reactive actions) mould the contexts in which they operate and traverse, and that to better understand these forces it is advantageous to perform regular project context.

On the basis of the above, once may deduce that 'successful MUTPs are more likely to be associated with planning and delivery agents that possess an acute awareness of the importance of context throughout the project lifecycle and which are capable of undertaking pro-active decisions based on their context intelligence. The most significant generic contextual elements for MUTPs according to JLE interviewees (as in the case of the CTRL) were stakeholder perspectives, motives, agendas and the political and financial/economic contexts in which they emerged as agents of significant contextual change.

### 3.3.1.22 Political influence and support as a key contextual element

JLE interviewees confirmed that political influence/support for an MUTP is *the* most critical contextual factor of MUTP planning and delivery (beyond the conception of the project itself)

and is thus a clear pre-requisite to the successful launch of any project of this kind. As in the case of the CTRL, JLE interviewees considered political patronage - in the form of a project champion – as a key asset for MUTP project sponsors. Such champions, it was confirmed, fulfil a number of important roles by providing specific foci for MUTP developments, including clarifying/setting/adjusting project objectives, establishing project credibility and mandate for project teams, consensus building and networking. The role of the project champion is especially seen as most important in the early stages of project development (up until political approval is given for its funding *and* construction).

One JLE respondent made the case that political support was not only required *throughout* the project lifecycle but that project champions *must* be accompanied by 'project guardians' who can keep the project going during times of adversity. Several respondents emphasized that such key stakeholders were especially invaluable during the project implementation stage of the JLE when the support from the Blair government and the role of John Prescott, in particular, as project guardian proved crucial.

#### 3.3.1.23 Perceptions of context

JLE interviewee responses confirmed that the perception of a project's context varies by both MUTP stakeholder and the phase of the project lifecycle. It was noted that private sector stakeholders are seen as more 'contextually aware' (or aware that they are unaware) especially in the early stages of a project (for example CW). They are therefore more likely to seek advice from appropriate sources. Public sector stakeholders, on the other hand, were seen as slower to act/react to contextual changes and challenges, even though overall they tend to consider a broader range of concerns. One respondent emphasised that a keen sense of context *must* be accompanied by the power and willingness to take action based on this understanding. The point was made that during the delivery of the JLE, while project managers may have been aware (even hyper-aware) of the political contexts surrounding the project but at the end this 'awareness' may in fact have limited the courses of action they were prepared to take as they feared the political 'fallout' from a decision more than the problems caused for the project by not making the decision.

The JLE interviewees emphasised that public sector institutions possess a multitude of different perceptions of contextual importance depending on their interests, ranging from the Treasury (concerned with finance) and the DoT (concerned with transport the costs and benefits of transport operations). The context miss-match between these interests and wider interests of MUTPs often leads to tension and reductions in co-operation between government departments and even MUTP stakeholders.

However, it should be noted that the concept of 'success' is often stakeholder specific. As one JLE interviewee stated: 'one man's triumph was another man's disaster' – a point reflected in the fact that while many public sector objectives associated with the JLE were seen as highly successful by the majority of stakeholders, the same objectives where seen as wasteful by some private sector stakeholders.

#### 3.3.1.24 Context, the project lifecycle and pivotal decisions

JLE interviewees suggested that while the 'project delivery phase' of the new line was fraught with contextual influences which were impossible for its project managers and stakeholders to ignore, its planning phase was seen as highly vulnerable. This was so, it was suggested, because this was the most formative stage at which risk factors and uncertainty impacted the greatest on the projects future arising from both within the logistics of the project's planning but also from outside the project to exogenous factors that affected the funding of the project.

Interviewees suggested that JLE developments responded to the following key contextual influences:

- Government's/London Regional Transports' decision *not* to proceed with the Waterloo to Greenwich Railway proposal by Canary Wharf;
- Government's decision *to proceed* with the East London Rail Study and rush the planning of the line (perhaps to preclude future proposals by Canary Wharf?);
- the 1992 recession and government insistence on a private sector contribution to the project from Canary Wharf as promised;
- London Underground Limited's decision to make JLE a technological and architectural showcase;
- the tunnel collapse at Heathrow Airport (which shared the same technology as that employed for the JLE tunnels).
- Government's decision to site the Millennium Dome at Greenwich and have it accessed by JLE;
- Government's decision to replace the JLE project management delivery team with outside contractors on account of the nervousness by the Blair Government over the failure of the Millennium Celebrations impact on government popularity;
- subsequent de-specification of the JLE line triggering O&Y delivery clauses to pay back £100m, (more than half of original private sector payment) forcing LUL to start upgrade work in 2003 on a £300m project on both the Jubilee Line and the Northern Line (with a cost now at £800m).

### 3.3.1.25 MUTPs as 'agents of change'

In light of the positioning of JLE as a key element in the regeneration, growth and restructuring initiatives of the London Docklands in the early 1990s, interviewees confirmed the view that the new line had a very significant transformation role. While those interviewees who were stakeholders of the project suggest that the relationship between JLE and these wider initiatives has not been fully exploited in terms of coherent land use-transport strategies, others argue that the JLE project has had a beneficial impact on the encouragement of investment in (particularly) regeneration. The project supported Phase 2 of the Canary Wharf development (expansion from 15,000 workers to 63,000 between 1999 to 2004), the regeneration of the South Bank including the Tate Modern Gallery, the Greenwich Peninsular and the Millennium Dome. The point was made that the success of Canary Wharf forced City planners to relax regulations and allow the City to also modernize, thus facilitating a financial regeneration within the heart of London. Notwithstanding these developments, many interviewees indicated that the full benefits of the project - in terms of regeneration and growth - will *only* materialise in the longer term - for example at Canning Town Regeneration.

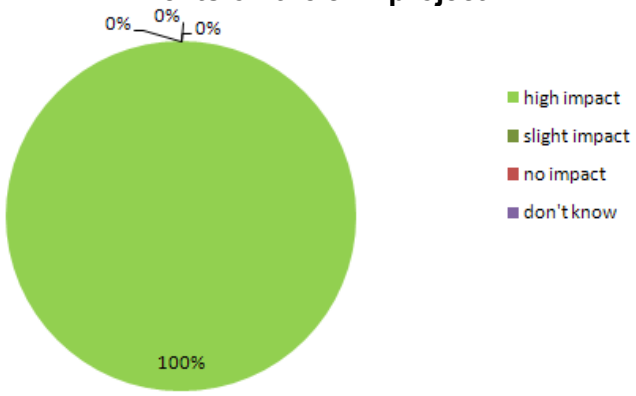
The importance of institutional context into which the project was placed has been highlighted by a number of respondents. The earlier establishment of the London Docklands Development Corporation (LDDC) capable of dealing with key issues (especially private sector stakeholder matters) so as to maximise the potential benefits of JLE to the Docklands was a critical force in the success of the JLE. However, some interviewees pointed out that the formation of the LDDC, and therefore a single head in charge of regeneration over five London Boroughs, caused friction and resentment, and perhaps formed barriers to potential co-operation over the development of adequate interchange facilities for the project.

### 3.3.1.26 Mega events as contextual moulding forces

100% of respondents saw mega events as having a high impact on the JLE project (see Figure 3.4 below). While the definition of a 'mega event' varied according to interviewee – the key mega events referred to were:

- The Millennium Dome and Celebrations (costing £700m) was seen to have a critical contextual influence on the JLE which was both beneficial and problematic. In terms of the risks, uncertainties and complexities it spawned one may include:
    - reduced short-term uncertainty for Canary Wharf and other developers/land owners as government made a strong commitment to finish the line in time for celebrations;
    - increased long-term uncertainty and overcrowding risk as the line specification was degraded, thus limiting eventual capacity to Canary Wharf and Docklands (although Canary Wharf hedged against this with a financial penalty clause linked to line capacity); and
    - fixed deadlines associated with the Millenniums helped to reduce risk by enabling broad consensus on the need for/commitment to action to be reached quickly.
- The 'Big Bang' (i.e., the deregulation within the financing sector in 1986) three years before the JLE Bill was submitted to parliament and had a major impact on Canary Wharf since it provided for the additional offices this development would require and thereby fuelled the passenger demand for the JLE project by virtue of the access to the locations of the new office areas.
- The Kings Cross fire and Clapham rail disaster (1986 and 1987) severely impacted safety legislation throughout the planning and early delivery stages of the JLE, resulting in the project being in a perpetual state of 'catch up'.
- The global recession and collapse of the real estate market led to the bankruptcy of Canary Wharf PLC. This financial mega event impacted heavily on the JLE as an 18 month moratorium was required to restructure the private sector finance supporting the project.
- the Heathrow Express/Heathrow tunnel collapse which was also using the New Austrian Tunnelling Method in London Clay for the first time caused a 6 month delay on the JLE whilst investigations tool place.

**Figure 3.4: JLE interviewee responses to the question - "what was the impact of Mega Events on the JLE project?"**




### 3.3.1.27 Clarity of project goals, visions and objectives

In the UK there has long-time been evident a tension between planning 'visions' and political pragmatism - politicians are in particular uncomfortable with backing a 'vision' without some proof that it is going to be successful. This, it has been argued has contributed to a lack of a clear vision for the JLE project from the outset.

60% of HLR interviewees felt the JLE was prone to 'muddling through', and required a more clearly articulated set of objectives and visions (see Figure 3.5 citing the lack of a vision for the prolonged planning phase of the JLE). Interviewees noted that JLE project objectives were subject to considerable change as a result of emergent agendas from different

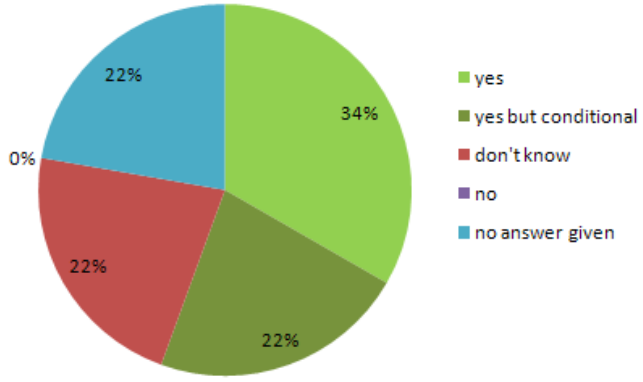
stakeholder groups during both the project's planning and implementation phases. The responses, however, suggested that the degree of 'muddling through' perceived was stakeholder dependent. From the urban and transport planner perspective there was no early vision with the first attempts to link the Docklands with the central London (it was a direct rail link from Canary Wharf to Waterloo) - although by the time of the East London rail study the project's visions and objectives transformed into a link that looked to service a mega development on the Isle of Dogs.

One reason, it was suggested, for the lack of a clear vision and objectives may have been that central government was slow to realise the potential of the Docklands site as providing additional financial office space needed as a result of the 'Big Bang'. It was also suggested that government was perhaps unduly influenced by the City which was fearful about the competition that Canary Wharf would generate. One way or another, interviewees indicated that the government's JLE project objectives were *not* articulated at the start, but instead manifested themselves over time following political pressure as the planning process proceeded.

Many interviewees argued that the project objectives should have been decided *following* consultation with multiple stakeholder groups – so as to help stress-test these objectives against the different experiences within the groups and to rate the practicality of the objectives. The JLE was also criticized by many respondents for the inclusion of overly optimistic objectives from London Underground (LUL) regarding the use of untried and untested technology such as the new moving block signaling system, or the platform level automatic doors.

Like the CTRL, JLE interviewees considered that having a shared vision about project objectives and deliverables can *become* a unifying element within and between MUTP stakeholders that helps to address (reduce) issues of uncertainty - inasmuch as this can become the basis for commitments by parties responsible for delivering key parts of the project. Some respondents felt clear vision statements and objectives for the project *were* articulated, but that the JLE project team lacked skills during the implementation phase to operationalize these objectives with the result that 'scope creep' set in. One interviewee explained: "they had a huge, what I call, project implementation knowledge gap." It was also suggested that becoming locked into the delivery of precisely defined objectives may be problematical when evolutionary forces are at play. As one respondent explained: "When you go into a large project, what you have to know is that everything is going to change, and you have to move with that change. If you find forces or whatever it is that just locks you into 'this is what you said you were going to do and now you have to do this'... if you're so stupid to have that happen to you, then you're …. you're done".

**Figure 3.5: JLE interviewee responses to the question - "Did previous attempts to link the Docklands by heavy-rail fail due ultimately to the lack of such vision?"**

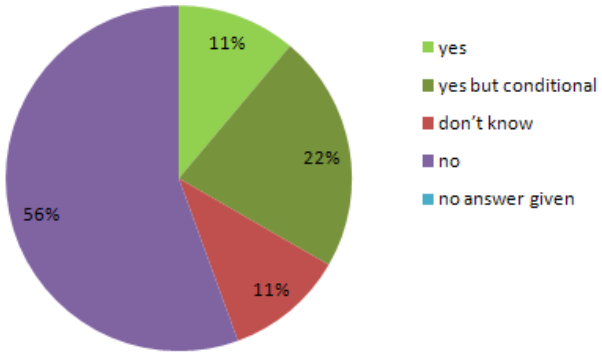


**ORH#1 - Traditional appraisal criteria relating to cost overruns, completion dates, generation of travel time savings for users and rates of returns to investors are inadequate measures of success in the 21st Century as sustainable development concerns become increasingly critical both globally and locally.**

### 3.3.1.28 Closed v open system approach

The majority of JLE interviewee respondents disagreed that the financing rational for the JLE was based on the project as a 'closed system'. (Figure 3.6). However, it should be noted that this response reflects the project as it was structured *once* it had moved from a private to a publicly promoted project. Like the CTRL, the JLE was treated as a closed for purposes of financial (demand) modelling and appraisal as part of the business case assembly but was later treated as an 'open system' in terms of its accommodation of broader concerns that ultimately *became* a major part of the justification of the project. Indeed, many interviewees indicated that the JLE would *not* have gone ahead on the strength of the CBA alone.

**Figure 3.6: JLE interviewee responses to the question - "Was the financing rationale for the planning, appraisal of the JLE based on the belief that the 'line haul' could be treated a discrete 'closed system'?"**




Few respondents felt that the models used during the JLE's project appraisal phase were manipulated or were "anything other than the best available at the time" (see Figure 3.7). It is clear from interviewee responses, however, that current appraisal and evaluation tools for MUTPs are *not* considered broad enough to take into account 21st Century knowledge of impacts. On this basis, it may be concluded that dependence upon these 'outdated tools', *alone* is unlikely to deliver a holistically 'successful' project – that is, a MUTP which is judged successful by the majority of key stakeholders.

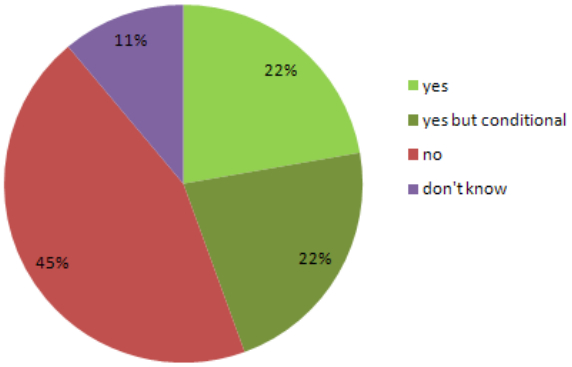
Key issues associated with the application of current traditional (pre-project) appraisal were perceived to be largely the same as those cited for CTRL, in that the JLE interviewees also .emphasized:

- the need to *enhance* current appraisal techniques and processes rather than abandon them; and
- the difficulties associated with using sustainability development visions as a framework for appraisal due to the perceived difficulties in defining 'sustainability' in an operationally assessable manner.

That the JLE patronage forecasts were seen by interviewees as "reasonably accurate" may be in part due to their reliance on Canary Wharf office space projections. The Treasury, however, were reported to have been very reluctant to give any sort of recognition to the

urban regeneration benefits predicted until *after* the project was completed. And while Canary Wharf and LUL did some pioneering work in this area for the JLE, overall it again appears that the UK has *not* successfully developed methodologies that adequately value agglomeration externalities associated with major infrastructure projects.

**Figure 3.7: JLE interviewee responses to the question - "Were the appraisal and travel demand models used to forecast potential revenues fundamentally flawed?"**

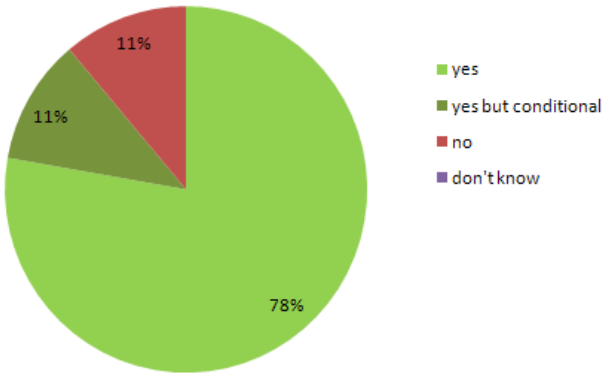



### 3.3.1.29 Political will and influence

90% of the JLE respondents felt politicians had a significant impact on the planning, appraisal an delivery of the project (see Figure 3.8). As in the case of the CTRL, there is again a wide ranging perception amongst interviewees that political will/imperative/pragmatism generally overrides outputs from techno-rational appraisal methodologies. In the case of JLE, it was generally felt by respondents that the political perception *ultimately* proved correct, with considerable credit given to the private sector contributions as swaying the balance in favour of the project.

JLE interviewees stated that the project's key decision-makers did not ultimately rely on the modelling exercises commissioned as a basis of going ahead. Instead, they once again argued that what was more were (inter alia) political influence, the impact of the pursuit of a political vision of how private finance should be employed in major infrastructure development,. The main use of CBA was by consultant transport engineers who sought to promote alternative projects employing state of the art appraisal methodologies which ultimately contributed to the decision not to go ahead with the Waterloo to Greenwich Line.

**Figure 3.8: JLE interviewee responses to the question - "Is there any evidence of events where politicians have had a significant impact on the planning, appraisal and delivery of the project over and above the apparent economic rationalism approach? "**



**ORH#2 - The new emerging international and local agenda related to vision(s) of sustainable development is multi-dimensional and goes beyond notions of environmental sustainability, as critical as this may be, in that it also concerns inter-related concepts of economic sustainability, social sustainability and institutional sustainability.**

### 3.3.1.30 Sustainable development visions and MUTPs

As in the case of the CTRL, JLE interviewees highlighted the need for a more operational definition of sustainability, and also a better mix of appraisal which also covered spatial and local community concerns. The matter of who 'manages' the project appraisal process was raised by a respondent who suggested that the lack of development of a set of holistic sustainability challenges and related criteria for MUTP planning, appraisal and delivery may be in part be due to the lack of a strategic body to take the lead in operationalising sustainability.

Several interviewees suggested that however the concept is operationalised, it must strike a balance between local, global and intermediate issues.

### 3.3.1.31 MUTPs, regeneration and sustainable development visions

All respondents felt SDVs should play a major part in the planning, appraisal and delivery of MUTPs (see Figure 3.9). Notwithstanding this, it was agreed that SDVs did *not* play a significant role in the planning, appraisal or delivery of the JLE (see Figure 3.10). Such visions offer a wider framework for MUTP appraisal, but because they are frequently unclearly defined, they can lead to both confusion and inconsistent application. 70% of respondents felt SDVs offer a *better* framework for judging the success of MUTPs (see Figure 3.11) – but that that there is still lack of clarity as to their content.

**Figure 3.9: JLE interviewee responses to the question - "Do you consider that 'sustainability' considerations should play a major part in the planning and delivery of MUTPs?"**

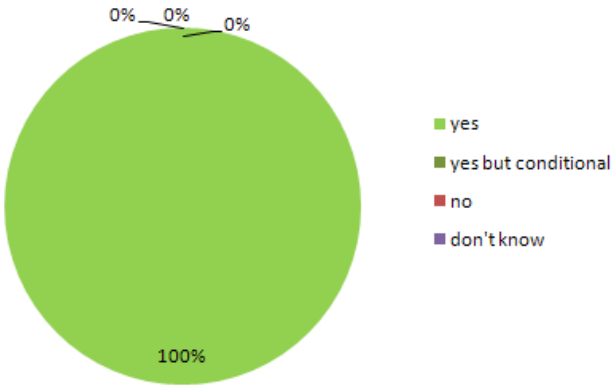



**Figure 3.10: JLE interviewee responses to the question - "Did 'sustainability' considerations play a major part in the planning and delivery processes of the JLE?"**

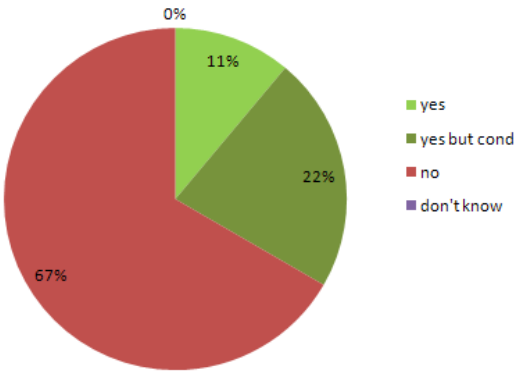


**Figure 3.11: JLE interviewee responses to the question - "Do new/emerging visions of sustainable development offer a better framework for judging success?"**

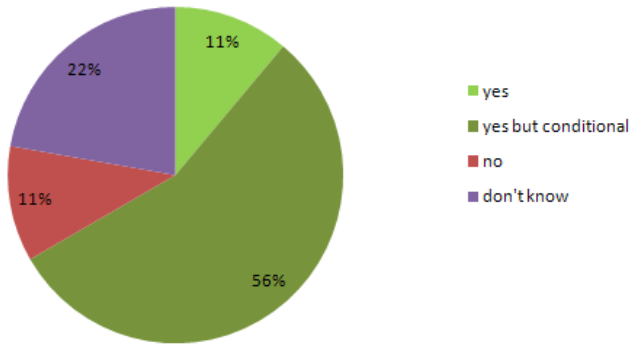
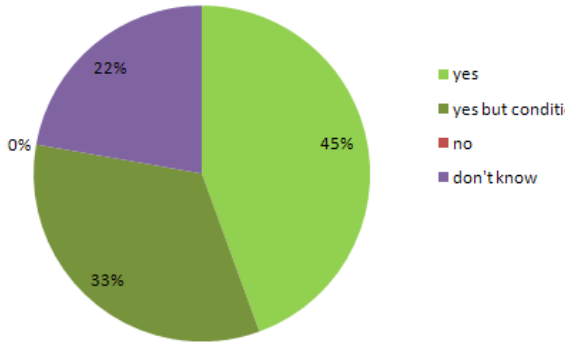



**Figure 3.12: JLE interviewee responses to the question - "Do you consider that it is possible to introduce 'retrofit' strategies that would enable MUTPs in general?"**




## 3.4 Project findings – The 4 Tests: Jubilee Line Extension (JLE)

### 3.4.1 Test 1 - Project objectives

#### 3.4.1.1 Stated objectives

The principle objectives of the JLE as defined by London Regional Transport (LRT), Transport for London (TfL), Canary Wharf (CW) and the JLE (project team) are shown in Table 3.1, together with a summary evaluation of achievements.

**Table 3.1: JLE project objectives and achievements**

| Project Objectives | Project Achievements |
|---|---|
| Enhancing the performance of London's transport system as a whole through inter-connections with other lines and bus services. | Achieved – JLE increased inter-connections at key strategic stations at London Bridge, Waterloo and Stratford. |
| Increasing the number of underground stations south of the river Thames and east of Waterloo. | Achieved by the New Stations created at Southwark, Bermondsey, Canada water and North Greenwich |
| Providing a direct link from the West End, and Waterloo and London Bridge main line stations to Docklands. | Achieved – the JLE provides a direct link from Green Park to Canary Wharf |
| Improving connections from Waterloo and London Bridge to the West End. | Achieved - anecdotal evidence records significant time savings. |
| Relieving rail congestion on the Waterloo & City line, the DLR and Northern line and at Bank, London Bridge, Waterloo and Embankment stations. | Achieved. Anecdotal evidence records the DLR as struggling with demand prior to the opening of the JLE and the Central Line suffering from severe congestion. The bank station was also heavily congested before the |

| | |
|---|---|
| | introduction of the second line at Bank |
| Relieving road congestion, particularly in the east-west corridor south of the Thames and in east London. | Partially achieved - increase in car traffic due to Canary Wharf has been mitigated in part due to the JLE. Much of the projected car parking provisions for Canary Wharf have subsequently been scaled down. No evidence to suggest reduced congestion in East London |
| Improving accessibility over a wide sector of east and south London where the river had long been a barrier to ease of movement. | Achieved - 3 new river crossings. |
| Completing and making fuller use if the Jubilee Line so as to use its capacity in a balanced and efficient way. | Achieved - usage of the JLE in both directions is less dominated by rush hour peaks. |
| Improve safety standards. | Achieved - JLE set new standards of safety for the London underground. The platform level safety barriers are among the most notable. |
| Increased step-free access to the London Underground system. | Achieved – the JLE extension alone features a large percentage of lifts and escalators on the entire underground network. Much effort was made to provide fireproof evacuation lifts from the station platform level. |
| Increased accessibility to jobs and services from East and South-east London. | Achieved – JLE has allowed access to Canary Wharf and its significant levels of new jobs (Phase 2 development) within one change of train. |
| Enhancing transport for tourism and leisure. | Unknown - no information available. |
| Promoting higher density housing. | Achieved as a number of high rise residential developments have accompanied Canary Wharf phase 2 and as part of developments at the stations south of the river. |
| Project to be delivered on time and on budget and to a standard that will be a matter of national pride and a symbol of British excellence. | Not achieved - the project was both late and over budget. |

**Cost overruns**

A number of explanations for the cost and time overruns have been put forward - these are dealt with in more detail below (see Test 3). The following is a list highlighting contributory factors commonly cited by stakeholders:

- economic conditions led to an 18-month delay in the project following the bankruptcy of Canary Wharf – the initial JLE costs were prepared during a financial downturn. Prices for labour and materials rose throughout the 18 months delay, and as contracts were renegotiated every 3 months, a number of prices rise were inevitable by 1993;
- the Heathrow tunnel collapse delayed the project by 6 months;

- new health and safety standards coming on line throughout the detailed design stage of the project added extra costs. This was especially of legislation introduced in 1994 which tightened and widened the process of gaining approval from HMRI;
- the Millennium Dome imposed a 'date certain' on the project, and an intense contractor effort was required to meet this deadline;
- problems with the signaling system added delays and costs – this was a failure of the E&M contractors to deliver, coupled with a failure of the management to be proactive;
- the client and project manager roles were not clearly delineated due to an 'in-house' management team;
- the JLE management was slow to adapt and refocus – e.g. they were slow to adjust from the challenges of management of heavy engineering to the challenges of E&M systems and fitting out early in 1996;
- variations to the scope of the work the contractors had originally tendered for (attributed to the incomplete design used for tendering contracts in 1991).

**Quality**

In regard to project technical specification/quality objectives, it would seem few detailed specifications were set at the time the JLE Bill was submitted in 1989. Most of the detailed specifications were made between 1989 and 1992 when the project gained Royal Assent and from 1992 to 1993 during the financial hiatus.

Technical specification was prone to 'creep', resulting in a number of ambitious technical specifications being added during the detailed planning process - some of which were completed successfully, others hailed as a complete disaster, prolonging the construction of the line, and ultimately forcing LUL to conduct a £800m+ signaling upgrade in 2010.

Project specifications changed once Royal Assent was granted and this critically impacted upon programme and specification requirements. The quality definitions had minimal clarity at the start of the project (there was no detailed client brief and defined standards were sparse). "By the middle of the project, quality took on a much higher profile as the client and operator sought changes to improve the end product and requirements for achieving compliance and handover were confirmed". (Mitchell, p313) The full client brief was finally available in 1995, to enable the client to sign off on the works and to support the measurement of the project benefits.

### 3.4.1.2 Evolving nature of JLE objectives - Impact on planning and delivery

Interviewees generally consider that the objectives for JLE changed and evolved over time in response to new and emerging contextual influences (for example client requirements on quality, and the impacts of new safety regulations), especially in the period prior to 1992 as the project transformed from a private sector initiative, with very narrow objectives principally to serve the interests of servicing real-estate (Proposal for Second Rail Line to Docklands undertaken by Canary Wharf 1988 and rejected by Government on the advice of LT) to a principally public sector project with a much wider set of objectives leading from the East London Rail Study (1989). The PHR and HLR responses indicate that opinions on the final project objectives are very much split between the public and private sector, despite LT and CW having worked very closely for nine months in order to prepare the London Underground Bill deposited in 1989. The private sector broadly sees some of LTs objectives concerning technology and architecture as wasteful, whilst public sector saw CWs objectives too narrow for a project of this type.

The JLE project planning process was exposed to high degrees of uncertainty, and was almost totally performed under high pressures from the dual forces of diverse political

agendas and roller coaster economic contexts, both of which had a strong influence on the development of project objectives. The preparatory work for the submission of the JLE bill was undertaken at high speed through a joint effort from Canary Wharf and LUL staff. This compressed timescale may not have been sufficient to address/accommodate the full complexity of the project and prepare for the JLE's ever-changing context. Critical decisions concerning tunnel diameter and standalone vs. network operation were made early on which many of the HLR interviews appear to regret. There is also evidence that contractors were not integrated into the design process at an early enough stage to ensure the designs for constructability.

Notwithstanding the above, some of HLR interviewees suggest that there were clear visions and objectives for JLE but:

- there were few commonly held objectives, most varied between different organizations, in particular between the public transport authorities and private promoters;
- the objectives and reasoning behind them were not clear to all stakeholders.
- objectives tended to suffer from scope creep (especially regarding quality), suggesting the objectives were not sufficiently defined early on in the project, or some critical factors were missing.

**Political Influence**

The JLE project was strongly influenced by politics throughout its lifecycle, from the chain of events leading to the concept of the line, to more direct influences during the planning and implementation stages. (The development of the Docklands has always been a highly politicized process, the context of which can be traced back almost 200 years to the first large scale docks in the area build by the West India Company). As a result politics has been highly influential in the formation of the projects overall objectives, both at the strategic and tactical level.

However, 60% of respondents to the HLR felt the project was victim of muddling through, in some parts due to a lack of clearly articulated objectives and vision: "all these projects need from their earliest days is a clear definition of their purpose, and that needs to become a business case - embryonic to start with - which is a physical document which records what the key stakeholders are wanting it to do."

One reason put forward by HLR respondents for the lack of clear vision and objectives at the start of the project may have been that the government were slow to realise the potential of the Docklands site as financial office space post the 'Big Bang', but were rather pulled along by the private sector, hence the government's JLE project objectives were not articulated at the start of the project, but manifested themselves as political pressure as the planning went along (and it became more apparent to politicians that the project was important). Other explanations (mainly from the private sector) suggest that there were clear vision statements and objectives articulated, but the project lacked the implementation skills during the implementation phase to satisfy these objectives concisely, and scope creep reigned – "So they had a huge, what I call, project implementation knowledge gap."

The key objective for the JLE (according to the East London Rail Study 1989) was to support the continuation of development in the Docklands. The development of East London relates to the Tory government's key policies: (i) "Industry, commerce and jobs," as set out in their 1979 Manifesto which was enacted after the parties re-election into power in 1979, and (ii) "Local government and inner cities" from the Tory parties 1987 Manifesto. The growth of the Docklands and subsequent demand for transport linking the Docklands was created by a series of events initiated by both public and private sector actors reacting to this policy combined with other contextual elements discussed latter in this document.

Some key decisions seen by respondents as political intervention which contributed directly to the success of the Docklands and the subsequent high demand for transport have been credited to Heseltine, for example:

- forming the vision for the Docklands as a regeneration area;
- forming the LDDC in 1981 with land ownership and formidable powers to encourage development within the Docklands;
- approving the DLR in 1984 " a toy town project but it was symptomatic of the economics of the time";
- approving the DLR extension to bank which was critical for CWs growth (opened 1991).

Another unwritten but critical political objective of the JLE was that it should include a financial contribution from a private sector beneficiary of the line. This objective derives again from the Tory policies of the day related to 'A framework for business and industry" (see the 1987 Tory Party Manifesto), which encourages the use of private sector investment where possible to aid the development of transportation requirements. The objective was created when the private sector (Canary Wharf) offered a contribution towards the delivery of their own proposal for a line between Waterloo and the Greenwich Peninsular (the Waterloo and Greenwich Railway, or the "Second Railway Line to the Docklands") and the government made this a stipulation for the go-ahead of the final JLE scheme. This objective was stringently adhered to throughout the early days of the JLE and is seen by many respondents as the key factor behind the project's 18 month moratorium between 1992 and 1993.

London Regional Transport (LRT) added a number of wider economic objectives to the Waterloo and Greenwich Line (which they recommended government to reject in 1988 due to its narrow private sector financial objectives), which led to its reincarnation as the JLE, on which implementation finally began in 1993. LRTs objectives added an increased emphasis on the line's ability to remove congestion from other areas of the London underground network, whilst increasing the regenerative benefits of the line – for example, bringing the underground to the South Bank for the first time with stations at Bermondsey, Canada Water and Southwark.

The government's announcement that the Dome would be sited at Greenwich led to one final objective for the JLE which had not been envisaged during the project's planning and early implementation phases – that it was to be complete in time for the Millennium Celebrations. Those respondents who supported the government's decision considered that the Dome gave the JLE a much-needed end date, which significantly reduced the risk of further delays in project completion. The proponents of this view tended to be within the private sector with real estate interests, who relied on the JLE to support their ambitious building plans. Those with a less favourable view of the Dome decision saw it as the principal reason why the JLE was de-specified to meet the 1999 construction deadline, whilst costs to the public purse were escalated considerably to deliver a sub-optimum solution – ultimately another £800million (est.) would be required to realize the original signaling specification in 2011 (est).

**Private sector influence**

The early vision for Canary Wharf was led by the private sector, namely the real estate companies of G. Ware Travelstead and then the Reichmann brothers, who were responding in part to the 1980s Conservative policy of docklands re-population. The early concept of Canary Wharf was not so much a government-led initiative to allow London to compete as a global financial sector, but a private sector initiative to take advantage of the Big Bang deregulation and lack of suitable office space in the City for the new open floor trading

offices which would be needed. The City's planning regulations were strict and forbade the type of office space required by financial institutions post-Big Bang, creating an opportunity to market such offices to the east.

Canary Wharf's principal objective was to support the growth of its development with a second railway line which would give the development access to a skilled labour force in the south east of England within one change of train from Canary Wharf.

**Regeneration**

Regeneration lay at the heart of the decision to go ahead with the JLE; respondents have identified this as the project's key aim. During the early days of Canary Wharf the government was slow to understand its strategic importance in helping London to become a global financial centre. "I think the Jubilee Line was more about simply being necessary to support the growth of this place because it was very clear that the Docklands Light Railway could never do it. So it does go back to that issue about infrastructure and urban development and what should come first." The government of the day saw the CW development as vital for the regeneration of the Docklands and though the competition to the city, spurred the redevelopment of the financial sectors outdated facilities in the city. This large expansion and rejuvenation of financial office space within the City and Docklands led to London's success as a financial player on the world stage. Suggesting the JLE was approved to allow the Docklands to complete with Frankfurt and Paris "is like an ex-post-facto justification to me."

**Sustainable development and retrofitting**

Whilst the planning and appraisal of JLE effectively preceded current sustainable development visions and concerns it is nevertheless interesting to note that in the PHR and HLR interviews there was only very limited overt mention of the potential role of the project as a means to promote/support such visions. Sustainability issues were confined mainly to noise and vibration from the operation of the line, the removal of spoil from the tunnelling sites during construction, some community outreach on the projects impacts and the creation of new jobs.

Moreover, few PHR and HLR responses explicitly refer to the role of planning objectives and strategies in shaping (retrofitting) communities so as to enhance their relationship with the JLE and to implement sustainable development visions - e.g. in terms of integrated land use-transport planning approaches. The objective of opening up the Docklands was seen as a means to an end, and the opportunity to provide interchanges with the line was not taken by many of the boroughs. Whilst this was clearly not a 'mainstream' objective associated with the JLE it is nevertheless surprising that a more 'joined-up' approach to hub and infrastructure planning has not seemingly been adopted to date – there remains much to be done to this effect by local borough councils.

Drawing from the above analyses and observations of JLE developments a number of potential lessons can identified from the Test 1 exercise for future MUTPs. These are summarized below in Table 3.2 below.

**Table 3.2 : Test 1 lessons (Project Objectives, JLE)**

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| **Lesson #1:** Key stakeholders, project planning and delivery agents must take account of the high probability that new objectives will emerge over the course of the project planning, appraisal and delivery period as a result of changing contextual elements. These contextual elements may be internal or external to the project and will include emerging/changing stakeholder agendas. |

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|---|
| **Lesson #2:** Emergent objectives, although attributed to muddling-through and piecemeal decision making, may not be entirely negative as they can act to enhance the ultimate sustainability of a project by helping to focus the project according to current contexts. |
| **Lesson #3**: Early project objectives tend to be limited to a 'least cost' solution for upgrading existing facilities. This narrow view makes the project especially vulnerable to 'bolt on' objectives. |
| **Lesson #4:** Evolving objectives are also highly likely, as the project progresses through the planning and appraisal stages. This evolutionary process can be seen as a positive as it helps to shape the project to better suit its contextual influences. However there needs to be some form of accepted tolerance defined for each objective, to limit the chances of evolution turning into scope creep during the detailed design process. This may be achieved through more rigorous definition of objectives and their scenario- or stress-testing for robustness. |
| **Lesson #5**: The need for a clear, robust and consistent set of objectives up front: project objectives (including those associated with project and agency roles/functions and performance indicators) should be clearly set at the outset and fully disseminated to all stakeholders. However these upfront objectives should not be seen as a project straight-jacket. It should be understood that objectives may need to adapt in response to changing stakeholder agendas and other contextual influences, and new objectives may be added at a later date. |
| **Lesson #6**: In light of this, it is clear that all key stakeholders should be involved in setting project objectives - not merely consulted 'after the event'. |
| **Lesson #7**: MUTP objectives should reflect the degree of interaction they are anticipated/expected to have with the areas they traverse and impact upon, for example different phases of the project life cycle. |
| **Lesson #8**: Project objectives and associated impacts should be based upon clear policy statements where possible, thus recognising the use of MUTPs as agents of change. |
| **Lesson #9**: Wherever possible, MUTP objectives should differentiate between those objectives that are:<br>• core/essential, and represent the fundamental reason why the project is being implemented, and;<br>• those that represent perhaps less certain but nevertheless desirable project outcomes. |
| **Lesson #10**: Having such a categorisation will enable a fairer and more consistent approach to be adopted to project appraisal and evaluation. |
| **Lesson #11**: Project objectives should be capable of being operationalised in such a way as to be meaningful to all stakeholders. Currently there is confusion over the definition of 'sustainability' and its relationship to objectives. |
| **Lesson #12**: Projects like JLE that have wider objectives which suggest they are more a service than a commodity and have potentially far-reaching impacts (and are likely to result in a commitment of significant public sector resources) ought to be debated and scrutinised in such a way to make such objectives explicit |
| **Lesson #13**: MUTP objectives should recognize the difference between delivering a product/commodity and a service. MUTPs are often a commodity which delivers a service. An imbalance of objectives set out during the early planning phase, which do not take into account these fundamental distinctions during the definition of objectives, may inhibit subsequent stages of the project life cycle. The JLE was accused of forgetting it was delivering a railway for the transport of passengers. |

| |
|---|
| **Lesson #14**: Early cost, programme and quality data must be treated with caution - as should predictions about the beneficial nature of project impacts. Projects often arrive to the stage of bill deposition without being fully defined, and are subject to the contextual forces acting at the time of the formation of the act (e.g. availability of finance, or revisions to the Health and Safety Act), which could result in significant project changes, not least to project cost and programme. In order to avoid not overly raising expectations of MUTP outcomes, project data should be released:<br>• only when key route and other specification details have been effectively 'frozen' and are thus reasonably 'certain';<br>• only when accompanied by a suitable cautionary note regarding its (in)accuracy. |
| **Lesson #15**: When setting objectives regarding financing, funding and risk share, there is a need to ensure that an audit trail is established which is capable of tracking transactions that might otherwise become opaque as a result of so-called 'commercial sensitivity'. |
| **Lesson #16**: Project objectives should acknowledge that the benefits/costs and impacts associated with MUTPs are often very difficult to discern at the outset, only realised in the long-term, and often unexpected. |
| **Lesson #17**: Objectives for MUTPs should provide for the establishment of measurements and systems/processes that enable clear and transparent appraisal and post-project evaluation of performance on a consistent and accurate basis. |
| **Lesson #18**: There is a balance to be made between the ratio of time and investment made during the planning/appraisal and implementation stages. A compressed planning stage can force the project to make high impact decisions without fully exploring the benefits of options with all necessary stake holders. Plans are often unfinished before they are submitted for contract, causing cause confusion and uncertainty during the implementation phase. |

### 3.4.2 Test 2 – Sustainable development visions and challenges

#### 3.4.2.1 Perceptions of SDVs as frameworks for MUTP planning, appraisal and delivery

Many interviewee comments focused on the general question of whether sustainability concerns offer a useful and practical basis on which to appraise projects such as JLE. 80% of respondents felt SDVs offer a better framework for judging the success of MUTPs – but that that there is still much work to be done in turning SDVs into a meaningful framework that can influence day-to-day decision-making in project planning and appraisal. Their responses highlighted a need for an operational definition of sustainability, and also a balanced mix of criteria to be included in any appraisal (for example considering the spatial scope of the appraisal: not just local community impacts). The matter of who manages the appraisal was raised, with a suggestion that the lack of development of holistic sustainability challenges and related criteria for planning and appraisal may be in part due to the lack of a strategic body to take the lead in operationalising sustainability.

With regard to JLE, responses suggest few such visions were developed into an applicable form when the JLE was conceived, planned and appraised:

- 40% of respondents stated sustainability considerations post-dated the planning for the project: “not with the JLE but they have (been important) on every project I've done since in the UK.” Any SDVs incorporated into the JLE project were implicit rather than explicit, such as reducing the percentage of car trips to Canary Wharf from 40% to 6%;
- the JLE might have been a turning point for sustainability: “at the time the Jubilee Line was done, the Jubilee Line was actually subject to the very first environmental

assessment that was ever done on railways in this country according to the European rules";

- SDVs are seen as *weak and/or unclear*, especially concerning the priority between global and local, short term and long term making practical application thereof almost impossible in the context of major projects. The existence of SDVs is consequently seen as rhetoric by some interviewees;
- positive aspects of 'sustainability' are here seen mainly in terms of the delivery of development and regeneration around the hub stations, principally the South Bank stations, the Greenwich Peninsular and Canary Wharf.

### 3.4.2.2 Sustainability principles

**Maximise re-use of brownfield sites in existing urban areas (particularly housing)**

From the early 1990s onwards JLE was positioned as a significant catalyst for the regeneration of the Docklands, the South Bank, and East London as a whole. Since the former Docklands area, and various sites along the South Bank, have subsequently attracted very significant investment in development which has gone a long way to regenerate the areas in which they are located, (especially in areas surrounding Canary Wharf), it can be concluded that JLE has functioned as an important catalyst.

**Land use-transport integration**

The quality of integration between land use and transportation systems varies along the line. Some anecdotal evidence suggests the JLE design team didn't integrate enough with local boroughs (who in turn lacked the skills to make the most of linkages between the new stations and the surrounding areas) leading to many lost opportunities. Overall, three areas with strong land use/transportation strategies which made the most of the JLE impact for interchange and integration were:

- land use and development policies for Canary Wharf (London Docklands Transport – "The Growing Network for the 1990s", published by the LDDC) shows a strategic integrated transport plan for the Docklands;
- Canning Town station is an interchange between DLR, Bus service and the JLE. "The new station at Canning Town was one of the most difficult to get right. The end result , however, was worth waiting for as the new rail and bus interchange is proving a spur to regeneration and making travel by public transport in this part of the capital a lot easier." (Mitchell, 2003: 180);
- Stratford Station: "The improvement of the transport in the Stratford station has been realised. Aspirations to improve access to the major rail station at Stratford have been around for at least 20 years – the claustrophobic and circuitous subways linking the station to the bus station and town centre have characterised the station for many years. With the London Borough of Newham taking the lead, the extension has finally provided the impetus to rebuild the station."

### 3.4.2.3 Environmental sustainability principles

The JLE was one of the first mega-projects to carry out an environmental assessment. According to the recommendation of the Joint Select Committee's Report on Private Bill Procedure (Para. 80), environmental assessments should be required for private bills (Mitchell, 2003: 350). The Environmental Statement (ES) of the JLE was commissioned to Environmental Resources Limited by London Underground Limited (LUL) and published in March 1990. The main aims of this document were twofold (ibid: 57):

- to identify the nature and scale of the environmental effects likely to result;

- to identify measures that should be taken to minimise those effects and monitor their future levels.

Both impacts during construction and of its operation after completion were considered in this Environmental Statement. Special issues examined were noise, dust, vibration, effects on groundwater, disposal of tunnel seepage and site drainage, loss of property, temporary loss of amenity, impacts from the transport of spoil and materials, disposal of contaminated spoil, noise and vibration from operations, visual impacts of the completed scheme and cultural and ecological impacts.

**Project environmental policy and the Environmental Management System (EMS)**

The Project Environmental Policy and the Environmental Management System (EMS) were adopted to minimise environmental effects. In order to achieve the goal, a small unit within the project team was dedicated to environmental matters. Mitchell details the sites which were deemed to be at risk of environmental contamination. The key principles of the environmental policy, according to Mitchell (2003: 351) were to:

- meet legislative requirements;
- cause minimum disturbance to the community;
- effectively manage environmental issues during all phases of the design, construction and operation of the extension.

The EMS, based on British Standard 7750, offered a comprehensive management structure to confirm that the environmental threats were properly addressed. However, Scott Wilson, who carried out the Environmental Impact Baseline Study on behalf of the University of Westminster, admitted that the list of sites deemed to be at risk of environmental contamination was itself "of limited use as it is purely a prediction of what could have been expected to be encountered during construction." (University of Westminster, WP36: 33). Ideally, as Scott Wilson argue, a large-scale environmental impact assessment involving the collation of project and contractor data would be necessary to gain a full picture of environmental contamination caused by the JLE.

**Key environmental outcomes**

The impact of construction works on the Thames itself also had to be considered. It was concluded that work sites close to the Thames would not impinge directly on mud used by birds for feeding, and the indirect effects (e.g. noise disturbance) would only impinge on areas that were very small compared to the total habitat of this kind available in the locality. No known wader or wildfowl roosts of importance were recorded in the immediate vicinity of the proposed Extension, and significant impacts on birds associated with the River Thames were therefore not expected. Several other areas of formal green space are also affected, but they have little claim to nature conservation interest and were not considered further by Scott Wilson – e.g. Parliament Square, Jubilee Gardens, Old Jamaica Road and Southwark Park. Over 200 trees were either preserved or removed during construction phase and subsequently replanted." (Mitchell, 2003: 352).

A survey identified around 100 buildings of special architectural and historical interest affected by the proposed extension. Project effects on neighbouring buildings were to be minimised through:

- choice of alignment;
- use of special tunnelling techniques;
- uninterrupted tunnelling, avoidance of overcutting and rapid grouting;
- special measures – e.g. underpinning to protect sensitive buildings;
- continuous monitoring.

**Sustainable consumption**

Composite materials were used for the conductor rails (a first for the underground) to improve conductivity and energy efficiency. The tube overall consumed 1,163 Gigawatt hours of electricity, of which 17% was renewable. Canary Wharf Station was designed to use minimal signage with an energy efficiency objective of no air conditioning

### 3.4.2.4 Economic sustainability principles

**Encourage economic development compatible with environmental objectives**

Linking JLE with associated real estate at Canary Wharf, North Greenwich, Canada Water, Bermondsey and Stratford has resulted in a significant inflow of private sector capital, creating new jobs and floor space devoted to economic (commercial) uses.

More broadly, JLE was positioned as a very significant means to stimulate economic development in the capital and thereby enhance/sustain London's position as the pre-eminent financial centre.

Given that environmental matters were considered seriously at the route option appraisal stage (if not at the initial planning stage), it may be argued that economic growth/development was encouraged to be broadly compatible with environmental objectives.

**Adequate public investment**

JLE was consistently positioned as a public sector-financed project with contributions from the private sector. The financing of the project came into doubt on a number of occasions during the planning and evaluation stages. The most significant event was when the project was stopped during an 18 month moratorium, as the government sought a private financial contribution after the original contributor went bankrupt

**Speedier infrastructure decisions**

The project has been criticized for the long time from the depositation of the bill (1989) to the project receiving royal assent (1992) and go-ahead (1993). Notwithstanding this, HLR and PHR interviewees note the importance of letting projects evolve in response to changing contextual influences - a 'time to breathe'.

### 3.4.2.5 Social sustainability principles

The efforts to alleviate project impacts were not focused on social issues – inclusion of mitigation requirements into the JLE Bill dealt mainly with successful landscaping and restoration – little to do with social impacts. However, some of the principal objectives of the JLE were to improve social and economic conditions within the Docklands area. Although the project's 'official' CBA, as calculated in July 1992, was 0.95 (and so should not have gone ahead on the basis of this calculation alone), it was recognised that a number of wider social and economic benefits were incalculable and so the decision was taken to proceed

**Policies should seek to promote socially inclusive communities**

Some pivotal social events of East London pre-date the JLE project, such as the decline of London's Docklands which previously had a significant amount of employment in dock activity in relation to industry. That happened through the 60s, 70s and 80s leading up to the

final closure of the Royal Docks in the mid-80s. There was a very large area of London's former industrial heartland that was practically derelict and there were significant problems associated with it in terms of unemployment, social stress, etc. That created a situation in terms of those wishing to prioritise the regeneration agenda.

Development proposals south of the river were criticised by some interviewees as effectively displacing local communities and businesses in favour of major new commercial development.

**Access to housing, jobs and other facilities**

The JLE presented a unique opportunity to measure the effects of a major public transport project in London on the wider economy (Westminster University, WP58: 1). The project was projected to employ around 5,000 people at the peak of construction activity, generating over 15,000 person-years of direct labour. Allowing for the effects on the rest of the economy the peak direct impact on employment was estimated at over 14,000 jobs, with almost 50,000 person-years of employment to be created (Willis, 1997: 80).

The wider effects of the JLE were originally estimated at 91,000 jobs in areas of the Isle of Dogs, Leamouth and Poplar (Willis, 1997: 82), but were subsequently revised upwards to 150,000 jobs once the full extent of the plans to redevelop Canary Wharf became known (Willis,1997: 82).

Despite the JLE's success in creating jobs, the scheme has not significantly reduced unemployment in the catchment areas studied. However, it may take considerably more time before the full effects of the JLE materialise, with residents entering the labour market in the future either having the appropriate skills to take advantage of the financial and business services jobs attracted to the corridor, or by using the JLE to reach employment centres elsewhere in London.

**Need for improved public participation**

The JLE attracted a relatively small number of objections for such a large project. This limited number of objections may have been due to the majority of the JLE infrastructure being located underground; while the land directly above the line haul was for the most part existing railway corridors.

### 3.4.2.6 Institutional sustainability principles

The organisational arrangements associated with the preparation, implementation and operation of the JLE involved a large number of public and private sector interests. However, the complexity of the project was probably an order or magnitude less than the CTRL. There was criticism that the interaction of the stakeholder groups/bodies was not ideal for the effective response to different challenges at different stages in its evolution.

PHR and HLR interviewees suggested the following institutional sustainability factors:

- the risk averse culture prevalent amongst civil servants, and their self-perceived role as protectors of their political masters, was seen to mitigate against their ability to take a long-term view of infrastructure;
- the high staff turnover in all agencies associated with the project was seen as detrimental, whilst (conversely) continuity in key positions enables consistent and speedy decision-making;
- poor cross-functional sharing of appropriate information/data and ideas (silos) was identified both within and between organisations and networks;

- the project was impacted by too many institutions with unclear remits and responsibilities, resulting in a lack of focus and real purpose.

Drawing from the above analyses and observations of JLE developments a number of potential lessons can identified from the Test 1 exercise for future MUTPs. These are summarized below in Table 3.3 below.

**Table 3.3: Test 2 lessons (Sustainable Development Visions, JLE)**

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| **Lesson #1**: Sustainable development visions offer a wider framework for appraisal, but they are currently under-defined leading to confusion and inconsistent application: 80% of respondents felt SDVs offer a better framework for judging the success of MUTPs – but that that there is still much work to be done in turning SDVs into a meaningful framework that can influence day-to-day decision-making in project planning and appraisal. |
| **Lesson #2**: The definition of sustainability needs to find a balance between local, global and intermediate issues: the responses highlighted a need for an operational definition of sustainability, and also a balanced mix of criteria to be included in any appraisal (for example, considering the spatial scope of the appraisal, not just local community impacts) |
| **Lesson #3**: Professional silos represent effective barriers to the introduction of a more holistic view of SDVs as a framework for project planning and delivery. For the JLE this problem is found more in the public than private sector. |
| **Lesson #4**: Greater transparency in the MUTP appraisal and decision making process would help to breakdown/prevent institutional and professional silos from forming. |
| **Lesson #5**: MUTPs can catalyze regeneration: the JLE project has been a successful catalyst of regeneration principally the South Bank stations, the Greenwich Peninsular and Canary Wharf. |
| **Lesson #6**: MUTPs are not automatically integrated into their immediate contexts which can limit their impact. The degree to which an MUTP can catalyze regeneration in an area could be enhanced by the provision of adequate interchanges and feeder routes. These features are not necessarily included in MUTP project plans, but are left for local authorities depending upon their level of initiative. |
| **Lesson #7**: Rail investment will not itself spark a substantial process of economic development, but it can be used as an instrument to exploit development potential. The JLE made such an impact on regeneration as the contextual factor were favourable. The project was backed by government policies related to regeneration, and significant private sector investment in an area which worked to create a centre of gravity in east London and attract other developers |
| **Lesson #8**: There can be a lack of clarity on the part of stakeholders as to how MUTPs and the development/regeneration projects they spawn might be planned and/or retrofitted so as to achieve key sustainability objectives. Some stakeholders are more proficient than others. |
| **Lesson #9**: Any form of sustainability appraisal (EIAs etc) should be a key part of the initial project conception, planning and appraisal process - i.e.:<br>• to determine the need and justification for the project<br>• to determine alignments, associated developments and technical specifications etc. that will enhance the sustainability profile of the project and the areas on which it impacts |
| **Lesson #10**: MUTPs that spawn significant new suburban development may not be a positive influence on social cohesion - though community building could never be justifiably a realistic objective for MUTPs. |
| **Lesson #11:** Full community engagement from the outset is seen as a means to mitigate |

downstream problems associated with stakeholder relations. However stakeholder engagement must be a continuous process

### 3.4.3 Test 3 – Treatment of RUCC

#### 3.4.3.1 Theme 1: Importance of context

**Understanding of context is critical**

The JLE responded to changing contextual influences with varying degrees of success. Respondents agreed that contexts were of critical importance, but few respondents made the distinction between gaining a deep understanding of critical contexts on which to base decision making (active context awareness), and simply reacting to contexts as they impacted on the project (passive context awareness). For example one stakeholder group (O&Y) in particular stressed the importance of understanding political contexts as a basis for effective decision making during the development of their Second Railway Line to the Docklands proposal, without which they would not have succeeded.

More recently Bechtel have realized the importance of project contexts and their potential impacts on project risk levels. Bechtel regularly performs a type of context appraisal when deciding which projects to take on. Bechtel attribute this change to the way projects are now structured: “didn't used to do (in the past) because we expected to have the protection of a client … Things (incidentally) are much more exposed now.”

**Contextual matters of greatest significance**

The two most important contexts identified by stakeholders were political (50%) and economic (30%).

The most significant generic contextual elements for MUTPs which need to be clearly understood by project planners and delivery agents are perceived to be (PHR and HLR):

- the political context, which represents a particularly important influence on MUTP planning and delivery lifecycle;
- the financial/economic context (both the financial arrangements made for the project and the external financial environment had significant impacts, particularly during the delivery of the JLE);
- stakeholder perspectives/motives/agendas (which need to be acknowledged as subject to change).

The more specific contextual elements that are seen to have impacted on JLE include (PHR and HLR):

- the Millennium Dome - effectively served to bring forward the rolling completion date to December 1999;
- the economic instability in 1992. The bankruptcy of Olympia York and Canary Wharf led to an 18 month moratorium on the project. There has been some suggestion that this was a stalling mechanism used by government at a time of economic stress;
- government policy agenda during the projects planning stage - JLE was seen as a means to (variously): (i) support the development of the London Docklands, and perhaps London's financial position as a global player; (ii) show significant private sector contribution could be secured from beneficiaries to develop projects;
- stakeholder agenda mis-match – different stakeholders pulled the line in different directions. Opinions on the ultimate success of the project vary depending upon stakeholder group;

- technology and engineering;
- impacts felt from an engineering disaster on another UK tunnelling project;
- lessons from the DLR enabled Canary Wharf to exert significant pressure on London Underground concerning the delivery of a defined level of service;
- lobbying - e.g. both in allowing the project to go ahead and lobbying for domestic stations on the south bank as a means to foster regeneration and growth;
- politics and champions - the arrival and influence of (especially) key political champions who both moulded and made use of prevailing contexts to further particular agendas (e.g. Heseltine's 'vision' for East London and the formation of the LDDC, and DLR Line 1);
- the Kings Cross fire and the resulting focus on train safety regulations;
- the Big Bang and bank deregulation;
- the Labour government's policies and strategies and their preference for stage-managing their popularity over taking tough decisions : 'I feel as if I'm carrying a Ming vase across a very slippery floor - I'm terrified I'm the one who's going to drop it." It was a metaphor first used by Roy Jenkins to describe Tony Blair in the run-up to the 1997 election.

HLR JLE responses identify a number of key characteristics associated with MUTPs which are themselves contextual elements and need to be taken into account in the decision making process if a successful project is to be delivered:

- they require a high level of cost/capital investment (most frequently mentioned characteristic of MUTPs);
- they are likely to be of national/regional significance (e.g. in terms of impacts, purposes and/or meeting strategic needs)
- they are likely to be drivers/agents of change (in terms of social/economic change or as catalysts for development);
- they are large-scale (not clearly defined);
- they require political/parliamentary approval and/or public inquiry;
- they are likely to fulfill multiple roles and have multiple types of impact;
- they are likely to be complex as a result of lengthy planning and delivery periods, complex construction characteristics, etc.

**Political influence/support as a key contextual element**

Political influence/support is the critical contextual factor in all aspects of MUTP planning and delivery (beyond the conception of the project) and a clear pre-requisite to the successful launch of a project (HLR and PHR).

Political patronage in the form of a project champion is also seen as a key asset for MUTP project sponsors, planners and delivery agents. Champions fulfill and number of important roles as foci – including clarifying/setting/adjusting project objectives, establishing project credibility and mandate for project teams, consensus building and networking. The role of the project champion is seen as most important in the early stages of the project.

Political support throughout the project lifecycle was also seen as important. Project champions must be accompanied by project guardians who can keep the project going during times of adversity. For example key stakeholders identified as invaluable during the project implementation stage of JLE was the support from the Blair government and the role Prescott as project guardian in particular.

**Credible financial support as a key contextual element**

Respondents also highlighted the importance for credible financial backing as the critical pre-requisite for political support early on in the project life cycle. It is suggested politicians don't want to back losers, and credible financial backing acts to increase their certainty in a project

**Perception of context**

HLR responses suggest there are different professional perspectives on the influence/importance of context – private sector stakeholders are seen as more contextually aware, or aware that they are unaware, and hence seek advice from the appropriate sources early in the project life cycle. In the early days of planning for the JLE public sector stakeholders by contrast seemed slower to reach an understanding of the prevailing contexts, in the case of LUL tending to support existing pet projects, justified by narrow cost benefit analysis, in the face of changing external contextual factors. During the early days of JLE, public sectors contextual awareness seems to be narrowly focused.

During the delivery of the JLE, managers may have been aware (or hyper aware) of the political contexts surrounding the project and it has been suggested this awareness may have limited the courses of action they were prepared to take as they feared the political fallout from a decision more than the internal project problems caused by not making the decision.

40% of HLR interviewees supported the notion that there occur moments in time (contexts) when circumstances are ripe for decision-makers to 'seize the moment' – this lends support to the belief that successful project planners and delivery agents are indeed very aware of both 'context' and its changing nature, albeit in an instinctual rather than a formal way. However it should be noted the concept of 'success' is stakeholder-specific. Concerning the JLE, one man's triumph was another man's disaster. Many public sector objectives, seen as highly successful by the majority of stakeholders, were seen as wasteful by some private sector stakeholders.

**Context and the project lifecycle**

The 'project delivery phase' was fraught with contextual impacts which were impossible for project managers and stakeholders to ignore. There is no evidence to suggest the project became frozen with project managers being less contextually sensitive.

MUTP planning phase is both highly vulnerable to, and a large source of RUC. The appraisal and planning stage of the project is usually when the project is most vulnerable to external and internal RUC. Furthermore the impacts of decisions made or not made during the planning stage manifest themselves in the delivery and operations phases of the project.

**RUC and the 21st Century as context for MUTP planning and delivery**

HLR respondents felt traditional CBA has a role to play (and associated narrow contextual outlook) in future appraisals. If a project cannot show a favourable result in terms of traditional appraisal and evaluation it will get no-where. This backbone of traditional appraisal should then be supplemented by sustainability criteria (although there is a divide whether these sustainable criteria should include unquantifiable).

Temporal Contexts: NPV rates and project lifespan used in CBA should be more realistic "if you assume a 100-year life (for a project) rather than whatever the life is, you get a (much) better return".

Wider contexts: HLR responses suggestion there is a significant lack of holistic sustainability challenges and related criteria for planning and appraisal in the c21st. This may be impart due to the lack of a strategic body to take the lead in operationalising sustainability.

Warning against too many contexts: "I have a concern that we can introduce so many criteria that we make the process of agreeing on a project yet more difficult and experience tells us it's hard enough already. Should these criteria be viewed, yes, but I was reminded of a discussion I had with a senior politician some time ago after I came back from China where I said I think we have lost our way, in China there's still a view of a greater common good where we seem to be obsessed by the rights of the individual. "

Appropriate responses to increased RUC in the 21st Century are seen to include:

- enhanced competencies in the planning and delivery of MUTPs - especially, the need for a broader holistic view of project planning and delivery processes and enhanced political/tactical awareness of the influences on such processes;
- to help break down barriers and reduce in-fighting between departments responsible for project planning/implementation
- the need to understand better the influences associated with prevailing and emerging future contexts on the planning and delivery process for MUTPs;
- the need to identify and anticipate through appropriate strategies the contextual changes that may be brought about by MUTPs;
- the need for planning and implementation strategies and programmes that are robust but also capable of ready adaptation in the face of changing needs/demands and contextual items. The use of scenario building and testing is seen as a key means to seek to discern future contextual influences on project planning and delivery;
- the need for greater stakeholder involvement in the planning and delivery process, including the identification of prevailing and emerging/changing stakeholder motives and agendas and more effective consensus building.

**Mega events and 'Big Ideas' as contextual items**

The Millennium Dome and Celebrations (£700m) was seen to have a critical contextual influence on the JLE which was both beneficial and problematic in terms of RUC:

- reduced short term uncertainty for Canary Wharf and other developers/land owners as government made a strong commitment to finish the line in time for celebrations
- Increased long term uncertainty and overcrowding risk as line specification was degraded, thus limiting eventual capacity to Canary Wharf and Docklands (although Canary Wharf hedged against this with a financial penalty clause linked to line capacity)
- fixed deadlines associated with Millenniums 'focused the mind' and help reduce risk - enable broad consensus on the need for/commitment to action to be reached quickly and for related infrastructure to be fast-tracked in light of such matters as national/political prestige.

The Big Bang (deregulation within the financing sector in 1986) three years before the JLE Bill was submitted to parliament had a big impact Canary Wharf, thus fuelled the demand for the JLE project.

The Kings Cross fire and Clapham rail disaster (1986 and 1987) severely impacted safety legislation throughout the planning and early delivery stages of the JLE, resulting the project being in a perpetual state of 'catch up'.

The recession and financial collapse of 1992 was a mega event which impacted heavily on the JLE as an 18 month moratorium was required to restructure the private sector finance.

**JLE as an agent of change**

In the light of the positioning of JLE as a key element in the regeneration, growth and restructuring initiatives of the London Docklands in the early 1990s, it may be concluded that the project was indeed seen as a very significant agent of (contextual) change - this is supported by numerous HLR interviewees.

While stakeholders suggest that the relationship between JLE and these wider initiatives has not been fully exploited in terms of coherent land use-transport strategies the JLE project has had a beneficial impact on the encouragement of investment in (particularly) regeneration. The project supported Phase 2 of the Canary Wharf development (expansion from 15,000 workers to 63,000 between 1999 to 2004), the regeneration of the South Bank including the Tate Modern Gallery, the Greenwich Peninsular and the Millennium Dome.

The success of Canary Wharf forced City planners to relax regulations and allow the City to modernize, thus facilitating a financial regeneration within the heart of London. However, stakeholders also suggest that the full benefits of the project in terms of regeneration and growth will only materialise in the longer term, for example the work going at Canning Town Regeneration etc.

From the pre-hypothesis research, there was some (minor) evidence to suggest that JLE's contribution to the Docklands vision was seen as a means to promote political agendas by (for example) encouraging the regeneration of areas controlled by the chief opposition party at the time (mainly in East London).

The institutional context into which the project was placed has been highlighted by a number of respondents; the establishment of an institutional framework (LDDC) capable of dealing with the key contextual elements (especially private sector stakeholder contexts) so as to maximise the potential benefits of JLE to the Docklands was a critical force in the success of the JLE. However the formation of the LDDC, and therefore a single head in charge of regeneration over 5 London boroughs, caused friction and resentment amongst the boroughs, and perhaps formed barriers to potential co-operation over the development of adequate interchange facilities for the project

**Contextual forces influence pivotal decisions**

JLE responded to changing contextual influences in terms of:

- Governments/LRT Decision not to go ahead with Waterloo to Greenwich Railway proposal by Canary Wharf;
- Government's Decision to go ahead with the East London Rail Study by independent consultant and rush planning of line (to avoid future proposals by Canary Wharf?);
- 1992 recession and government decision for requirement of private sector contribution;
- LUL's Decision to make JLE a technological and architectural showcase;
- Tunnel collapse at Heathrow;
- Introduction of new Health and Safety Regulations;
- Government decision to site millennium dome at Greenwich;
- Governments decision to replace JLE delivery team due to nervousness over the failure of Millennium Celebrations impact on government popularity;
- Subsequent de-specification of the line triggering O&Y delivery clauses to pay back £100m, (more than ½ of original private sector payment) forcing LUL to start upgrade work in 2003 on a £300m project on both the JL and NL (cost now at £800m).

As above, planning and delivery agents need to possess acute awareness of the importance of context throughout the project lifecycle

**Context-monitoring**

There was little evidence to suggest that there were explicit mechanisms and procedures for identifying and monitoring contextual influences.

There are many references to relationship and consensus building on the part of key decision-makers during the project planning stage, and project managers becoming trapped by context in the delivery stage: these references suggests a considerable degree of 'informal' context awareness and scanning.

Thus, it would seem that since the project clearly responded to manifold contextual changes as it evolved over time, context awareness and resultant action occurred in a somewhat ad hoc manner - i.e. contextual changes occurred and it became self-evident that the project would then have to also change in some way to address the new context that emerged.

In light of this it may be postulated that there was little attempt to anticipate contextual change through the use of explicit and formal context scanning mechanisms.

### 3.4.3.2 Theme 2: Strategy

**JLE as an evolving project - relationship with clarity of goals, objectives and appraisal**

60% of PHR interviewees felt the JLE was prone to muddling through, and required a more clearly articulated set of objectives and visions. Interviewees note that JLE project objectives were essentially subject to considerable change as a result of emergent agendas from different stakeholder groups during the project planning and implementation phases.

However, the opinion on the clarity of goals tends to vary by stakeholder group. As one interviewee said: "I can't gainsay the fact that the result is splendid in my opinion. I think it's splendid. Now what I would say – if you have no strategy in your bones and no planning in your bones, it's hardly likely that you'll get it right off the seat of your pants, but given the right personal context of planning strategy etc grab every opportunity that presents itself because they don't come around very often and if someone rides into town saying I've got money to do this that and the other you think very very hard before you turn them down. And in at least 6 places along the way something might not have happened it would have broken the chain so muddling through in terms of sloppy thinking and sloppy decision making anathema, muddling through in terms of being alert to grab opportunities, you don't just do it because the opportunity is there but you do things whose opportunity you couldn't have created and you don't say this wasn't part of my plan so I'm not going o do it. Now that's a different definition of muddling through I appreciate that."

"I'm implying that it's the nearest thing to being entrepreneurial that exists in the public sector. Entrepreneurs do many things but one of the many things they do is grasp opportunities the trouble is all they want to make money."

HLR interviewees had the following observations reflect on the role of vision, strategy and objective setting:

- from the planner/transport planner perspective there was no vision early on with the first attempts to link the docklands with the central London although by the time of the East London rail study the projects visions and objectives had formed " In an ideal world, somebody would have said, let's build a mega office development or a mega

development on the Isle of Dogs and if we're going to do that what's the best way to serve it with transport schemes?";

- from the real estate perspective, CW had a very clear and concise vision for the planning of JLE as outlined in the Waterloo to Greenwich railway proposal, but it was not wholly shared with other JLE stakeholders. The CW vision was taken by LT and expanded so objectives would fit more closely with government, but LT only had 9 months to expand the objectives and plan the line, and this was seen as a muddle through with many suboptimal decisions made, although ending with a successful proposal for the line;
- one reason for the lack of clear vision and objectives may have been that the government were slow to realise the potential of the docklands site as financial office space, but were rather pulled along by the private sector, hence the government's JLE project objectives were not articulated at the start of the project, but manifested themselves as political pressure as the planning went along;
- responses also indicate a belief in the notion that the UK lacks the ability to take tough strategic decisions on infrastructure that require political support;
- the mix of strategy development and detailed planning is wrong "So it's the way the projects are planned and developed which I think is the core thing, and that if that is done properly there should not be delays ill thought-out. And one of the problems in what is done is that there is far too little attention given to what I'd call strategic planning, and far too much to apparently detailed, sophisticated planning. And I would certainly argue that if anybody is going to commit to a project of this nature, they have to do so on the basis of sound advice, but that does not mean that they need many years of planning, but they do have to be very clear about the purpose and the expectations and the risks and the uncertainties. In other words there has to be far more strategic thinking and far less slavish using of transport models and appraisal frameworks and so on."

Most of the interviewee observations suggest (for whatever reason) there was indeed no clearly thought out, all-embracing 'strategy' for JLE – it was more usually characterized by ad hoc decision-making in response to new and changing contextual elements.

**Would clearer vision/objectives have been beneficial?**

HLR interviewees noted that:

- some stakeholders felt clear vision statements and objectives articulated, but the project lacked skills during the implementation phase to satisfy these objectives concisely, and scope creep reigned "So they had a huge, what I call, project implementation knowledge gap.";
- becoming locked into the delivery of precisely defined objectives may be a bad thing as it is unrealistic to think a projects objectives can remain unchanged: "When you go into a large project, what you have to know is that everything is going to change, and you have to move with that change. If you find forces or whatever it is that just locks you into 'this is what you said you were going to do and now you have to do this'... if you're so stupid to have that happen to you, then you're …. you're done.";
- JLE was criticized for the inclusion of overly optimistic objectives from LUL regarding the use of untried and untested technology. Perhaps a more realistic set of objectives up front would have led to a more efficient and effective solution for the JLE.

**Impact of visions/objectives on risk**

The existence of clear visions and related objectives at the commencement of project planning and delivery was perceived by HLR interviewees as being a means to mitigate risk - "you would attempt to narrow down as much as you can in that planning period before you

go hell for leather, because you avoid subsequent problems, and that is critical in any project".

**JLE as agent of change**

JLE was clearly seen as a key agent of change by senior politicians (notably Heseltine) and advisors in central government - in terms of regeneration and restructuring of the London Docklands.

The relationship between JLE and the Canary Wharf development is seen as essentially symbiotic - i.e. they could not have existed in their present form without each other.

In terms of the regeneration of the Docklands, it has been a successful partnership formed from reliance on private sector investment and public sector support (LDDC) to realise the potentially beneficial impact of JLE. The LDDC's 1991 Transport strategy paved the way for much of this success.

**Harnessing change agent influences/impacts**

Notwithstanding the above, there would seem to have been a distinct lack of positive strategies (in the form of appropriately tasked and resourced institutions, plans and programmes) for other sites along the route of the JLE.

**Lack of co-ordinated Government strategy**

PHR respondents felt political competence is important - especially the capacity of political institutions to provide strong strategic policies and facilitate projects when and where required. Lack of co-ordinated government strategy led to ad-hoc decisions and the private sector filling the gap.

Different government departments may have different opinions on policy which can introduce confusion and uncertainty into the MUTP planning process. Also a general lack of political planning can lead to decisions which can critically impact, for better or for worse, an MUTP. The decision to sight the millennium dome at Greenwich is a case in point.

PHR interviewees consider that poor decisions were made concerning critical aspects of the project such as the dimensions of the tunnel, if the line should be stand alone or integrated into the tube network, the choice of project management team, and provider of E&M systems.

PHR interviewees also consider that Government needs to become more involved in resolving high level strategic issues such as easing the co-ordination between different transport sectors working together on large projects and dedicating the appropriate time for the planning process to run its course.

**Factors that affected balance between vision and practicality**

Early project planning was wholly driven by perceived practicalities by a public/private sector coalition focusing on value for money. The process was heavily influenced by private sector objectives.

Subsequent project planning work in the early 1990s and onwards saw the balance tip in favour of a more public sector vision-led approach (and the subsequent commitment of further significant public sector resources).

The planning period for CTRL was highly politicised. A number of project elements (e.g. two stations on the south bank, the architectural focus) were 'bolted-on' in response to highly effective political lobbying.

Once the project moved from a private sector to public sector initiative, the early implicit imperatives to deliver a 'least-cost' rail link using existing systems were was overridden by concerns over prestige and the perceived need for a c21st century showcase railway.

Whilst the JLE project was highly political, the project was not victim of ‘bolt-ons’ due to high profile lobbying. The majority of the lobbying effort was early on during project conception which resulted in JLE going ahead instead of Crossrail

**Identification & harnessing of forces of change**

The JLE delivery agents demonstrated varying degrees of clarity of thinking about the forces of change which were to be harnessed by the JLE project. The Waterloo Greenwich Railway was all about restructuring accessibility to the docklands area to support Canary Wharf Phase 2, CW were very clear how the line was going to contribute to change in the Docklands.

The public sector expansion of the project via the East London Rail Study was to promote regeneration, it was certain that the project would have a beneficial regeneration and restructuring impact on East London/Thames but the project took a ‘build it and they will come’ type attitude to many of the stations on the new line. Little provision was given to bolstering access and feeder-routes for the stations, and truly integrating transport and landuse planning to achieve the most effective regeneration possible. It was taken for granted that the private sector was capable of committing sufficient resources to implement the JLE’s attendant developments.

**Robustness and adaptability**

Interviewees consider that JLE and other major projects are inevitably evolutionary in nature as new and changing stakeholder agendas emerge over time.

A project planning process which advances a project up to a certain stage of maturity pre Royal Assent with some form of flexibility built in to allow the project to respond to the prevailing political, social and economic contexts post Royal Assent.

Respondents report that a project which has been 15 years in the planning can arrive at Royal Assent without being fully defined, and even so, is often subject to budget constraints at that point in time which were not readily foreseeable during the planning process which force critical decisions to be made at the 11th hour prior to implementation. “When you go into a large project, what you have to know is that everything is going to change, and you have to move with that change. If you find forces or whatever it is that just locks you into 'this is what you said you were going to do and now you have to do this'... if you're so stupid to have that happen to you, then you're …. you're done”.

But, it is doubtful that government deliberately adopted a strategy for planning JLE that was 'flexible, adjustable and robust, paying attention to short, medium and long term consequences simultaneously' - rather, it would seem that new contextual items and ideas simply occurred in an ad hoc manner which ultimately served to mould the project.

**When was JLE effectively 'frozen'?**

Based on Project Profile data and HLR responses it is suggested that JLE was 'frozen' at different times to suit different purposes (for example):

- 1989 decision to pursue a line joining green park to Stratford, integrated as part of the underground network 'froze' the overarching project concept;
- The 1992 Royal Assent did not freeze the projects specification ready for implementation due to the failure of CW, The project continued to evolve well into 1993 when the financial hiatus finished and go ahead was given by the secretary of state;
- construction stage 'freezing' appears to have taken place only in 1993;
- however, the project was 'unfrozen' in 1996 when the millennium dome was sited at Greenwich, and radical adjustments were made to the JLE specification and construction management team in order that it should be finished in time for the millennium celebrations.

### 3.4.3.3 Theme 3: Projects as closed/open systems

**Closed v open system approach**

The HLR phase asked interviewees whether JLE was treated as an open or closed system - here, the presumption was that 'traditional' criteria and tools/methods are significantly more closely equated with a closed system approach than one that readily acknowledges wider influences as an open system process. The prevailing view appears to be that the project was treated as 'closed' but with the following qualifications:

- it was treated as a closed (or 'frozen') system in terms of financial (demand) modelling and appraisal as part of the business case assembly;
- it was treated as an open system in terms of accommodating broader elements that were ultimately a major part of the justification of the project . The JLE would not have gone ahead on the strength of the CBA alone.

HLR interviewees indicate inconsistent treatment, mainly by sponsors/proponents of MUTPs such as JLE, of projects that are both 'open and closed systems' and as both 'commodities and services' at different stages in their lifecycle - initially as closed systems and commodities and later as open systems and services when there is a need to include broader objectives capable of adequately justifying the project when faced with apparent criticism that CBA rations are too low.

**Critical elements of risk, uncertainty and complexity**

*The short planning and implementation period* for JLE was often cited by interviewees as *a* major source of risk and uncertainty - had more time been available perhaps better decisions would have been made concerning tunnel diameter, station size and specification, and more satisfactory solutions to construction/safety standards which dogged the project later on.

Interviewees consider that identifying the nature and scale of potential 'impacts' is difficult, with many impacts only likely to become apparent in the long-term.

**Skills and competencies - project lifecycle**

PHR interviewees note the need for managers and decision-makers who are able to see the project in its entirety (holistically) over the whole lifecycle, especially in terms of RUC. JLE evidence points towards the failure of project managers during the project implementation, and perhaps a realization that different people are needed to steer the project during different phases of the lifecycle).

### 3.4.3.4 Theme 4: Governance, regulatory frameworks and enforcement

**The impact of international standards**

The detailed planning for JLE was undertaken in a knowledge vacuum. The LUL had not build a underground line since the 1970s and many safety and design standards were not up to date and available for application to the JLE. Therefore many standards were brought over from the Hong Kong Mass Rapid Transport System, many of which did not suit the LUL context. Safety Standards relating to the experience from the Kings Cross disaster also impacted upon the project.

**Extracting benefits from MUTPs/JLE**

Considerable risk and uncertainty was noted by HLR interviewees regarding the extraction of benefits from JLE through the planning system. Section 106 agreements were seen as insufficient mechanisms for extracting some of the benefits accrued by small scale private sector real estate developers.

JLE sought contributions from 3 private developers totalling £425m – however the NPV of these contributions was considerably less suggesting the arrangement was made as much for Political reasons as a fair contribution to the project. Many interviewees raised the issue of how to capture land-value uplift from real estate beneficiaries and the need for a workable system).

HLR responses also suggest that planning instruments/processes are more-or-less adequate, and therefore the most critical factor is the bargaining skills of public sector representatives, especially given the belief that individual cases need to be treated on merit. Risk, here, is therefore closely associated with the availability of public sector negotiation skills 'across the board'. JLE respondents saw the public sector as being in a very weak bargaining position throughout the project lifecycle.

**Availability of national agency**

During JLE planning and delivery stages there was no clearly identified body/agency clearly tasked with taking a multi-disciplinary/multi-function view of the roles, functions and implementation needs associated with the project. The LDDC could have provided some of these requirements but although its influence in the Docklands Area was undoubtedly very strong, LDDC's powers were in practice limited: it had powers to acquire land by agreement or compulsory purchase and, in the case of the large amount of land in the public sector, there were powers for it to be vested in the Corporation by the Secretary of State. This ensured a supply of land for development; it took over from the London Boroughs their planning (but not their plan making) powers. This was response to the Government's perception that the Boroughs had been too restrictive in exercising their development control and other powers because their plans for the area were outmoded and inappropriate; it had powers, and the resources, to provide new (or refurbish the existing) infrastructure.

Government policy capable of guiding JLE planning and delivery was effectively reflective of professional silos - DoT pursued solely transport matters while the DoE sought to insert broader considerations.

Competence of local planning departments, and central government agencies connected with the JLE was questioned by respondents:

- Local government agencies lacked the experience/capability to manage the projects local impact resulting in lost opportunities;

- Central government agents lacked the experience required to manage / act as an effective client. According to the Arup's End-of-Commission Report "a client who does not have the experience, resources and capability to direct his project manager on a large, complex multi-disciplinary development needs to appoint a senior Board member to be responsible for the project. The board member should be supported and advised by a group whose members will be experienced in programme, progress and cost disciplines and have the authority of the Board to monitor, probe and challenge the project manager on detail and implementation" (Arup, 2000:15). In terms of the Delivery Phase, according to the End- of-Commission Report by the Secretary of State's Agent, "London Underground Limited lacked the forceful, strong and effective management needed for the coordination of the JLEP, CEG, and JELL in the delivery of the Railway and in the observance of new H&SE / HMRI legislation".

**Path-dependent 'best practice'**

Path dependent 'best practice' impacted greatly on the planning and delivery of JLE. The delivery team was chosen from the recently completed Hong Kong Mass Rapid Transit System, which was a project built in a completely different political context, whilst HLR respondents pointed out many other European project teams with a similar level of experience who could have been consulted with experience in political cultures somewhat closer to that of the UK. Key impacts relating path dependency have been outline as follows:

- HK Team were inexperienced concerning UK political context;
- original management structure designed on that of Hong Kong, with command and control focused on senior management team, with a lack of proper channels for delegation;
- the project contracting system was derived from the Hong Kong contracting environment, but was applied stressfully in the UK environment;
- higher management (from HK) were unaware of the process by which engineers verify contractors work in the UK which led to a number of adversarial issues;
- very small amount of collaboration on project, design team were not mixed with contractors to establish constructability;
- best practice based on experience from other projects can be a means to mitigate risk (HLR).

Given that JLE was the UK's first major rail project for over 20 years, it may be surmised that any best practice applied predominantly to the project construction stage, rather than the planning stage.

### 3.4.3.5 Theme 5: Relevant project information

Information concerning political motives and policies is critical to the success of early planning stages, and ultimately the proposals passage through parliament. However gaining the required information is not easy as government policy can be somewhat nebulous requiring direct political assistance to identify key points.

Project planning and implementation plans/programmes need to be 'certain' and 'realistic' and enable the proper integration of actions and activities by all concerned parties. Interviewees suggested realism was a critical aspect lacking from much of the M&E and station JLE specification.

Certainty is seen as particularly critical in terms of commitments to the delivery of key decisions, approvals and infrastructure components (by a specified time) on which parallel investment and funding decisions are to be based (by the private sector). Some respondents recounted stories of various situations where JLE lost the trust of private sector

stakeholders, for example uncertainty surrounding payment of contracts during implementation was partially responsible for the poor performance of contractors.

Poor cross-functional sharing of appropriate information/data and ideas (silos) was identified both within and between organisations and networks in the JLE planning and delivery.

#### 3.4.3.6 Theme 6: Tools/techniques for coping with risk, uncertainty and complexity

**Perceptions of models and analytical tools**

It is clear from PHR and HLR interviewee responses that current project appraisal and evaluation tools, methods and processes are not broad enough to take into the wide number of project factors required for appraisal consistent with c21st knowledge of project impacts. Consequently, it must be concluded that dependence upon these outdated tools, methods and processes alone is unlikely to deliver a holistically successful MUTP, that is a MUTP which is judged successful by the majority of key stakeholders.

Key issues associated with the current appraisal and evaluation 'toolbox' are perceived to be (HLR):

- short term 'costs' are perceived to be more tangible than long term 'benefits', the current methodologies are biased towards the short term, when appraisal should consider ranges more in tune with the lifespan of the project, and the time required for evolution of benefits;
- the need to understand that (particularly) political influence is likely to override the outputs from the use of traditional tools, methods and processes;
- the shortcomings associated with the current toolbox are not adequately explained to decision-makers;
- the inconsistent treatment, mainly by sponsors/proponents of MUTPs such as JLE, as projects that are both 'open and closed systems' and as both 'commodities and services' at different stages in their lifecycle - initially as closed systems and commodities so as to facilitate demand modelling and business case assembly and later as open systems and services when there is a need to include broader objectives capable of adequately justifying the project when faced with apparent criticism that demand forecasts ultimately prove to be incorrect.

Notwithstanding these issues, interviewees emphasised the need to enhance current tools, techniques and processes rather than abandon them - by, for example, making use of a wider multi criteria approach that takes full account of future contextual conditions.

Respondents noted the original cost benefit ration for JLE was very low (1:0.85), but unofficial post project evaluation by the bank of England suggested an actual ration of 1:2. The CBA was extremely conservative as it did not account for the wider benefits of the project.

Responses indicate little apparent enthusiasm for the use of SDVs as a framework for appraisal due to perceived difficulties in defining 'sustainability' in an operationally assessable manner.

The JLE forecasts were reasonably accurate; this may be in part due to their reliance on Canary Wharf office space projections. During the modeling process, the office projections frustrated modelers as numbers were constantly revised (upwards) but this one large centre of gravity (already somewhat underway) may have simplified analysis compared to say the CTRL which required a consideration for future air travel markets etc.

The Treasury appear to have been very reluctant to give any sort of recognition to regeneration benefits as appraisal criteria until after the project was completed. Canary Wharf and LUL did some pioneering work in this area for the JLE but overall it appears we have very immature methodologies for valuing externalities associated with major infrastructure projects - including factors such as innovation, enhancing skills/knowledge etc.

**Political will/ influence**

There is a wide ranging perception amongst interviewees that political will/imperative/pragmatism generally overrides outputs from appraisal methodologies that apply such tools/methods and criteria. In this case of the JLE the political perception proved correct, although this may have been more by accident than judgment.

Respondents mention the private sector contribution as swaying the balance in favour of the project.

Key decision-makers did not rely on modelling exercises. More influential in this regard were (inter alia) political influence, the impact of the pursuit of political vision (private finance of infrastructure) whether as statement of political power or for other reasons. The main use of the CBA was by transport engineers who were promoting alternative projects (pet projects) using their superior CBA, their main success from this strategy was the initial refusal of the waterloo to Greenwich Line. The CBA for the JLE was not used to legitimise previously held positions, as the ration was not particularity favourable.

**Acknowledged need for new tools/techniques**

In light of the inadequacy of 'traditional' criteria and tools/methods, HLR interviewees suggest the need for a broader, multi-criteria approach which takes better account of both future contexts (including scenario testing) and social concerns.

**Best practice v institutional learning**

'Best practice' was a significant feature of the JLE, but more in the detailed design and implementation than during the planning process – indeed the lack of best practices prior to the deposition of the bill may have resulted in the large cost increase during detailed design, as the original cost estimates didn't take adequate safety levels into account.

Experience from other projects was seen as a key means to mitigate risk (HLR and PHR) although the choice of projects from which to learn contained significant context miss match. It is unclear if the Institutional learning from other projects (Hong Kong Mass Transit System) was on balance positive or negative for the JLE. There were many criticisms of the JLE management team being out of touch with the way things were done in the UK (HLR and PHR).

'Best practice' is seen as frequently being contextually insensitive and consequently needs to be applied with great care (HLR).

**Skills and competencies**

Personality and personal relationships are seen as vitally important at all levels, within and between organisations.

Strong leadership can reduce uncertainty - the private sector has a requirement for strong leadership and the associated certainty. The JLE project management introduced much uncertainty during the implementation phase.

Both public and private sectors need to have full understanding, based on the proper availability of information, of each party's constraints. Both parties most also have adequate levels of competence to interact with the MUTP process. The 'one off' nature of MUTPs often leads to a public client which lacks the required competence for such a complex undertaking. The same is true for local officials who may have little or no experience of interaction with MUTPs resulting with lost opportunities at the local level, often of those most impacted by the schemes.

Co-operation and relationship building is seen as more fruitful than an adversarial relationship.

It is helpful to maintain consistency of personnel throughout the planning and delivery process - so as to maintain mutual understanding of negotiation positions.

**Handling political risk**

The comprehension of political motives and management of political risk recognized as important to private sector success. The private sector sought to minimize risk during preparation of Waterloo and Greenwich railway bid through both the realistic recognition of skills gaps within the team, and a political motivation analysis of key players within the Cabinet.

Most key decisions that shaped the project were taken at the highest political level, albeit with advice from public sector transport officials. This may well have been somewhat inevitable given the size/complexity/cost/potential impact of the project and the fact that national prestige was at stake (especially towards the Millennium deadline). The political decisions did not completely overcome perceived/actual professional/departmental silos within the government, especially transport engineers from LUL/LRT. (In 1985 London Underground Limited (LUL) was set up to manage the tube network as a wholly owned subsidiary of London Regional Transport).

Respondents agreed that having powerful political champions represents a means to reduce risk through increased certainty that the project is likely to proceed in a prescribed form. The knowledge and skills to provide the ammunition for such political champions is also important.

**Risk management and project funding**

Reliance on private sector and markets to manage risk - the reliance on the private sector to mitigate risk is unrealistic in today's climate. This is especially the case of the JLE where there was very little risk transferred to the private sector.

There is an unrealistic feeling of security that 'such a risk would be reduced as inevitable for someone else to step in'.

Funding arrangements made JLE vulnerable to RUC from the outset - RUC was introduced into the project from the start by the importance placed by government on financing the project using private money, effectively exposing the project to broader economic risks which can be particularly acute in the real estate sector.

There has been a lack of transparency in respect of JLE real estate deals, though some counter with the perceived need for 'commercial confidentiality'.

**Risk sharing**

HLR interviewees note that determining an appropriate degree of risk-sharing between the public and private sector is extremely problematical. In particular:

- transferring risk to the private sector carries with it the risk that the project scope/nature may change from that originally conceived – as a result of re-negotiation of terms and/or the private sector delivering the project it can best 'afford';
- private sector backers can go bankrupt. Therefore when there are grave financial problems the public sector will ultimately receive the lion's share of the risk.

### 3.4.3.7 Theme 7: Innovation and markets

JLE featured a number of innovations, all of which contributed to the build up of project risk. The resulting risk was managed with varying degrees of success as outlined below. The principle components of innovation in JLE as sources of risk were:

- the development and promotion of the Waterloo to Greenwich line entirely by the private sector was innovative and did much to shake up the establishment (via the East London Rail Study);
- adapting the Waterloo and Greenwich route to join up with Stratford, and increasing the number of stations on the south bank was an innovative step taken by LUL, which significantly increased the potential for the line to make a positive impact (apart from the enhanced potential for regeneration, the connection from Stratford to central London must have strengthen the Olympic bid later on), but this route change significantly increased the project risk (and risk share);
- the private sector contribution was seen as innovative – CW had previously contributed to the Bank extension of the DLR, but the scale of contribution to JLE was a first in terms of scale;
- the last underground to be built in the UK before to JLE was the Jubilee Line, opening in 1979. Prior to the JLE the London underground had experienced a steady stream of new line construction projects and extensions (approx 2 to 3 each decade) from the 1850s onwards. The 14 year construction experience gap between the JL and JLE made the line a relatively 'new experience' for much of the LUL/LRT staff;
- building a tube in a new health and safety landscape: it should be noted that the HSE was formed in 1975 after the Health and Safety at work act 1974, and was followed by numerous updates in legislations Construction and Design Management 1995, Construction Health, Safety and Welfare 1996. . Focus turned to rail safety in particular after the Kings Cross Underground Fire in 1987 and the Clapham train crash in 1988. The HSE started to enforce rail safety in 1990. (http://www.hse.gov.uk/aboutus/timeline/). All LUL/LRT prior metro construction experience had taken place in a very different (considerably less stringent) regulatory landscape. The new regulations required significant levels of innovation, especially in the provisions for platform evacuation;
- the JLE's adopted tunnelling method 'NATM' or New Austrian Tunnelling Method. The method was a developed in the 1950s in Austria where it was originally intended for use in Rock. The JLE project was the second time NATM had been used to tunnel in London Clay (the first being the Heathrow Airport Tunnel under construction at the same time as JLE as part of the Heathrow express service 1993 to 1998);
- the use of the JLE stations as an architectural showcase – in 1992 Architect-in-Charge of the JLE, Roland Paulette (previously working on Hong Kong MRT and appointed by Wilfred Newton), exhibited his vision for the JLE project at the Architecture Foundation in London;

- JLE was one of the first mega projects to carry out an environmental impact assessment;
- in 1990 the LUL director of engineering confirmed the JLE should go ahead with a performance specification of 36 trains per hour, and the only way of realizing this goal was to use a Moving Block System. LUL saw the JLE as an opportunity for a technology leap beyond the success of the Victoria line in the 1960s but also recognized the risk, putting out a tender which required the provision of both the MBS and a fall back FBS. The decision whether to proceed with MBS or Fallback system would be taken by an engineer in the 23rd month of the contact (Poor management decision making may have resulted in the decision to go ahead with the MBS system in 2006 and to allow the backup system to lapse). The failure of the MBS had significant impacts for LUL congestion management plans over the network;
- the aspirations of the Millennium dome experience (relying on connectivity provided by the JLE) as a monument to countries proud tradition of design and innovation "To create, build, and operate a national Millennium Experience which attracts, inspires, entertains, educates and involves visitors and participants. To seek, through the Experience, to influence positively each individual's view of themselves and the world's view of this nation." TB 19th June 1997.

PHR findings suggest that stakeholders perceive beneficial application of innovation – combination of civil and financial engineering plus management of private sector risk through innovative investment in personnel and strategy. Good strategy and 'creative people' led to successful bid for project by Arup. However, both PHR and HLR stakeholders made mention of the application of 'tried and tested' construction methods as a means to mitigate risk.

PHR and HLR: The one example of the positive effects of innovation from the JLE may be the decision to make the stations architectural showcases. As with most decisions regarding the JLE, the definitions of success are highly stakeholders specific. PHR and HLR seem to suggest the majority of end users are delighted with the architectural focus, whilst private sector investors saw the cavernous stations as expensive folly. When the project was finally opened over time and budget, and under specification, the only significant plus was the quality of the stations, the architectural emphasis of which was not included in the submission of the Bill.

The decision to make the stations architectural showcases was taken by Wilfred Newton (Chairman London transport 1989 to 93), director of LRT post JLE bill submission, who was inspired by the MRT and brought Roland Poletti over from HK to be principle architect in Charge. The emphasis on architecture significantly increased the cost estimate of the JLE from the estimate submitted with the bill in 1989, the design of the stations was undertaken in 18months, and incorporated into the overall JLE plan in such away it was difficult to scrap them and go back to the 'drawing board'. The realization of this architectural goal may have in part benefited from the 18 month hiatus? The detailed station design certainly did, but even with an extra 18 months designs were not finalized (partially due to uncertainty killing momentum) leading to a lack of fit between tender and working drawings.

Other decisions made concerning specification limited the JLE's potential exposure to success through innovation. LULs decision to make the JLE an extension of the JLE impacted directly on project specifications (e.g. tunnel diameter) which bound the success of the JLE to the success of the MBS. Hence the failure of the MBS made it impossible for the JLE to fulfill its obligation of passengers per hour and limited the future capacity of the train line to much less than would otherwise have been achievable with larger trains and a standalone system.

The extension of the JLE to Stratford was the masterstroke which allowed the JLE to become part of an innovation system, the output of which is essentially unpredictable, but is positioned in such a way to maximize positive benefits.

"The London Dockland Development Corporation begat the Docklands Light Railway. The DLR begat the DLR extension London to the city, the extension begat Canary Wharf, Canary Wharf begat the Jubilee Line extension, the Jubilee Line Extension begat the rote for the CTRL and the combination of all of those begat Britain's chance of having an Olympic Games. There would not have been a London Olympic Games in 2012 without that sequence of events which allowed it to happen. …You couldn't have started in the old East End without Canary Wharf development and the DLR and the Jubilee Line and the CTRL; you wouldn't have stood a chance in hell of delivering what is sought. Now that's one response."

Innovative features of JLE (technical) were considered as high risk, and a mitigation mechanism was put in place. However this mitigation procedure was over-ridden by the determination to get the moving block system working, which ultimately resulted in the JLE being completed with a significantly downgraded system (after a dramatic change in the project management team).

The choice of signaling system provider may have been the key decision leading to the failure of the system, and the impact of the failure was increased by JLE project management failing to identify the failure and take decisive action earlier during the implementation phase.

Canary Wharf's contract stipulating a certain level of service (due to being 'burnt' by the DLR) or a £100m payback, combined with government pressure to deliver, may have driven the JLE team to make the decision to hope and pray for the MBS system delivery instead of making a clean cut, a tactic which probably cost considerably more than the £100m payback in the long term.

The tunnel collapse at Heathrow led to a 6-month delay in the JLE whilst the reasons for the collapse were investigated. This risk does not appear to have been managed despite the innovative use of NATM for London clay being a cause for concern. As the two projects were progressing simultaneously with the same risk, more could have been done to address impacts between projects.

The architecture gamble, which led to higher costs, seems to have "paid off"

#### 3.4.3.8 Theme 8: Project stakeholders

**Background**

Information on stakeholder consultation is patchy. The PHR and HLR respondents did not dwell greatly on the subject. The responses from the HLR highlighted a significant contrast between public and private sector objectives, which could be taken as evidence of poor primary stakeholder consultation. Consultation with wider stakeholder groups was touched upon by only two respondents (one HLR and PHR).

Stakeholder consultation took place, but the general consensus (from PHR and HLR) is that a relatively small number of petitions were lodged due to:

- the majority of the railway being underground;
- where possible the railway travel under existing rail infrastructure routes, minimizing the projects impacts on residents;
- a lot of preparatory work by LT and LUL to minimize petitions;

- "So I mean I obviously we went out to my way to try and stop people coming to petition. So if we could negotiate that in advance that was a sensible thing to do to save time and money because we had a QC to represent us which is obviously expensive."

The literature states much work went into public meetings to explain proposals and listen to community views first hand. This was supported by comprehensive press and public relations exercise. 156 petitions were logged, mainly environmental concerns such as construction noise. Negotiations took place and 24 petitions chose to present their case at the House of Commons committee. The main outcome from the committee was:

- LUL should provide the fullest possible access to disabled passengers;
- Committee found in favour of North Greenwich alignment, taking into account the regeneration of the London docklands and the Lower Lee Valley.

Perhaps the most vociferous secondary stakeholder group was the press, who took a very negative attitude towards the project throughout its construction, principally due to their preoccupation with time/cost. They (anecdotally) succeeded in putting pressure on the Labour Party, and subsequently the project management team who were uncomfortable with the limelight.

**Stakeholder scanning**

The deposition of the Bill (1989) included a Book of reference which included all the affected land and property along the route (defined by a zone of impact). From 1989 public meetings were held with communities, community action groups etc. to ensure everyone understood the benefits of the line.

**Stakeholder engagement**

PHR interviews suggest the consultation with stakeholders was broadly successful. Parliamentary time was kept to a minimum and few petitions were presented to the parliamentary committee. A PHR interviewee stated keeping the dialogue open with stakeholders was crucial, and time and effort needs to be spent doing this.

**Lobbying by stakeholders**

The principal acts of lobbying were identified as:

- CWs initial proposal of the Waterloo to Greenwich Railway was accompanied by direct lobbying to government;
- The inclusion of the Southbank stations (Southwark and Bermondsey) was defended by Simon Huges MP.

**Consensus building**

Both PHR and HLR interviewees acknowledge that consensus building is critically important at the project planning stage. This is particularly significant at the highest political levels given that the size/cost/potential impacts of MUTPs such as JLE make it imperative that key formative decisions are taken at the heart of government.

Project champions are, by necessity, very astute consensus builders. Indeed, the garnering of essential project support is seen as based on political consensus building and persuasion and an acute awareness of what is likely to be politically 'acceptable' (suggesting a very fine-tuned awareness of context).

Consensus-building was especially prevalent during the early planning and appraisal period of the JLE, notably at central government level.

There was uncertainty (in the HLR responses) about who benefits/who pays. The identification of winners/losers at this stage is still uncertain (many costs/benefits will only emerge later) and will ultimately depend upon individual stakeholder's perspective. Moreover, gains/losses are difficult to identify and quantify with any degree of precision.

**Winners** - 60% of respondents see London as a key beneficiary of the project, whilst 60% of respondents see the private sector as beneficiaries (30% financial services industry and 30% real estate). 20% of respondents saw government as winners and only 10% mention tube users.

Respondents have all suggested the private sector certainly won due to the large increase in land value as a result of the line, which enabled office rents to be charged on par with the city. This was compounded by the deal for the financial contribution which is seen as on very favourable terms for the private sector.

Respondents also suggest the City won in the long term, as the competition from Canary Wharf forced them to change their planning regulations which intern enabled them to become competitive once more, adding further strength to London as a financial capital.

**Losers** - respondents were not so clear on the potential losers from the JLE project. There was some suggestion that ultimately the public lost due: to the increase expense and depletion of the public purse (not helped by the rather unscrupulous deal negotiated by CW for their contribution); by the JLE legacy ‘lesson’ learnt by the treasury that public sector can’t manage projects, leading to the ‘disastrous’ privatisation of the London Underground. London underground also lost during the JLE implementation as it diverted funds away from the maintenance of the network.

### 3.4.3.9 Theme 9: Trust and transparency

There appears to have been good (effective with regards to minimization of petitions) two way communication between the project client and the general public concerning project impacts throughout the Parliamentary process. However this implies a distinct lack of consultation and consensus building with potentially impacted stakeholders during the early planning stages of the project where principle route decisions were made.

Consensus-building amongst key political and other influential decision-makers (private sector investors) is seen as critically important, especially at the project conception, planning and appraisal stages - i.e. before the project has gathered sufficient 'momentum' to have a life of its own. Consensus-building requires 'trust' and strong lobbying skills; although the CW team, from past experience, would have approached negotiations with government with a low degree of trust but never the less they managed to forge a consensus with the government to get the project taken seriously.

The establishment of close working relationships within and between organisations greatly helped to overcome the majority of barriers and silos, fostering a mutual understanding of contrasting organisation's motives and positions. The co-operation between LUL and CW during the 9 month run up to the deposition of the bill is a case in point, although the main flow of understanding may have been from the public sector to the private sector.

The low CBA of JLE meant politicians had to trust their instincts with the development, and all other stakeholders had to trust the politicians continued backing of the project despite weak numbers. The financial hiatus did nothing to prove the governments support for the

project, as they sought to delay the scheme as financiers were found. The effects of this were lowered morale in the design team during the hiatus, who perhaps did not approach the situation with 100% *'carpe diem'* enthusiasm, being rather unsure of the future position on the project. The contractors also had to renegotiate their contracts every 3 months, during a period of price rises as the recession subsided.

HLR interviews suggest one of the principle institutional outcomes of the JLE was a complete lack of trust with the public sector management of projects by the Labour government (which seems a bit of a Tory viewpoint). The victim of the conclusion may have been the transfer of management of the LUL to the private sector, and subsequent Metronet fiasco

#### 3.4.3.10 Theme 10: Project lesson learning/sharing

PHR/HLR findings regarding project lesson learning/sharing produced a number of impacts on/from the JLE.

**Lesson sharing/learning impacts on the JLE**

Lessons transferred from other projects in the shape of guidelines and procedures may be highly context sensitive. Failure to appreciate and adapt any lessons and guidelines according to context can lead to disaster, for example the project management of the JLE.

It may be safer to transfer lessons and guidelines from the most similar contexts, rather than the most successful projects.

Private sector lessons regarding the public sector delivery of previous projects and applied to the JLE allowed them to negotiate terms for any private sector cash contribution which were highly favourable to the private sector.

Private sector learning tends not to get disseminated outside the company. Much of the private sector learning from the JLE may have been within the institution and is considered intellectual property.

Mechanisms were not developed enough to allow the capture and dissemination of public sector learning from JLE other than the project evaluation undertaken by the University of Westminster. Even so, the evaluation team found it difficult to track down and interact with many of the project team post project.

Some lessons were learnt by the Treasury regarding cost benefit analysis. An informal appraisal (discussion at the CW offices) with treasury officers established the overall benefits of the project post completion were equivalent to a ratio of 1:2.

The government learnt more widely that you can't trust public sector management to deliver a project on time and on budget.

The reasonably successful lessons learnt from the JLE public sector consultation were not passed on to the CTRL project (which was competing for expertise and resources in the same temporal space as the JLE).

Drawing from the above analyses and observations of JLE developments a number of potential lessons can identified from the Test 3 exercise for future MUTPs. These are summarized below in Table 3.4 below.

**Table 3.4: Test 3 lessons for the treatment of risk, uncertainty, complexity and context**

| **Understanding of context is critical** |
|---|
| **Lesson #1**: Successful projects are likely to be characterised by planning and delivery agents that possess acute awareness of the importance of context throughout the project lifecycle and respond to changing contexts in a pro-active way. Pro-active context awareness on the part of all MUTP planning and delivery bodies has become especially significant if 'success' is to be achieved. Detailed context scans prior to taking on a particular project to ensure that it is in line with the particular companies core vision and objectives should be undertaken is important in an attempt to minimise re-active contextual monitoring later on in the project. |
| **Lesson #2**: Any attempt to judge 'project success' must be done so firstly by considering the context that prevailed at the time the project was conceived, planned, appraised and implemented; |
| **Lesson #3**: The most significant generic contextual elements for MUTPs which need to be clearly understood by project planners and delivery agents are perceived to be (PHR and HLR):<br>• political context, which represents a particularly important influence on MUTP planning and delivery lifecycle. Political policies and agendas (explicit or implicit, transparent or opaque, open or hidden can dominate MUTP decision making. Political influence/support is the critical contextual factor in all aspects of MUTP planning and delivery (beyond the conception of the project ) and a clear pre-requisite to the successful launch of a project (HLR and PHR).<br>• financial/economic context, both the financial arrangements made for the project and the external economic environment had significant impacts, particularly during the delivery of the JLE. For example the adopted methods of financing the project may prove unsuccessful in practice, either through unrealistic expectations, or when coupled with broader deteriorating economic conditions<br>• stakeholder perspectives/motives/agendas and the level of accordance between them (which need to be acknowledged as subject to change)<br>• technological and regulatory changes. |
| **Lesson #4**: A keen sense of context must be accompanied by the powers/willingness to take action. During the delivery of the JLE, managers may have been aware (or hyper aware) of the political contexts surrounding the project and it has been suggested this awareness may have limited the courses of action they were prepared to take as they feared the political fallout from a decision more than the internal project problems caused by not making the decision. |
| **Lesson #5**: 40% of HLR interviewee support for the notion that there occur moments in time (contexts) when circumstances are ripe for decision-makers to 'seize the moment' lends support to the belief that successful project planners and delivery agents are indeed very aware of both 'context' and its changing nature - albeit in an instinctual rather than formal way. However it should be noted the concept of success is stakeholder specific. Concerning the JLE one man's triumph was another man's disaster. Many public sector objectives, seen as highly successful by the majority of stakeholders, where seen as wasteful by some private sector stakeholders. |
| **Lesson #6**: HLR responses suggest there are different professional perspectives on the influence/importance of context – private sector stakeholders are seen as more contextually aware, or aware that they are unaware, in the early stages of a projects life cycle and hence seek advice from the appropriate sources. Public sector stakeholders are slower to act/react |

| |
|---|
| to contexts |
| **Political influence/support is a key contextual element** |
| **Lesson #7**: Political patronage in the form of a project champion is seen as a key asset for MUTP project sponsors, planners and delivery agents. Champions fulfil a number of important roles including clarifying/setting/adjusting project objectives, establishing project credibility and mandate for project teams, consensus building and networking. The role of the project champion is seen as most important in the early stages of the project. |
| **Lesson #8**: Political support throughout the project lifecycle was also seen as important. Project champions must be accompanied by project guardians who can support the project during times of adversity. JLEs support from the Blair government and the role of Prescott as project guardian were identified by stakeholders as invaluable during the project implementation stage. |
| **Lesson #9**: Project planners and delivery agents should to be aware that informal monitoring of contextual matters (notably politics) is often a key activity that takes place through well established (informal) relationships and networks as part of consensus building. |
| **Credible financial support as a key contextual element** |
| **Lesson #10**: Respondents highlighted the importance for credible financial backing as the critical pre-requisite for political support early on in the project life cycle. It is suggested politicians don't want to back losers, and credible financial backing, such as large private contributions, acts to increase their certainty in a project. However from the JLE, the politician's concept of what is credible finance should not be confused with what is realistic finance. |
| **Context and the project lifecycle** |
| **Lesson #11**: The 'project delivery phase' was fraught with contextual impacts which were impossible for project managers and stakeholders to ignore. There is no evidence to suggest the project became frozen with project managers being less contextually sensitive, but rather the project managers became less willing to act. |
| **Lesson #12**: MUTP planning phase is both highly vulnerable to, and a large source of RUC. The appraisal and planning stage of the project is usually when the project is most vulnerable to external and internal RUC. The project has not yet become 'too big to fail' and multiple contextual elements are at work to form the project according to their specific agendas. Furthermore the impacts of decisions made or not made during the planning stage manifest themselves in the delivery and operations phases of the project and are often 'magnified' in the sense that a decision made on the basis of 1 weeks analysis during the planning stage, may impact the potential effectiveness of the project throughout it's entire life (100+ years). |
| **Lesson #13**: Traditional CBA has a role to play in future MUTP appraisals. If a project cannot show a favourable result in terms of traditional appraisal and evaluation it will struggle to secure the necessary finance to proceed. However this backbone of traditional appraisal should then be supplemented by sustainability criteria of both a quantifiable and non-quantifiable nature. |
| **RUC and the pace of change in the 21st Century as context for MUTP planning and delivery** |
| **Lesson #14**: Key issues associated with the current appraisal and evaluation 'toolbox' are perceived to be (HLR):<br>• short term 'costs' are perceived to be more tangible than long term 'benefits', the current methodologies are biased towards the short term, when appraisal should consider ranges more in tune with the lifespan of the project, and the time required for evolution of |

benefits;

- the need to understand that (particularly) political influence is likely to override the outputs from the use of traditional tools, methods and processes;
- the shortcomings associated with the current toolbox are not adequately explained to decision-makers;
- the inconsistent treatment, mainly by sponsors/proponents of MUTPs such as JLE, as projects that are both 'open and closed systems' and as both 'commodities and services' at different stages in their lifecycle - initially as closed systems and commodities so as to facilitate demand modelling and business case assembly and later as open systems and services when there is a need to include broader objectives capable of adequately justifying the project when faced with apparent criticism that demand forecasts ultimately prove to be incorrect.

**Lesson #15**: Responses suggest there is a significant lack of holistic sustainability challenges and related criteria for planning and appraisal in the c21st. This may be attributed to the lack of a strategic body to take the lead in operationalising sustainability, therefore MUTP planning and appraisal would benefit from a national agency charged with this role. However the development of sustainability objectives must based on practice, and balanced between the rights of the individual and the common good

**Lesson #16**: There needs to be greater stakeholder involvement in the planning and delivery process, including the identification of prevailing and emerging/changing stakeholder motives and agendas and more effective consensus building. Such practice may help to break down barriers and reduce in-fighting between departments responsible for project planning/implementation.

**Lesson #17**: The project team selection process should also be undertaken in such a way to introduce a broader holistic view of project planning and delivery processes and enhanced political/tactical awareness of the influences on such processes.

**Lesson #18**: There is a need for MUTP planning and implementation strategies and programmes that are robust but also capable of ready adaptation in the face of changing needs/demands and contextual items. The use of scenario building and testing is seen as a key means to seek to discern future contextual influences on project planning and delivery.

**Lesson #19**: Some stakeholders are locked into the path dependent application of CBA, from the public sector in-particular: The Treasury appear to have been very reluctant to give any sort of recognition to regeneration benefits as appraisal criteria until after the project was completed. Canary Wharf and LUL did some pioneering work in this area for the JLE but overall it appears we have very immature methodologies for valuing externalities associated with major infrastructure projects - including factors such as innovation, enhancing skills/knowledge etc.

**Lesson #20**: There is a wide ranging perception amongst interviewees that political will/imperative/pragmatism generally overrides outputs from appraisal methodologies that apply such tools/methods and criteria. In this case of the JLE the political perception proved correct, although this may have been more by accident than judgment. Respondents mention the private sector contribution as swaying the balance in favour of the project.

**JLE as an agent of change**

**Lesson #21**: MUTPs can be highly effective agents of change: In light of the positioning JLE as a key element in the regeneration, growth and restructuring initiatives of the London Docklands in the early 1990s, it may be concluded that the project was indeed seen as a very significant agent of (contextual) change both in the regeneration of the Docklands/Southbank area of London, and the restructuring and expansion of the UKs

financial industry- as supported by numerous HLR interviewees;

**Lesson #22**: The full impacts/benefits of an MUTP can only be understood over the long term: stakeholders suggest that the full benefits of the project in terms of regeneration and growth will only materialise in the longer term, for example the work going at Canning Town Regeneration e.t.c

**Lesson #23**: MUTPs can often serve to support short term political agendas: there was some (minor) evidence to suggest that JLEs contribution to the Docklands vision was seen as a means to promote political agendas by (for example) encouraging the regeneration of areas controlled by the chief opposition party at the time (mainly in East London);

**Lesson #24**: The formation of a body with statutory powers to facilitate regeneration, such as urban development corporations, can create tensions where they overlap with Local government institutions. For example the formation of the LDDC, and therefore a single head in charge of regeneration over 5 East London boroughs with boundaries in the Docklands area, caused friction and resentment amongst the boroughs, and perhaps formed barriers to potential co-operation over, amongst other things, the development of adequate interchange facilities for the JLE project

**Mega events as contextual items**

**Lesson #25:** Mega Events can have critical contextual influence on MUTPs which are both beneficial and problematic in terms of RUC. Principal impacts observed from Mega Events and the JLE are as follows:

- They can impact on the project delivery dates, shifting an approximate date into a date certain
- reduced short term uncertainty for property developers/land owners who are seen as key stakeholders in the delivery of regeneration
- impact the specification of the project and ultimately it's ability to meet it's original objectives. This can lead to serious knock on effects for long term sustainability of the project
- focused the project teams mind' and help reduce risk - enable broad consensus on the need for/commitment to action to be reached quickly
- create anomalies in the labour market with sharp increases in demand related to the mega event
- create paradigm shifts in within sectors of the economy which could further bolster the need for a particular MUTP, but equally render the project inappropriate
- create sharp regulatory change which impacts upon the project.

**Clarity of goals/visions and objectives**

**Lesson #26**: The existence of clear visions and related objectives at the commencement of project delivery was perceived by HLR interviewees as being a means to mitigate risk. "you would attempt to narrow down as much as you can in that planning period before you go hell for leather, because you avoid subsequent problems, and that is critical in any project"

**Lesson #27**: MUTPs with inadequate or unclear objectives can be prone to muddling through: Objectives and visions should be clearly articulated and shared. Interviewees note that JLE project objectives were essentially subject to considerable change as a result of emergent agendas from different stakeholder groups during the project planning and implementation phases.

**Lesson #28**: The degree of muddling through observed on a project can be stakeholder dependent. Often the private sector is faster to spot a significant opportunity than the public

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| sector: One reason for the lack of clear vision for the Docklands may have been that the government were slow to realise the potential of the Docklands site as financial office space, but were rather pulled along by the private sector, hence the government's JLE project objectives were not articulated at the start of the project, but manifested themselves as political pressure as the planning went along |
| **Lesson #29**: Objectives should be decided from consultation with multiple stakeholder groups. This will help stress test the objectives against the different experiences within the group and help to rate the practicality of objectives. JLE was criticized for the inclusion of overly optimistic objectives from LUL regarding the use of untried and untested technology. Perhaps a more realistic set of objectives up front would have led to a more efficient and effective solution for the JLE |
| **Lesson #30**: Having a shared vision about project objectives and deliverables can become a unifying element within and between actors that helps to address issues of uncertainty - inasmuch as this can become the basis for commitments by parties responsible for delivering key parts of the project/programme. This was especially true during the implementation stage of JLE where much uncertainty existed concerning deliverables. This may have been in part due to a lack of shared vision (or a realistic shared vision) between the different stakeholders involved in the planning and implementation stages) |
| **Lesson #31:** Project implementation knowledge gaps can create problems in the transition of a project from the detailed planning to implementation stages: Some stakeholders felt clear vision statements and objectives articulated were articulated by the JLE, but the project lacked skills during the implementation phase to satisfy these objectives concisely, and scope creep reigned "So they had a huge, what I call, project implementation knowledge gap." |
| **Lesson #32**: It is important that objectives remain flexible: Becoming locked into the delivery of precisely defined objectives may be a bad thing as it is unrealistic to think a projects objectives can remain unchanged "When you go into a large project, what you have to know is that everything is going to change, and you have to move with that change. If you find forces or whatever it is that just locks you into 'this is what you said you were going to do and now you have to do this'... if you're so stupid to have that happen to you, then you're …. you're done". |
| **Factors that affected balance between vision and practicality** |
| **Lesson #33**: There is a tipping point at which projects become viable (either explicitly or implicitly) as their objectives mature and gain the necessary support. For the JLE the early project planning was wholly driven by perceived practicalities by a public/private sector coalition focusing on value for money. The process was heavily influenced by private sector objectives. Subsequent project planning work in the early 1990s and onwards saw the balance tip in favour of a more public sector vision-led approach (and the subsequent commitment of further significant public sector resources) which ultimately led to the project gaining the go-ahead |
| **Lesson #34**: The role of lobbying can be fundamental to a project. Whilst the JLE project was highly political, the project was not victim of 'bolt-ons' due to high profile lobbying. The majority of the lobbying effort was early on during project conception which resulted in JLE going ahead instead of Crossrail |
| **Robustness and adaptability** |
| **Lesson #35**: Major projects are inevitably evolutionary in nature as new and changing stakeholder agendas emerge over time. |
| **Lesson #36**: MUTPs should adopt a project planning process which advances a project up to a certain stage of maturity pre royal ascent with some form of flexibility built in to allow the project to respond to the prevailing political, social and economic contexts post Royal |

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| Ascent. Respondents report that a project which has been 15 years in the planning can arrive at Royal Ascent without being fully defined, and even so, is often subject to budget constraints at that point in time which were not readily foreseeable during the planning process which force critical decisions to be made at the 11th hour prior to implementation. |
| **Critical elements of RUC – JLE** |
| **Lesson #37**: Planning periods should not be overly rushed: The short planning and implementation period for JLE was often cited by interviewees as *a* major source of risk and uncertainty - had more time been available perhaps better decisions would have been made concerning tunnel diameter, station size and specification, and more satisfactory solutions to construction/safety standards which dogged the project later on. |
| **Skills and competencies - project lifecycle** |
| **Lesson #38**: PHR interviewees note the need for managers and decision-makers who are able to see the project in its entirety (holistically) over the whole lifecycle, especially in terms of RUC. JLE evidence points towards the failure of project managers during the project implementation, and perhaps a realization that different people are needed to steer the project during different phases of the life cycle) |
| **The impact of international standards** |
| **Lesson #39**: Standards critical to MUTPs should be identified and kept up to data by a designated body: The detailed planning for JLE was undertaken in a knowledge vacuum. The LUL had not built a underground line since the 1970s and many safety and design standards were not up to date and available for application to the JLE. Therefore many standards were brought over from the Hong Kong Mass Rapid Transport System, many of which did not suit the LUL context. |
| **Extracting benefits from MUTPs** |
| **Lesson #40**: Effective mechanisms are required to extract certain stakeholder benefits from MUTPS through the planning system: Considerable uncertainty was noted by HLR interviewees regarding the extraction of benefits from JLE through the planning system. Section 106 agreements were seen as insufficient mechanisms for extracting some of the benefits accrued by smaller scale private sector real estate developers. |
| **Lesson #41**: Effective planning tools must be backed up with the correct competencies in order to use the tools effectively: Some HLR responses also suggest that planning instruments/processes are more-or-less adequate, and therefore the most critical factor is the bargaining skills of public sector representatives, especially given the belief that individual cases need to be treated on merit. Risk, here, is therefore closely associated with the availability of public sector negotiation skills 'across the board'. JLE respondents saw the public sector as being in a very weak bargaining position throughout the project lifecycle. |
| **Path dependent 'best practice'** |
| **Lesson #42**: Path dependent 'best practice' can impacted greatly on MUTP planning and appraisal: For the JLE The delivery team was chosen from the recently completed Hong Kong Mass Rapid Transit System, which was a project built in a completely different political context, whilst HLR respondents pointed out many other European project teams with a similar level of experience who could have been consulted with experience in political cultures somewhat closure to that of the UK. |
| **Need for 'certainty', accuracy and realism** |
| **Lesson #43**: Information concerning political motives and policies is critical to the success of early planning stages, and ultimately the proposals passage through parliament. However gaining the required information is not easy as government policy can be somewhat |

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| nebulous requiring direct political assistance to identify key points. |
| **Lesson #44**: Project planning and implementation plans/programmes need to be 'certain' and 'realistic' and enable the proper integration of actions and activities by all concerned parties. Interviewees suggested realism was a critical aspect lacking from much of the M&E and station JLE specification. |
| **Lesson #46:** Certainty is seen as particularly critical in terms of commitments to the delivery of key decisions, approvals and infrastructure components (by a specified time) on which parallel investment and funding decisions are to be based (by the private sector). Some respondents recounted stories of various situations where JLE lost the trust of private sector stakeholders, for example uncertainty surrounding payment of contracts during implementation was partially responsible for the poor performance of contractors |
| **Skills and Competencies** |
| **Lesson #47**: Personality and personal relationships are seen as vitally important at all levels, within and between organisations; |
| **Lesson #48**: Strong leadership can reduce uncertainty - the private sector has a requirement for strong leadership and the associated certainty. The JLE project management being an LUL 'in house team' introduced much uncertainty during the implementation phase. |
| **Lesson #49**: Both public and private sectors need to have full understanding, based on the proper availability of information, of each parties' constraints. Both parties most also have adequate levels of competence to interact with the MUTP process. The 'one off' nature of MUTPs often leads to a public client which lacks the required competence for such a complex undertaking. The same is true for local officials who may have little or no experience of interaction with MUTPs resulting with lost opportunities at the local level, often of those most impacted by the schemes |
| **Lesson #50**: Co-operation and relationship building is seen as more fruitful than an adversarial relationship |
| **Lesson #51**: It is helpful to maintain consistency of personnel throughout the planning and delivery process - so as to maintain mutual understanding of negotiation positions. |
| **Risk management & project funding** |
| **Lesson #52**: Reliance on private sector and markets to manage and mitigate MUTP risk (or the appearance to do so) is misguided and unrealistic in today's climate. This is especially the case of the JLE where there was very little risk transferred to the private sector. |
| **Lesson #53**: Government policy and interventions can often increase financial risks: funding arrangements introduced risk into the project due to the importance placed by government on the requirement for a private sector contribution, effectively exposing the project to broader economic risks which can be particularly acute in the real estate sector, whilst the contribution was relatively small at 5% of the JLE outturn cost |
| **Lesson #54**: New funding mechanisms need to be considered (including the ability to raise funds at the regional level, and the use of bonds underpinned by property values to allow a market to be created in major projects) so that schemes are assessed not only in terms of their likely returns, but also the credit worthiness of the developer/backer. |
| **Lesson #55**: There is often a lack of transparency in respect of real estate deals which is often countered though the perceived need for 'commercial confidentiality'. High impact risks often remain hidden within this opacity |
| **Innovation as a contribution to success** |
| **Lesson #56**: Innovation needs time to breathe – quieter times within a project are often |

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| sources of innovative thinking: The one example of the positive effects of innovation from the JLE may be the decision to make the stations architectural showcases. |
| **Lesson #57**: In an uncertain world project decisions should be made which maximize the projects potential for exposure to future beneficial outcomes: JLE decisions concerning specification limited the projects potential exposure to success through innovation. LULs decision to make the JLE an extension impacted directly on project specifications (e.g. tunnel diameter) which bound the success of the JLE to the success of the MBS. Hence the failure of the MBS made it impossible for the JLE to fulfill its obligation of pph and limited the future capacity of the train line to much less than would otherwise have been achievable with larger trains and a standalone system. However the extension of the JLE to Stratford was the masterstroke which allowed the JLE to become part of an innovation system, the output of which is essentially unpredictable, but is positioned in such a way to maximize positive benefits (similar to black swan) |
| **Mitigating risks from innovation** |
| **Lesson #58**: It is not enough to identify risks and put mitigation plans into place, but risks must be removed, and mitigations followed when necessary: the signaling system for JLE as considered as high risk, and a mitigation mechanism was put in place. However this mitigation procedure was over-rode by the determination to get the moving block system working, which ultimately resulted in the JLE being completed with a significantly downgraded system (After a dramatic change in the project management team) |
| **Lesson #59**: In-depth assessment of supply chain risk is highly important: The choice of signaling system provider may have been the key decision leading to the failure of the system, and the impact of the failure was increased by JLE project management failing to identify the failure and take decisive action earlier during the implementation phase |
| **Lesson #60:** The private sector seems to mitigate risk more effectively than the public sector, using experience to guide mitigating contracts: Canary Wharfs contract stipulating a certain level of service (due to being burnt by the DLR) or a £100m payback, combined with government pressure to deliver may have driven the JLE team to make the decision to hope and pray for the MBS system delivery instead of making a clean cut (this is JW conclusion), a tactic which probably cost considerably more than the £100m payback in the long term |
| **Lesson #61**: There is a need identify and monitor critical technical contexts: The tunnel collapse at Heathrow led to a 6 month delay in the JLE whilst the reasons for the collapse was investigated. This risk does not appear to have been managed despite the innovative use of NATM for London clay being a cause for concern. As the two projects were progressing simultaneously with the same risk, more could have been done to address impacts between projects. |
| **Lesson sharing/learning impacts** |
| **Lesson #62**: Lessons transferred from other projects in the shape of guidelines and procedures may be highly context sensitive. Failure to appreciate and adapt any lessons and guidelines according to context can lead to disaster, for example the project management of the JLE. It may be safer to transfer lessons and guidelines from the most similar contexts, rather than the most successful projects |
| **Lesson #63**: Private sector lessons regarding the public sector delivery of previous projects and applied to the JLE allowed them to negotiate terms for any private sector cash contribution which were highly favourable to the private sector. |
| **Lesson #64**: Private sector learning tends not to get disseminated outside the company. Much of the private sector learning from the JLE may have been within the institution and is considered intellectual property |
| **Lesson #65**: Mechanisms were not developed enough to allow the capture and |

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| dissemination of public sector learning from JLE other than the project evaluation undertaken by the University of Westminster. Even so the evaluation team found it difficult to track down and interact with many of the project team post project. |
| **Lesson #66**: Some lessons were learnt by the Treasury regarding cost benefit analysis. An informal appraisal (discussion at the CW offices) with treasury officers established the overall benefits of the project post completion were equivalent to a ratio of 1:2) |
| **Lesson #67**: The government learnt more widely that you can't trust public sector management to deliver a project on time and on budget. |
| **Lesson #68**: The reasonably successful lessons learnt from the JLE public sector consultation were not passed on to the CTRL project (which was competing for expertise and resources in the same temporal space as the JLE) |

### 3.4.4 Test 4 – Synthesis of Tests 1-3

#### 3.4.4.1 Chief context-specific influences on project achievements

The chief context-specific influences on the JLE's achievements included:

**Table 3.5: Chief context-specific influences on JLE project achievements**

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| **The Millennium Dome:** | The Millennium Dome and Millennium celebrations (total cost £700m in 2000 prices) fixed a date certain for the completion of the project half way through its implementation phase. This critical contextual impact on the JLE which seen as either beneficial or problematic depending upon stakeholder perspective. |
| **The 'Big Bang':** | Financial deregulation in 1986 increased the demand for the type of open plan office space available at Canary Wharf, making the JLE an imperative for private sector led real estate expansion in the area. |
| **Recent transport disasters:** | The Kings Cross underground fire (1986) and Clapham Common Rail disaster (1987) did much to change the health and safety regulatory landscape during the JLE planning and construction phases. |
| **Government's policy agenda:** | JLE was seen as a means to (variously): support the regeneration of the London Docklands; establish a president of private sector financial contributions for infrastructure. |
| **Lobbying:** | The version of JLE which finally began construction in 1993 was born out of private sector lobbying for a second line to serve Canary Wharf as a means to foster regeneration and growth and to enhance the viability of real estate development. |
| **Politics and champions:** | The arrival and influence of (especially) key political champions who both moulded and made use of prevailing contexts to further particular agendas:<br>• Heseltine's 'vision' for East London and the Docklands saw the establishment of the LDDC and his direct intervention into the construction of the DLR paved the way for Canary Wharf and the demand to support the JLE;<br>• The determination of several public sector stakeholders from LRT/LUL (Willis, Bayliss, Wilfred Newton) to ensure JLE |

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| | survived the financial hiatus of 1992/3, despite their original objections (Bayliss and Willis) to the Waterloo to Greenwich Line;<br>• Prescott defended the project on numerous occasions during its troubled implementation, and was instrumental in bringing in Bechtel to finish the project in time for the Millennium opening;<br>• The Thatcher Government's overriding techno-rational arguments in favour of alternative projects (crossrail). |
| **Credible financial support:** | Respondents also highlighted the importance for credible financial backing as the critical pre-requisite for political support early on in the project life cycle. It is suggested politicians don't want to back losers, and credible financial backing acts to increase their certainty in a project. |
| **Private sector vision:** | The vision for JLE was led by the private sector which was responding in part to the 1980s policy of docklands re-population. |
| **The planning context:** | The city's planning regulations were strict and forbade the type of office space required by financial institutions post big bang, this tight control helped in Creating the market for open plan offices at Canary Wharf. |
| **The recession:** | The economic instability in 1992 and subsequent bankruptcy of Olympia York and Canary Wharf led to a 18 month moratorium on the project. There has been some suggestion that this was a stalling mechanism used by government at a time of economic stress. |
| **The institutional context:** | The institutional context into which the project was placed was highlighted by a number of respondents. The establishment of an institutional framework (LDDC) capable of dealing with the key contextual elements (especially private sector stakeholder contexts) so as to maximise the potential benefits of JLE to the docklands was a critical force in the success of the JLE. However the formation of the LDDC, and therefore a single head in charge of regeneration over five London boroughs, caused friction and resentment amongst the boroughs, and perhaps formed barriers to potential co-operation over the development of adequate interchange facilities for the project. |
| **Technology:** | The technological context impacted the JLE in three key areas:<br>• the use of NATM tunnelling techniques for the first time on London Clay for two simultaneous projects (Heathrow Express and JLE) led to a tunnelling disaster at Heathrow impacting the JLE and halting implementation for 3 months;<br>• the lack of a reliable supplier for a moving block system as specified by LUL resulted in the JLE incorporating significant levels of risk into the delivery programme;<br>• CWs experience with LULs delivery of the DLR led them to attach conditions to their JLE contribution which has led to significant further expense to upgrade the project to meet its 1993 specification targets. |
| **Path** | Many indications that path dependency had a detrimental impact on the JLE, especially concerning the project management team being |

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| **dependency:** | recruited almost exclusively from the HK MTR which was a highly successful project, but realised in a dramatically different social-political context to the JLE. |
| **Globalisation:** | Many respondents agreed the JLE helped enabled London to compete as a key financial capital alongside New York and Tokyo. However this was not one of the initial goals of the JLE or for CW. The respondent felt that linking globalization and JLE would be 'post-rationalization'. However globalization is undoubtedly one of the driving forces behind the success of Canary Wharf. |

Potentially important contextual matters that were NOT considered to be influential included:

- the sustainable development agenda (perhaps in its infancy at the time the JLE was being planned and appraised);
- climate change issues;
- other 'big ideas' and 'rhetoric'.

### 3.4.4.2 Chief generic influences on project achievements

The chief generic influences on the JLE's achievements were seen to be:

**Table 3.6: Chief generic influences on JLE project achievements**

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| **Context awareness:** | This is critical to all aspects of project planning and delivery, and requires the following actions and responses:<br>• to identify the contexts which could influence the realization of the projects objectives;<br>• to identify within this list the contexts which are most critical to the realization of project goals;<br>• to identify those contexts which are most likely to change during the projects life cycle;<br>• to monitor contexts throughout the life cycle;<br>• it may be prudent to take account that many/most contextual elements are likely to change/evolve over the course of the (usually lengthy) project lifecycle;<br>• the most volatile contexts may be economic and political in nature;<br>• different contexts may have different impacts at varying stages of the project life cycle;<br>• a mega event is a short term high impact context. |
| **Project 'success':** | This can be judged at different stages of a project's life cycle. The process is multi-dimensional but any judgment should take place in the light of sound knowledge of the context that prevailed at the time the project was conceived, planned, appraised and implemented. The prevailing context should include stakeholder typologies responsible for key decisions. |
| **Changing contextual elements:** | This can put stress on the projects objectives, in the worst case killing the project. Successful projects are able to move and adapt with the changes of critical contexts. The result is the evolving nature of projects as the planning and delivery process responds to the moulding influence of changing contextual elements over time. |

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| **Surviving projects:** | These are likely to be characterised by planning and delivery agents that possess acute awareness of the importance of context throughout the project lifecycle and can steer the project through the contextual changes. The skill in which the project objectives are navigated through the contextual changes is part of the measure of project success. |
| **Political support:** | This is the *critical* (or closest critical) contextual factor in all aspects of MUTP planning and delivery and a clear pre-requisite to the successful launch of a project. |
| **Strategic thinking** | The tendency towards 'short-termism' on the part of politicians and civil servants is strongly related to their concept of project success. Projects will not be supported if they are not seen as at least practical and achievable in the short run – this is a prerequisite of today's mechanisms for project financing. Only at this point will stakeholders scan future contexts and evaluate longer term aims and objective, but these long term issues are always secondary to the short term. |
| **The project delivery phase:** | This cannot be less contextually sensitive than other phases, despite the perception that the project is 'frozen'. |
| **Formal monitoring of contextual forces:** | There is little evidence in the JLE study to suggest that there were explicit mechanisms and procedures for identifying and monitoring contextual forces, except in terms of stakeholder forums/community consultation processes and formal 'planning' procedures that primarily dealt with detailed and day-to-day issues (such as mitigation measures). There were some formal mechanisms in place for JLE that sought to address some contextual matters:<br>• planning regime which considered design and construction details;<br>• the requirement to undertake EIAs. |
| **Informal 'context-scanning':** | Many references to relationship and consensus-building on the part of key decision-makers suggest a considerable degree of 'informal' context awareness and scanning - politicians are seen to be especially sensitive to (changing) context. |
| **Stakeholder perspectives/ motives/ agendas:** | These need to be both clearly understood and acknowledged as changing over the course of the project. Efforts should be made early on to establish how project objectives related to key stakeholder groups, end ensure stakeholders have a common understanding of these objectives, and why they globally important, even if they oppose certain objectives from certain stakeholder groups. |
| **Political contexts:** | (See also 'political support' above): these are both all-pervasive and also subject to change in the light of short-term political cycles. This is particularly important with regards to project champions, and institutional sustainability. Obtaining project continuity between political lifecycles can be a significant challenge. |
| **Financial context:** | This refers especially to the financial arrangements made for the project and changes in the external financial environment. Different sources of finance are more or less sensitive to prevailing contexts. Private sector finance is much more rapidly responsive to contextual changes than public sector finance, and this should be taken into account when considering risk assessment and mitigation. |

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| **MUTP's themselves influence the context:** | MUTPs are themselves readily able to mould the 'context' into which they are placed. However, this is not enough to ensure success. Objectives must be dynamic and reactive to context, but not so they lose scope of the project's original aims. |

### 3.4.4.3 Principal stakeholder 'winners and losers' from Jubilee Line Extension

**Winners**

According to the survey respondents, the main project 'winners' were as follows:

- London (as a whole): 60% of respondents see London as a key beneficiary of the project;
- the private sector: 60% of respondents see the private sector as beneficiaries (30% financial services industry and 30% real estate);
- the Government through taxes: (20% of respondents);
- London transport users: (only 10% mention tube users as 'winners');
- the City of London;
- Bechtel.

Respondents have all suggested that the private sector were certainly winners due to the large increase in land value as a result of the line, which enabled office rents to be charged on par with the City. This was compounded by the deal for the financial contribution which is seen as on very favourable terms for the private sector.

Respondents also suggest that the City won in the long term, as the competition from Canary Wharf forced them to change their planning regulations which in turn enabled them to become competitive once more, adding further strength to London as a financial capital.

**Losers**

The main losers from the JLE project were seen by respondents as being:

- the general Public:
  - due to the increase expense and depletion of the public purse (not helped by the rather unscrupulous deal negotiated by CW for their contribution);
  - by the JLE legacy 'lesson' learnt by the Treasury that the public sector can't manage projects, leading to the 'disastrous' privatisation of the London Underground. London underground also lost during the JLE implementation as it diverted funds away from the maintenance of the network.
- The future of public sector project management within the UK (due to the increasing emphasis on the private sector).

### 3.4.5 Responses to JLE overall research questions (ORQs) and hypotheses (ORHs): Lessons of a context-specific Nature

**Table 3.7: JLE ORQ#1 context specific responses**

| **ORQ#1 - What constitutes a 'successful mega urban transport project (MUTP) in the 21st Century?** |
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| *Need for a transparent appraisal framework:* Successful projects often have far reaching impacts. Projects such as JLE have a wider set of objectives, and hence potential impacts than are adequately captured and appraised by the cost benefit analysis methodologies as outlined by the Treasury Green Book. The decision as to whether an MUTP is given the go-ahead is therefore a political decision which takes into account the results of the formal |

narrow appraisal and balances these against the government's wider political objectives. This process of appraisal is relatively opaque, lacking a detailed account of government objectives, and how these are weighted against the results of a narrow CBA. Therefore a transparent framework is needed to capture the decision making process applied and weightings used by key stakeholders when appraising projects on the wider impacts.

*Need to understand political objectives: A* successful (in the sense that the project is given the go-ahead) project in the UK must align with political objectives, but understanding these political objectives, and how they relate to MUTPs is often difficult as policy can be nebulous and cannot be simply extracted from political party manifestos.

*Importance of regeneration objectives:* Successful UK projects often have 'regeneration' as a key project objective. Although the definition of regeneration is not consistent between projects, the economic impacts of regeneration are considered highly favourable.

*Internal politics:* MUTP projects in the UK tend to be appraised very narrowly by the transport engineering sector and the Treasury. Transport departments internally rank projects through their CBA ratios which are often poor indicators of the projects ability to produce favourable socio- economic impacts, and will lobby against projects promoted from outside transport departments which have low CBA values. Therefore potentially wide-reaching projects may be quashed prematurely by internal politics.

*Appropriate levels of risk sharing* must be established for MUTPs which are financed using PPPs which should include some analysis of potential project winners and losers. The public sector in the UK has a poor record of negotiating financial contributions. The JLE project is a case in point where contractual caveats accompanying the deal were very unfavourable for the public sector, creating a win-win scenario as a pre-condition for finance.

*Effective audit trails:* Projects involving private sector-public sector dealings, when setting objectives regarding financing, funding and risk share must have effective audit trails capable of tracking transactions that might otherwise become opaque as a result of so-called 'commercial sensitivity'. For example the exact details of the deal with Canary Wharf and the status of payments is difficult to trace.

*Commitment and trust:* In the UK context, successful MUTPs often require high levels of commitment, trust and positive intervention from both the private and public sector:

- political commitment generally needs to be sustained throughout the project planning period and must not be seen as a negative force. Political 'interference' due to short term politicking can be highly demotivational to project teams
- the economic quantification of all benefits is impossible as the definition of a benefit is likely to change with contests. Therefore strong political vision and commitment is needed to ensure projects with the highest potential for wide ranging impacts go forward. A project needs to make its own luck.
- there is a need to build up trust and confidence between the promoters, public bodies and the public through honesty and transparency

*Importance of establishing co-operation between project parties:* The value of 'working together' and establishing co-operation is seen as significant to enable a project to become as adaptable as possible to future contextual scenarios. However this philosophy is not echoed in the way project teams are currently structured in the UK, for example contractual arrangements often used in MUTP projects are construed in such a way to establish an adversarial relationship between clients, project managers and contractors.

**Table 3.8: JLE ORQ#2 context specific responses**

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| **ORQ#2 - How well has risk, uncertainty and complexity been treated in the planning, appraisal and evaluation of such projects? AND**<br><br>**ORH#3 - The level of competence in decision-making and planning in today's fast-changing world is best assessed by the adequacy of the treatment of risk, uncertainty and complexity and sensitivity to context – all of which are important demands on Strategic Planning.** |
| *Impact of visions/objectives on risk:* The existence of clear visions and related objectives at the commencement of project planning and delivery was perceived by HLR interviewees as being a means to mitigate risk (This is considered context specific as other UK case studies do not support it) - "you would attempt to narrow down as much as you can in that planning period before you go hell for leather, because you avoid subsequent problems, and that is critical in any project" |
| *Factors that affected balance between vision and practicality:* Projects must find a balance between vision and practicality. Early project planning was wholly driven by perceived practicalities by a public/private sector coalition focusing on value for money. The process was heavily influenced by private sector objectives. Subsequent project planning work in the early 1990s and onwards saw the balance tip in favour of a more public sector vision-led approach (and the subsequent commitment of further significant public sector resources). However budget constraints in 1992 saw a refocus on project practicality where possible.<br><br>The extent of vision and practicality can shift throughout a project: Once the project moved from a private sector to public sector initiative, the early implicit imperatives to deliver a 'least-cost' rail link using existing systems were was overridden by concerns over prestige and the perceived need for a c21st century showcase railway.<br><br>The prevailing context at Royal Assent is particularly important. Respondents report that a project which has been 15 years in the planning can arrive at Royal Assent without being fully defined, and even so, is often subject to budget constraints at that point in time which were not readily foreseeable during the planning process which force critical decisions to be made at the 11th hour prior to implementation. |
| *Critical elements of RUC:* There needs to be a balance in the length of planning period: The short planning and implementation period for JLE was often cited by interviewees as a major source of risk and uncertainty - had more time been available perhaps better decisions would have been made concerning tunnel diameter, station size and specification, and more satisfactory solutions to construction/safety standards which dogged the project later on. |
| *Skills and competencies - project lifecycle:* Holistic vision is a desirable quality from key project stakeholders, especially managers: PHR interviewees note the need for managers and decision-makers who are able to see the project in its entirety (holistically) over the whole lifecycle, especially in terms of RUC. JLE evidence points towards the failure of project managers during the project implementation, and perhaps a realization that different people are needed to steer the project during different phases of the life cycle).<br><br>Stakeholder competencies should match key MUTP roles: Some stakeholders felt clear vision statements and objectives articulated, but the project lacked skills during the implementation phase to satisfy these objectives concisely, and scope creep reigned "So they had a huge, what I call, project implementation knowledge gap." |

*Extracting benefits from MUTPs/JLE:* Mechanisms available to extract benefits from private sector uplift are lacking: Considerable uncertainty was noted by HLR interviewees regarding the extraction of benefits from JLE through the planning system. Section 106 agreements were seen as insufficient mechanisms for extracting benefits accrued by smaller scale private sector real estate developers.

Political decisions can be disproportional to financial propositions if they fulfil wider policy objectives: JLE sought contributions from 3 private developers totalling £425m – however the NPV of these contributions was considerably less suggesting the arrangement was made as much for political reasons as a fair contribution to the project. Many interviewees raised the issue of how land-value uplift can be captured from real estate beneficiaries and the need for a workable system.

Private sector contributions can be misleading: JLE sought contributions from 3 private developers totalling £425m – however the NPV of these contributions was considerably less. Furthermore the most significant contributions contained some strict clauses making the contribution almost win-win.

The root inadequacy when extracting benefits may lie more with the competence of those extracting benefits: HLR responses also suggest that planning instruments/processes are more-or-less adequate, and therefore the most critical factor is the bargaining skills of public sector representatives, especially given the belief that individual cases need to be treated on merit. Risk, here, is therefore closely associated with the availability of public sector negotiation skills 'across the board'. JLE respondents saw the public sector as being in a very weak bargaining position throughout the project lifecycle.

*Political will/influence:* Lack of broad risk monitoring and assessment: While political influence/agendas had a significant impact on the planning and delivery of JLE, there were no formal monitoring mechanisms (aside from ARUP working as the secretary of state's agent) in place to assess the broader RUCs stemming from inappropriate governance and regulation. The LDDC was seen as a powerful organization set up as a result of political will to develop the docklands and mitigate risks associated with continued decline of the area.

*Best practice v institutional learning:* Best practice is a double edged sword: 'best practice' was a significant feature of the JLE, but more in the detailed design and implementation than during the planning process – indeed the lack of best practices prior to the deposition of the bill may have resulted in the large cost increase during detailed design, as the original cost estimates didn't take adequate safety levels into account.
'Best practice' is seen as frequently being contextually insensitive and consequently needs to be applied with great care (HLR). Experience from other projects was seen as a key means to mitigate risk (HLR and PHR) although the choice of projects from which to learn contained significant context miss match (HK team transferred to UK, when other teams were available who had worked on

It is unclear if the Institutional learning from other projects (Hong Kong Mass Transit System) was on balance positive or negative for the JLE. There were many criticisms of the JLE management team being out of touch with the way things were done in the UK (HLR and PHR).

*Skills and Competencies:* Clarity of objectives must be accompanied by strong leadership to reduce uncertainty. For MUTPs strong leadership must come from a capable client directing the project management team. However the JLE project management was derived from an 'in house team' from LUL who were also the project client. This arrangement introduced weakness and confusion into the management of the project which critically impacted on the

implementation phase of the JLE.

The 'one off' nature of MUTPs often leads to a public client which lacks the required competence for such a complex undertaking. The same is true for local officials who may have little or no experience of interaction with MUTPs resulting with lost opportunities at the local level, often of those most impacted by the schemes

It is helpful to maintain consistency of personnel throughout the planning and delivery process - so as to maintain mutual understanding of negotiation positions.

*Risk management & project funding:* Financing of projects is an area of high risk: JLE funding arrangements made the project vulnerable to risk and uncertainty from the outset by the importance placed by government on financing the project using private money, effectively exposing the project to broader economic risks which can be particularly acute in the real estate sector

The public sector is a poor negotiator of finance: The government's objective in securing private sector finance meant it was not in a strong position to negotiate contractual terms regarding the private sector contribution to the project.

*Risk sharing*: The JLE did not represent a good example of equitable risk share. 40% of HLR respondents felt the JLE did not represent an adequate and appropriate distribution of project and financial risk between the public and private sector. In the event of a large scale project catastrophe, the risk will come home to roost with the public sector. In the case of the JLE the private sector negotiated contract terms to insure a win-win condition accompanying their contribution.

*Time to breathe'*: There needs to be a realization that any 'time to breath' needs to be context dependent and a balance ultimately required between speed and sloth. JLE HLR responses provide warning for both overly slow and overly fast planning or implementation stages. For example projects which are slow to implementation post Royal Assent lay themselves open to political and economic risk e.g change of government, recession. Projects which are overly fast through the planning stage can make project critical decisions without having gathered the appropriate information required for a balanced and realistic decision.

*Control' of planning and delivery process*: Project delivery can be tightly controlled: Concerning the expectation of that project delivery can be tightly controlled, a number of respondents felt explicitly that if the project was correctly planned, it could be delivered to a tightly controlled schedule. "The way that we deliver major projects is flawed, and we need to change the way we do it. And when we do, we will be able to deliver predictably. And that has to involve the control of the total process; the planning and the implementation and the operation."

*'Planetary alignment' concept*: 'Planetary alignment' seems to be a factor in UK projects: There are perceived to be moments in time in the project lifecycle that present ideal opportunities to take decisive action in pursuit of specific ideas, agendas and decisions

*Negotiation process/skills/relationships impact on levels of RUC*: Levels of RUC may be increased (in the UK context) by the following contextual influences:

- the public sector is seen as being in a poor bargaining position by its private sector counterparts (especially in relation to planning policy and guidelines);
- public sector staff are seen as less proficient at negotiation;
- there is a clear need for mutual appreciation and understanding of each parties' position – thus, collaboration rather than confrontation was seen as important in

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| moving forward decision-making. Such mutual understanding needs to be built up over time (trust) on the basis of the free flow of appropriate and accurate information;<br>• there is a need to build up trust and confidence between the promoters, public bodies and the public through honesty and transparency |
| *Innovation and RUC*: Innovation is another double-edged sword and must be fully accounted for in the risk analysis process and in subsequent stages of risk monitoring: When managed correctly innovation can have a net benefit to the realization of a project's objectives. However there are many pitfalls associated with the adoption of innovation, and as such innovation risks should be indentified and monitored just as closely throughout the project lifecycle. |

**Table 3.9: JLE ORQ#3 context specific responses**

| ***ORQ#3 - How important is context in making judgments regarding Overall Research Questions 1 and 2?*** |
|---|
| *Political influence/support is a key contextual element*: Political influence/support is the critical contextual factor in all aspects of MUTP planning and delivery (beyond the conception of the project) and a clear pre-requisite to the successful launch of a project (HLR and PHR).<br><br>Political patronage in the form of a project champion is also seen as a key asset for MUTP project sponsors, planners and delivery agents. Champions fulfill and number of important roles as foci – including clarifying/setting/adjusting project objectives, establishing project credibility and mandate for project teams, consensus building and networking. The role of the project champion is seen as most important in the early stages of the project<br><br>Political support throughout the project lifecycle was also seen as important. Project champions must be accompanied by project guardians who can keep the project going during times of adversity. For example key stakeholders identified as invaluable during the project implementation stage of JLE was the support from the Blair government and the role Prescott as project guardian in particular |
| *Perception of context*: HLR responses suggest there are different professional perspectives and reactions to the influence/importance of context in the UK– private sector stakeholders are seen as more contextually aware, or aware that they are unaware, in the early stages of a projects life cycle and hence seek advice from the appropriate sources. Public sector stakeholders are slower to act/react to contexts<br><br>Context perception miss-match: public sector institutions tend to varying perceptions of context, ranging from Treasury and Transport Planning who are essential narrow economic focus, to planning and political which take wider concerns into consideration. The context miss-match often leads to tension and reductions in co-operation between departments.<br><br>A keen sense of context must be accompanied by the powers/willingness to take action. During the delivery of the JLE, managers may have been aware (or hyper aware) of the political contexts surrounding the project and it has been suggested this awareness may have limited the courses of action they were prepared to take as they feared the political fallout from a decision more than the internal project problems caused by not making the decision. |

40% of HLR interviewee support for the notion that there occur moments in time (contexts) when circumstances are ripe for decision-makers to 'seize the moment' lends support to the belief that successful project planners and delivery agents are indeed very aware of both 'context' and its changing nature - albeit in an instinctual rather than formal way. However it should be noted the concept of success is stakeholder specific. Concerning the JLE one man's triumph was another man's disaster. Many public sector objectives, seen as highly successful by the majority of stakeholders, where seen as wasteful by some private sector stakeholders.

*Context and the project lifecycle*: The 'project delivery phase' was fraught with contextual impacts which were impossible for project managers and stakeholders to ignore. There is no evidence to suggest the project became frozen with project managers being less contextually sensitive.

MUTP planning phase is both highly vulnerable to, and a large source of RUC. The appraisal and planning stage of the project is usually when the project is most vulnerable to external and internal RUC. Furthermore the impacts of decisions made or not made during the planning stage manifest themselves in the delivery and operations phases of the project.

*Contextual forces influence pivotal decisions*: JLE responded to changing contextual influences in terms of:

- Government's/LRT Decision not to go ahead with Waterloo to Greenwich Railway proposal by Canary Wharf;
- Governments Decision to go ahead with the East London Rail Study by independent consultant and rush planning of line (to avoid future proposals by Canary Wharf?);
- 1992 recession and government decision for requirement of private sector contribution;
- LULs Decision to make JLE a technological and architectural showcase;
- Tunnel collapse at Heathrow;
- Government decision to site millennium dome at Greenwich;
- Governments decision to replace JLE delivery team due to nervousness over the failure of Millennium Celebrations impact on government popularity;
- Subsequent de-specification of the line triggering O&Y delivery clauses to pay back £100m, (more than ½ of original private sector payment) forcing LUL to start upgrade work in 2003 on a £300m project on both the JL and NL (cost now at £800m).

*MUTPs as 'agents of change'*: In the light of the positioning JLE as a key element in the regeneration, growth and restructuring initiatives of the London Docklands in the early 1990s, it may be concluded that the project was indeed seen as a very significant agent of (contextual) change - this is supported by numerous HLR interviewees;

While stakeholders suggest that the relationship between JLE and these wider initiatives has not been fully exploited in terms of coherent land use-transport strategies the JLE project has had a beneficial impact on the encouragement of investment in (particularly) regeneration. The project supported Phase 2 of the Canary Wharf development (expansion from 15,000 workers to 63,000 between 1999 to 2004), the regeneration of the South Bank including the Tate Modern Gallery, the Greenwich Peninsular and the Millennium Dome.

The success of Canary Wharf forced City planners to relax regulations and allow the City to modernize, thus facilitating a financial regeneration within the heart of London

However, stakeholders also suggest that the full benefits of the project in terms of

regeneration and growth will only materialise in the longer term, for example the work going at Canning Town Regeneration etc.

PHR - there was some (minor) evidence to suggest that JLE's contribution to the Docklands vision was seen as a means to promote political agendas by (for example) encouraging the regeneration of areas controlled by the chief opposition party at the time (mainly in East London);

The institutional context into which the project was placed has been highlighted by a number of respondents; the establishment of an institutional framework (LDDC) capable of dealing with the key contextual elements (especially private sector stakeholder contexts) so as to maximise the potential benefits of JLE to the docklands was a critical force in the success of the JLE. However the formation of the LDDC, and therefore a single head in charge of regeneration over 5 London boroughs, caused friction and resentment amongst the boroughs, and perhaps formed barriers to potential co-operation over the development of adequate interchange facilities for the project.

*Mega events as contextual items*: The Millennium Dome and Celebrations (£700m) was seen to have a critical contextual influence on the JLE which was both beneficial and problematic in terms of RUC:

- reduced short term uncertainty for Canary Wharf and other developers/land owners as government made a strong commitment to finish the line in time for celebrations;
- increased long term uncertainty and overcrowding risk as line specification was degraded, thus limiting eventual capacity to Canary Wharf and Docklands (although Canary Wharf hedged against this with a financial penalty clause linked to line capacity);
- fixed deadlines associated with Millennium's 'focused the mind' and help reduce risk - enable broad consensus on the need for/commitment to action to be reached quickly and for related infrastructure to be fast-tracked in light of such matters as national/political prestige;
- the big bang (deregulation within the financing sector in 1986) three years before the JLE Bill was submitted to parliament had a big impact Canary Wharf, thus fuelled the demand for the JLE project;
- the Kings Cross fire and Clapham rail disaster (1986 and 1987) severely impacted safety legislation throughout the planning and early delivery stages of the JLE, resulting the project being in a perpetual state of 'catch up';
- the recession and financial collapse of 1992 was a mega event which impacted heavily on the JLE as an 18 month moratorium was required to restructure the private sector finance;
- the Heathrow tunnel collapse.

*Clarity of goals/visions and objectives*: 60% of HLR interviewees felt the JLE was prone to muddling through, and required a more clearly articulated set of objectives and visions. Interviewees note that JLE project objectives were essentially subject to considerable change as a result of emergent agendas from different stakeholder groups during the project planning and implementation phases.

However HLR interviews suggest the degree of muddling through is stakeholder dependent. From the planner/transport planner perspective there was no vision early on with the first attempts to link the docklands with the central London although by the time of the East London rail study the projects visions and objectives had formed. "In an ideal world, somebody would have said, let's build a mega office development or a mega development on the Isle of Dogs and if we're going to do that what's the best way to serve it with transport

schemes?"

One reason for the lack of clear vision and objectives may have been that the government were slow to realise the potential of the docklands site as financial office space, but were rather pulled along by the private sector, hence the government's JLE project objectives were not articulated at the start of the project, but manifested themselves as political pressure as the planning went along.

Responses also indicate a belief in the notion that the UK lacks the ability to take tough strategic decisions on infrastructure that require political support.

Objectives should be decided from consultation with multiple stakeholder groups. This will help stress test the objectives against the different experiences within the group and help to rate the practicality of objectives. JLE was criticized for the inclusion of overly optimistic objectives from LUL regarding the use of untried and untested technology. Perhaps a more realistic set of objectives up front would have led to a more efficient and effective solution for the JLE.

But, having a shared vision about project objectives and deliverables can become a unifying element within and between actors that helps to address issues of uncertainty - inasmuch as this can become the basis for commitments by parties responsible for delivering key parts of the project/programme. This was especially true during the implementation stage of JLE where much uncertainty existed concerning deliverables. This may have been in part due to a lack of shared vision (or a realistic shared vision) between the different stakeholders involved in the planning and implementation stages).

Stakeholder competencies: Some stakeholders felt clear vision statements and objectives articulated, but the project lacked skills during the implementation phase to satisfy these objectives concisely, and scope creep reigned: "So they had a huge, what I call, project implementation knowledge gap."

It is important that objective remain flexible: Becoming locked into the delivery of precisely defined objectives may be a bad thing as it is unrealistic to think a projects objectives can remain unchanged.

**Table 3.10: JLE ORH#1 context specific responses**

| ***ORH#1 - Traditional criteria relating to cost overruns, completion dates, generation of travel time savings for users and rates of returns to investors are inadequate measures of success in the 21st Century as sustainable development concerns become increasingly critical both globally and locally.*** |
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| *Closed v open system approach*: Project planners in the UK context need to be aware that MUTPs may be treated as both 'open' and 'closed' at different stages, and for different reasons for example:<br>• The JLE was treated as a closed (or 'frozen') system in terms of financial (demand) modelling and appraisal as part of the business case assembly;<br>• The JLE was treated as an open system in terms of accommodating broader elements that were ultimately a major part of the justification of the project . The JLE would not have gone ahead on the strength of the CBA alone. |
| *Models and analytical tools*: It is clear from PHR and HLR interviewee responses that current project appraisal and evaluation tools, methods and processes are not broad enough |

to take into the wide number of project factors required for appraisal consistent with c21st knowledge of project impacts. Consequently, it must be concluded that dependence upon these outdated tools, methods and processes alone is unlikely to deliver a holistically successful MUTP that is a MUTP which is judged successful by the majority of key stakeholders.

Key issues associated with the current appraisal and evaluation 'toolbox' are perceived to be (HLR):

- short term 'costs' are perceived to be more tangible than long term 'benefits', the current methodologies are biased towards the short term, when appraisal should consider ranges more in tune with the lifespan of the project, and the time required for evolution of benefits;
- the need to understand that (particularly) political influence is likely to override the outputs from the use of traditional tools, methods and processes
- the shortcomings associated with the current toolbox are not adequately explained to decision-makers;
- the inconsistent treatment, mainly by sponsors/proponents of MUTPs such as JLE, as projects that are both 'open and closed systems' and as both 'commodities and services' at different stages in their lifecycle - initially as closed systems and commodities so as to facilitate demand modelling and business case assembly and later as open systems and services when there is a need to include broader objectives capable of adequately justifying the project when faced with apparent criticism that demand forecasts ultimately prove to be incorrect.

Notwithstanding these issues, interviewees emphasised the need to enhance current tools, techniques and processes rather than abandon them - by, for example, making use of a wider multi criteria approach that takes full account of future contextual conditions.

Responses indicate little apparent enthusiasm for the use of SDVs as a framework for appraisal due to perceived difficulties in defining 'sustainability' in an operationally assessable manner.

The JLE forecasts were reasonably accurate; this may be in part due to their reliance on Canary Wharf office space projections. During the modeling process, the office projections frustrated modelers as numbers were constantly revised (upwards) but this one large centre of gravity (already somewhat underway) may have simplified analysis compared to say the CTRL which required a consideration for future air travel markets etc.

The Treasury appear to have been very reluctant to give any sort of recognition to regeneration benefits as appraisal criteria until after the project was completed. Canary Wharf and LUL did some pioneering work in this area for the JLE but overall it appears we have very immature methodologies for valuing externalities associated with major infrastructure projects - including factors such as innovation, enhancing skills/knowledge, etc.

*Political will/ influence*: There is a wide ranging perception amongst interviewees that political will/imperative/pragmatism generally overrides outputs from appraisal methodologies that apply such tools/methods and criteria. In this case of the JLE the political perception proved correct, although this may have been more by accident than judgment. Respondents mention the private sector contribution as swaying the balance in favour of the project.

Key decision-makers did not rely on modelling exercises. More influential in this regard were (inter alia) political influence, the impact of the pursuit of political vision (private finance of

infrastructure) whether as statement of political power or for other reasons. The main use of the CBA was by transport engineers who were promoting alternative projects (pet projects) using their superior CBA, their main success from this strategy was the initial refusal of the waterloo to Greenwich Line. The CBA for the JLE was not used to legitimise previously held positions, as the ration was not particularity favourable.

**Table 3.11: JLE ORH#2 context specific responses**

| ***ORH#2 - The new emerging international and local agenda related to vision(s) of sustainable development is multi-dimensional and goes beyond notions of environmental sustainability, as critical as this may be, in that it also concerns inter-related concepts of economic sustainability, social sustainability and institutional sustainability.*** |
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| *SDVs and MUTP planning, appraisal and delivery*: 80% respondents felt SDVs offer a better framework for judging the success of MUTPs – but that that there is still much work to be done in turning SDVs into a meaningful framework that can influence day-to-day decision-making in project planning and appraisal.<br><br>Responses highlighted a need for an operational definition of sustainability, and also a balanced mix of criteria to be included in any appraisal (for example the spatial scope of the appraisal: not just local community impacts).<br><br>The matter of who manages the appraisal was raised. Suggestion that the lack of development of holistic sustainability challenges and related criteria for planning and appraisal may be impart due to the lack of a strategic body to take the lead in operationalising sustainability. |
| *MUTPs, regeneration and SDVs*: Sustainable development visions offer a wider framework for appraisal, but they are currently under defined leading to confusion and inconsistent application: 80% respondents felt SDVs offer a better framework for judging the success of MUTPs – but that that there is still much work to be done in turning SDVs into a meaningful framework that can influence day-to-day decision-making in project planning and appraisal.<br><br>The definition of sustainability needs to find a balance between local, global and intermediate issues: Responses highlighted a need for an operational definition of sustainability, and also a balanced mix of criteria to be included in any appraisal (for example considering the spatial scope of the appraisal: not just local community impacts)<br><br>Professional silos represent effective barriers to the introduction of a more holistic view of SDVs as a framework for project planning and delivery. For the JLE this problem is found more in the public than private sector.<br><br>Greater transparency in the MUTP appraisal and decision making process would help to breakdown/prevent institutional and professional silos from forming.<br><br>MUTPs can catalyze regeneration: The JLE project has been a successful catalyst of regeneration principally the South Bank stations, the Greenwich Peninsular and Canary Wharf.<br>MUTPs are not automatically integrated into their immediate contexts which can limit their impact?: The degree to which an MUTP can catalyze regeneration in an area could be enhanced by the provision of adequate interchanges and feeder routes. These features are not necessarily included in MUTP project plans, but are left for local authorities depending upon their level of initiative. |

Rail investment will not itself spark a substantial process of economic development, but it can be used as an instrument to exploit development potential. The JLE made such an impact on regeneration as the contextual factor were favourable. The project was backed by government policies related to regeneration (and context prepared by the formation of LDDC), and significant private sector investment in an area which worked to create a centre of gravity in east London and attract other developers.

There can be a lack of clarity on the part of stakeholders as to how MUTPs and the development/regeneration projects they spawn might be planned and/or retrofitted so as to achieve key sustainability objectives. Some stakeholders are more proficient than others.

Any form of sustainability appraisals (EIAs, etc) should a key part of the initial project conception, planning and appraisal process - i.e.:

- to determine the need and justification for the project;
- to determine alignments, associated developments and technical specifications etc. that will enhance the sustainability profile of the project and the areas on which it impacts.

MUTPs that spawn significant new suburban development may not be a positive influence on social cohesion - though community building could never be justifiably a realistic objective for MUTPs.

Full community engagement from the outset is seen as a means to mitigate downstream problems associated with stakeholder relations. However stakeholder engagement must be a continuous process.

*MUTPs and retrofitting*: There can be a lack of clarity on the part of stakeholders as to how MUTPs and the development/regeneration projects they spawn might be planned and/or retrofitted so as to achieve key sustainability objectives. Some stakeholders are more proficient than others.

*National policy framework and SDVs*: In the UK, national planning frameworks (NPFs) potentially represent a positive background against which MUTPs can and should be planned and delivered - especially in terms of establishing relative priorities for MUTP delivery and obtaining political and financial commitments. However, contextual problems are seen to include:

- NPFs becoming a hostage to political expediency;
- the need to acknowledge that NPFs should represent a framework rather than a rigid, inflexible plan and will need constant monitoring and updating;
- NPFs would need to be all-embracing in regard to the prioritisation of manifold stakeholder agendas and sectoral issues and also balance national needs with regional/local concerns;
- UK (including the civil service) has no track record in the sort of strategic thinking that should accompany the establishment of NPFs.

*Institutional learning*: Professional silos and current entrenched project management thinking represent effective barriers to the introduction of a more holistic view of SD in project planning and delivery.

### 3.4.6 Responses to JLE overall research questions and hypotheses: Lessons of a potentially generic nature

**Table 3.12: JLE ORQ#1 generic responses**

| ***ORQ#1 - What constitutes a 'successful' mega urban transport project (MUTP) in the 21st Century?*** |
|---|
| *'Success' and project objectives*: Key stakeholders, project planning and delivery agents must take account of the high probability that new objectives will emerge over the course of the project planning, appraisal and delivery period as a result of changing contextual elements. These contextual elements may be intra or extra to the project and will include emerging/changing stakeholder agendas.<br><br>Emergent objectives, although attributed with muddling through and piecemeal decision making, may not be entirely negative as they can act to enhance the ultimate sustainability of a project by helping it adapt and focus according to changing contexts. However the ultimate success of the emergent objectives will be partially depend upon the relevance the longevity and of the contexts to which the project adapts. Some supposedly 'visionary' contexts may be judged in the passing of time as short term fads.<br><br>Early project objectives tend to be limited to a 'least cost' solution for upgrading existing facilities. This narrow view makes the project especially vulnerable to 'bolt on' objectives.<br><br>Evolving objectives are also highly likely, as the project progresses through the planning and appraisal stages. This evolutionary process can be seen as a positive as it helps to shape the project to better suit its contextual influences. However there needs to be some form of accepted tolerance defined for each objective, to limit the chances of evolution turning into scope creep during the detailed design process. This may be achieved through more rigorous definition of objectives and their scenario or stress testing for robustness.<br><br>The need for clear, robust and consistent set objectives up front: Project objectives (including those associated with project and agency roles/functions and performance indicators) should be clearly set at the outset and fully disseminated to all stakeholders. However these upfront objectives should not be seen as a project straight jacket. It should be understood that objectives may need to adapt in response to changing stakeholder agendas and other contextual influences, and new objectives may be added at a later date.<br><br>In light of this, it is clear that all key stakeholders should be involved in setting project objectives - not merely consulted 'after the event'. A multiple stakeholder consultation will improve the overall robustness of the objectives.<br><br>MUTP objectives should reflect the degree of interaction they are anticipated/expected to have within the areas they traverse and impact upon, for example different phases of the project life cycle, and/or the economic and social contexts.<br><br>Project objectives and associated impacts should be based upon clear policy statements where possible thus recognising the use of MUTPs as agents of change. This is especially true of objectives relating to social and environmental sustainability.<br><br>Multicriteria analysis would provide a useful tool for ranking objectives. Wherever possible, MUTP objectives should differentiate between those objectives that are:<br>• core/essential, and represent the fundamental reason why the project is being implemented, and;<br>• those that represent perhaps less certain but nevertheless desirable project |

outcomes.

The process of differentiation should be achieved with consultation of multiple stakeholders via a multiple criteria analysis. Having such a categorisation will enable a fairer and more consistent approach to be adopted to project appraisal and evaluation.

Project objectives should be capable of being operationalised in such a way as to be meaningful to all stakeholders. For example there is confusion over the definition of 'sustainability' and its relationship to objectives.

Projects like JLE that have wider objectives which suggest they are more a service than a commodity and have potentially far-reaching impacts (and are likely to result in a commitment of significant public sector resources) ought to be debated and scrutinised in such a way to make such objectives explicit.

MUTP objectives should recognize the difference between delivering a product/commodity and a service. MUTPs are often a commodity which delivers a service. An imbalance of objectives set out during the early planning phase, which do not take into account these fundamental distinctions during the definition of objectives, may inhibit the projects progress in later stages of the project life cycle.

Early cost, programme and quality data must be treated with caution - as should predictions about the beneficial nature of project impacts. Projects often arrive to the stage of bill deposition without being fully defined, and are subject to the contextual forces acting at the time of the formation of the act (e.g. availability of finance, or revisions to the Health and Safety Act), which could result in significant project changes, not least to project cost and programme. In order to avoid not overly raising expectations of MUTP outcomes, project data should be released:

- only when key route and other specification details have been effectively 'frozen' and are thus reasonably 'certain';
- only when accompanied by a suitable cautionary note regarding its (in)accuracy.
- here it should be noted that there exists a classic civil service mantra regarding the handling of stakeholder expectations - 'under promise, over provide'.

When setting objectives regarding financing, funding and risk share, there is a need to ensure that an audit trail is established which is capable of tracking transactions that might otherwise become opaque as a result of so-called 'commercial sensitivity'

Project objectives should acknowledge that the benefits/costs and impacts associated with MUTPs are:

- often very difficult to discern at the outset
- often only realised in the long-term
- often unexpected

Objectives for MUTPs should provide for the establishment of measurements and systems/processes that enable clear and transparent appraisal and post-project evaluation of performance on a consistent and accurate basis.

There is a balance to be made between the ratio of time and investment made during the planning/appraisal and implementation stages. A compressed planning stage can force the project to make high impact decisions without fully exploring the benefits of options with all necessary stake holders. Plans are often unfinished before they are submitted for contract causing cause confusion and uncertainty during the implementation phase.

**Table 3.13: JLE ORQ#2 generic responses**

| ***ORQ#2 - How well has risk, uncertainty and complexity been treated in the planning, appraisal and evaluation of such projects?* ….and….**<br><br>***ORH#3 - The level of competence in decision-making and planning in today's fast-changing world is best assessed by the adequacy of the treatment of risk, uncertainty and complexity and sensitivity to context – all of which are important demands on Strategic Planning.*** |
|---|
| *Community engagement as a means to mitigate RUC*: Full community engagement from the outset, coupled with stakeholder monitoring during the implementation stage, is seen as a means to mitigate downstream risk, uncertainty and complexity associated with stakeholder relations.<br><br>Lobbying should be acknowledged as potentially playing a key role in shaping MUTPs and knowledge in this area is extremely important for project promoters |
| *'Control' of planning and delivery process*: A project is certain to change throughout its life cycle, due the interaction of the project and its context, and that the skill in managing such a project is keep the project on track, but consistent with the changing contexts. In other words: keeping tight control of a dynamically changing project which is responding to a dynamic context. |
| *Path dependent 'best practice'*: Relevant experience from other projects can be a means to mitigate risk provided it is applied in a context sensitive manner. However context sensitive experience transfer is fraught with risks, many of which may be difficult to spot in advance. |
| *Robustness and adaptability*: A project planning process should advance a project up to a certain stage of maturity pre Royal Assent with some form of flexibility built in to allow the project to respond to the prevailing political, social and economic contexts post-Royal Assent.<br>*RUC and the pace of change in the 21st Century as context for MUTP planning and delivery*: Cost-benefit analysis: CBA has a role to play (and associated narrow contextual outlook) in future appraisals. If a project cannot show a favourable result in terms of traditional appraisal and evaluation it will get nowhere. This backbone of traditional appraisal should then be supplemented by sustainability criteria (although there is a divide whether these sustainable criteria should include unquantifiable)<br><br>Temporal Contexts and the need to appraise over longer time scales: NPV rates and project lifespan used in CBA should be more realistic: "if you assume a 100-year life (for a project) rather than whatever the life is, you get a (much) better return"<br><br>The lack of a holistic definition for sustainability visions: HLR responses suggestion there is a significant lack of holistic sustainability challenges and related criteria for planning and appraisal in the c21st. This may be impart due to the lack of a strategic body to take the lead in operationalising sustainability<br><br>Too many objectives may be detrimental to the project: "I have a concern that we can introduce so many criteria that we make the process of agreeing on a project yet more difficult and experience tells us it's hard enough already. Should these criteria be viewed, yes, but I was reminded of a discussion I had with a senior politician some time ago after I came back from China where I said I think we have lost our way, in China there's still a view of a greater common good where we seem to be obsessed by the rights of the individual. " |

Appropriate responses to increased RUC in the 21st Century are seen to include:

- enhanced competencies in the planning and delivery of MUTPs - especially, the need for a broader holistic view of project planning and delivery processes and enhanced political/tactical awareness of the influences on such processes;
- to help break down barriers and reduce in-fighting between departments responsible for project planning/implementation;
- the need to understand better the influences associated with prevailing and emerging future contexts on the planning and delivery process for MUTPs;
- the need to identify and anticipate through appropriate strategies the contextual changes that may be brought about by MUTPs;
- the need for planning and implementation strategies and programmes that are robust but also capable of ready adaptation in the face of changing needs/demands and contextual items. The use of scenario building and testing is seen as a key means to seek to discern future contextual influences on project planning and delivery;
- the need for greater stakeholder involvement in the planning and delivery process, including the identification of prevailing and emerging/changing stakeholder motives and agendas and more effective consensus building.

*Skills and competencies - project lifecycle*: There is a need for managers and decision-makers who are able to see the project in its entirety (holistically) over the whole lifecycle, especially in terms of RUC. Also there may be a need for different people with different skills are needed to steer the project during different phases of the life cycle).

*Need for 'certainty', accuracy and realism*: Information concerning political motives and policies is critical to the success of early planning stages, and ultimately the proposals passage through parliament. However gaining the required information is not easy as government policy can be somewhat nebulous requiring direct political assistance to identify key points.

Project planning and implementation plans/programmes need to be 'certain' and ‘realistic’ and enable the proper integration of actions and activities by all concerned parties.

Certainty is seen as particularly critical in terms of commitments to the delivery of key decisions, approvals and infrastructure components (by a specified time) on which parallel investment and funding decisions are to be based (by the private sector). Lack of certainty can de-motivate key stakeholders.

*Context scanning*: Regular and sustained monitoring of contextual matters that are likely to influence project planning and delivery is critical if RUC is to be minimised. This requires extensive oversight of all inter-related and inter-disciplinary matters associated with contextual influences and project impacts.

Project planners and delivery agents need to be aware that informal monitoring of contextual matters (notably politics) is often a key activity that takes place through well established (informal) relationships and networks as part of consensus building.

**Table 3.14: JLE ORQ#3 generic responses**

| ***ORQ#3 - How important is context in making judgments regarding Overall Research Questions 1 and 2?*** |
|---|
| *Understanding of context is critical*: The evolving nature of MUTPs: Multiple changing contextual elements result in the evolving nature of MUTPs in that the planning and delivery process responds to the moulding influence of changing contextual elements over time. Projects can mould to contexts either through pro-active or reactive action, and regular project context monitoring is required to ensure the project is fully and constantly context aware to ensure pro-activity is taken when desirable.<br><br>Successful projects are likely to be characterised by planning and delivery agents that possess acute awareness of the importance of context throughout the project lifecycle and undertake pro-active decisions based on their context intelligence which are then reviewed throughout the project.<br><br>The most significant *generic* contextual elements for MUTPs (according to interviewees) are:<br>• stakeholder perspectives/motives/agendas;<br>• political context;<br>• financial context;<br>• MUTPs as agents of significant contextual change. |
| *Perception of context*: Perception of context varies by stakeholder and phase of project lifecycle: private sector stakeholders are seen as more contextually aware, or aware that they are unaware, in the early stages of a projects life cycle and hence seek advice from the appropriate sources. Public sector stakeholders are slower to act/react to contexts but overall tend to consider a broader range of context.<br><br>A keen sense of context must be accompanied by the powers/willingness to take action. In particular there often occur moments in time (contexts) when circumstances are ripe for decision-makers to 'seize the moment'. |
| *Context and the project lifecycle*: The 'project delivery phase' was fraught with contextual impacts which were impossible for project managers and stakeholders to ignore. |
| *Clarity of goals/visions and objectives*: There is evident tension between 'vision' and political practice/pragmatism - politicians are rather uncomfortable with backing a ‘vision’ without some proof that it is going to be successful.<br><br>Political pragmatism is often seen as the enemy of strategic thinking and strategy formulation/implementation. |
| *Mega events as contextual items*: Mega events can have large impacts on MUTPs, especially those which attract high political profiles, or those related to the project financing. |
| *When should projects be frozen?*: Given that many/most MUTPs are necessarily 'evolutionary' in nature, it may be argued that such projects should only be frozen after all contextual eventualities have been taken into account - this may mean that matters such as cost and programme control remain problematical for a considerable period of time. What is also clear is that contextual influences never remain static. This suggests that experience and sound judgement based on extensive stakeholder consultation may be the only realistic means of determining when to freeze a project for the purposes of implementation. However, the prudent project planning and delivery agency will always ensure that project design/scope is capable of subsequent adjustment as far as possible - in terms of scalability, |

connectability and functionality.

Once projects have entered the implementation/construction stage they:

- often have to be modified to cope with unexpected conditions;
- but, are notoriously difficult (costly) to change in terms of their fundamental design specification - this has implications for decisions to use innovative technology.

**Table 3.15: JLE ORH#1 generic responses**

| ***ORH#1 - Traditional criteria relating to cost overruns, completion dates, generation of travel time savings for users and rates of returns to investors are inadequate measures of success in the 21st Century as sustainable development concerns become increasingly critical both globally and locally.*** |
|---|
| Observations concerning this ORH are largely seen as context-specific rather than generic, as noted above. |

**Table 3.16: JLE ORH#2 generic responses**

| ***ORH#2 - The new emerging international and local agenda related to vision(s) of sustainable development is multi-dimensional and goes beyond notions of environmental sustainability, as critical as this may be, in that it also concerns inter-related concepts of economic sustainability, social sustainability and institutional sustainability.*** |
|---|
| Sustainable development visions offer a wider framework for appraisal, but they are currently under defined leading to confusion and inconsistent application<br><br>The definition of sustainability needs to find a balance between local, global and intermediate issues: Responses highlighted a need for an operational definition of sustainability, and also a balanced mix of criteria to be included in any appraisal (for example considering the spatial scope of the appraisal: not just local community impacts)<br><br>There is a need for a broader range of criteria that emphasise 'sustainability'. With this in mind, it is it is suggested that SDV frameworks for MUTPs need to be:<br>• clear, consistent and applicable to all parties in MUTP planning and delivery (making clear all respective roles and responsibilities)<br>• capable of being operationalised by MUTP planning and delivery agents so as to influence decision-making more directly<br><br>Sustainability appraisals should a key part of the initial project conception, planning and appraisal process - i.e.:<br>• to determine the need and justification for the project<br>• to determine alignments, associated developments and technical specifications etc. that will enhance the sustainability profile of the project and the areas on which it impacts<br><br>Professional silos represent effective barriers to the introduction of a more holistic view of SDVs as a framework for project planning and delivery.<br><br>Greater transparency in the MUTP appraisal and decision making process would help to breakdown/prevent institutional and professional silos from forming. |

### 3.4.7 JLE opportunities and threats associated with external factors to the project, such as blocking and inducement mechanisms:

| | |
|---|---|
| **Opportunities:** | • Knowledge has been a blocking mechanism to the development of the JLE & LUL: The knowledge gained whilst planning and building the JLE has updated a number of institutions whose prior capability in the delivery of underground lines had been allowed to lapse. The knowledge sea change provided by JLE is a valuable asset, and should not be allowed to deteriorate again. For example effort should be made to update necessary standards in line with new safety standards, etc.;<br>• technology has been a blocking mechanism to the JLE and LUL: The signaling systems developed for the JLE has again been a costly venture (and the final opening date of the MBS is still uncertain) but there is an opportunity to install such systems over more of the LUL network. The JLE MBS upgrade has been tied in with the northern line upgrade.<br>• further potential for regeneration by the extension of the line: JLE could potentially be extended to Hainault, and also a spur constructed to Thamesmead, an area of London with a distinct lack of rail provision;<br>• enhanced regeneration by further development of feeder routes to service stations;<br>• linkage with Crossrail. |
| **Threats:** | • Principal lessons learnt from the JLE regarding public sector management have had detrimental knock-on effects – such as the privatization of the tube and Metronet;<br>• continued economic downturn - potentially serious impact on the continued development of key hub sites in London;<br>• Crossrail being cancelled will increase pressure on the JLE which is already close to capacity;<br>• the apparent lack of choices regarding the ways and means of introducing retrofitting strategies which may enable MUTPs to better address 21st Century needs, especially those associated with SDVs;<br>• the success of Canary Wharf and JLE has increased the UK exposure to the detrimental effects of the cyclic nature of financial markets and financial services. |

# 4. The M6 Toll Road Motorway


*Photo: http://www.m6toll.co.uk*

## 4.1 Project profile: M6

For each case study (including both UK and international case studies) a Project Profile was prepared, giving details of the project's main features, characteristics and history.

The full M6 Project Profile can be downloaded here: http://www.omegacentre.bartlett.ucl.ac.uk/studies/by_place_2.php and a summary version is presented in the following pages.

# M6 TOLL, WEST MIDLANDS, UK

**OVERVIEW**

**LOCATION: WEST MIDLANDS, UK**
**SCOPE: INTER-REGIONAL**
**TRANSPORT MODE: ROAD**
**PRINCIPAL CONSTRUCTION: AT GRADE**
**NEW LINK: NO**

**PRINCIPAL OBJECTIVES**

**INCREASED CAPACITY**
**CONGESTION RELIEF**
**ACCESSIBILITY**
**LOCAL/REGIONAL TRANSPORT LINK**
**'NO COST TO PUBLIC SECTOR' (EMERGENT)**

**PRINCIPAL STAKEHOLDERS**

**CLIENT: DEPARTMENT OF TRANSPORT**
**CONCESSIONAIRE:**
**MIDLAND EXPRESSWAY LTD (MEL)**
**DESIGN & CONSTRUCTION:**
**CAMBBA (CARILLION, McALPINE, BALFOUR BEATTY, AMEC)**
**MAIN CONSULTANTS:**
**OVE ARUP/WS ATKINS**
**FUNDER: McQUARIE/AUTOSTRADA**

**PLANNING AND IMPLEMENTATION**

**APPROX. PLANNING START DATE: 1980**
**CONSTRUCTION START DATE: 10/2000**
**OPERATION START DATE: 12/2003**
**MONTHS IN PLANNING: 244**
**MONTHS IN CONSTRUCTION: 38**
**PROJECT COMPLETED: 1.5 MONTHS AHEAD OF SCHEDULE**

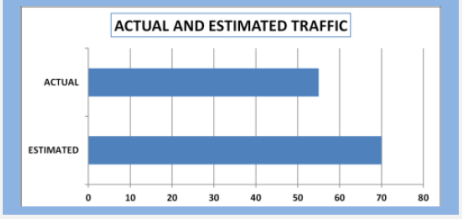
**COSTS (IN 2010 USD)**

**PREDICTED COST: 1.44BN**
**ACTUAL COST: 1.68BN (TOTAL); 0.89BN (CONSTRUCTION ONLY)**
**PROJECT COMPLETED:**
**16% OVER BUDGET**
**FUNDING: 1% PUBLIC : 99% PRIVATE**

**INFRASTRUCTURE QUANTITIES**

**LENGTH: 43KM**
**NUMBER OF JUNCTIONS: 9**
**NUMBER OF BRIDGES: 57**
**COST PER KM (2010 USD): 0.04BN**

**PATRONAGE**




## INTRODUCTION

The first and only road to be built under the UK's Private Finance Initiative, the M6 Toll is a dual three-lane motorway, 43km in length, providing a tolled alternative to a section of the toll-free M6 motorway in the West Midlands conurbation. It opened in 2003.

The road joins the M6 at both ends and has seven junctions with other roads along its length.

## BACKGROUND

Originally known as the Birmingham Northern Relief Road (BNRR), the project's initial objective was to provide additional capacity to relieve a heavily congested section of the M6 motorway. Following the government's decision that the road should be a privately financed tolled link, the objective of providing a congestion free alternative route (rather than relieving congestion on the M6 itself) emerged as a key feature of the concessionaire's business model.

The project was initially developed as a traditional public sector road scheme, with local objections prompting a public inquiry in 1988. However, the inquiry report was never published, as government policy changed to favour private financing of new road schemes in 1989, and the BNRR was chosen as a 'test case'. Tenders were invited for a privately funded scheme in 1990, and a new set of detailed route proposals were prepared by the successful bidder.

As with the initial scheme, the process of developing these proposals involved an environmental impact assessment, published in 1993. This prompted further objections, leading to a second public inquiry (the longest ever for a road scheme) and extensive debate about the environmental impacts of the scheme in 1994-95.

The Secretary of State took the final decision to proceed in 1997, but legal challenges delayed construction by a further two years.

## TIMELINE

CONCEPTION: 1980: NEED FOR ROAD IDENTIFIED

CONCEPTION: 1984: PUBLIC CONSULTATION ON ROUTE OPTIONS – PUBLIC SECTOR SCHEME

INCEPTION: 1986: PREFERRED ROUTE ANNOUNCED, GROUND SURVEYS BEGIN

DELAY: 1988: PUBLIC INQUIRY HELD TO CONSIDER PUBLIC OBJECTIONS TO SCHEME

CONTEXT: 1989: GOVERNMENT GREEN PAPER EXPLORES SCOPE FOR PRIVATE FINANCING OF ROAD SCHEMES

CONCEPTION: 1989: GOVERNMENT ANNOUNCES SCHEME WILL BE PRIVATELY FINANCED

INCEPTION: 1990: PRE-QUALIFICATION – THREE CONSORTIA INVITED TO PRESENT BIDS

CONTEXT: 1991: NEW ACT PROVIDES STATUTORY BASIS FOR ROAD TOLLING

INCEPTION: 1992: CONCESSION AGREEMENT SIGNED, ROUTE PUBLISHED

INCEPTION: 1993: ENVIRONMENTAL STATEMENT PUBLISHED, OPEN TO CONSULTATION

DELAY: 1994/95: SECOND PUBLIC INQUIRY

INCEPTION: 1997: SECRETARY OF STATE APPROVES PROJECT

DELAY: 1998/99: LEGAL CHALLENGES FROM OPPONENTS

INCEPTION: 2000: MEL INVITES TENDERS FROM CONTRACTORS FOR DESIGN & CONSTRUCT CONTRACT: CAMBBA SELECTED

CONSTRUCTION: 2000: DESIGN WORK STARTS

INCEPTION: 2001: MEL'S 53-YEAR CONCESSION AGREEMENT BEGINS

CONSTRUCTION: 2001: EARTHWORKS START

CONTROVERSY: 2003: DIRECTOR OF McQUARIE RESIGNS AFTER COMMENT OVER TOLL LEVELS

DELIVERY: 2003: CONSTRUCTION COMPLETE, ROAD OPEN TO TRAFFIC

DELIVERY: 2005: EVALUATION OF PROJECT

DELIVERY: 2005: AUTOSTRADA SELLS STAKE TO McQUARIE. TOLL LEVELS INCREASE

DELIVERY: 2006: PROJECT REFINANCED

## CHARACTERISTICS

Midland Expressway Ltd (MEL), a subsidiary of McQuarie Bank of Australia, is the concessionaire, with exclusive rights to set toll fees under a concession agreement until 2054. High fees have caused some controversy and in 2005 a parliamentary committee expressed concerns about this independence from national transport policy.

No official data on estimated or budgeted costs are available, although MEL was reported to have raised GBP 0.75bn in finance by 2001[1]. The final project cost was GBP 0.9bn (USD 1.68bn at 2010 prices), including construction costs of GBP 0.485bn. The government provided GBP 18m to rebuild part of a connecting road.

MEL invited construction tenders in 2000 and awarded a design and construct contract to CAMBBA (a consortium of Carillion, McAlpine, Balfour Beatty and AMEC). Ove Arup and WS Atkins were design consultants. MEL and CAMBBA were in dispute for several years after construction.

## TIMELINE ISSUES

There were two major sources of delay to the project. Firstly, the change in government policy towards private financing of motorway construction led to the abandonment of detailed proposals and the preparation of a new scheme.

Secondly, the project faced significant public opposition, leading to two lengthy public inquiries and subsequent legal challenges. This delay, and the risks associated with the planning process, have been identified as a cause of cost escalation for MEL.

## FUNDING

The concession agreement was based on forecast revenue of GBP 100,000 per day, with traffic forecasts (unofficial) suggesting 70,000 vehicles per day. However, in 2005, the project made a loss of GBP 26.5m, with traffic volumes of only 55,000 vehicles per day. A revised tolling strategy was introduced in 2007 to address the deficit.

The project was financed by GBP 685m debt and GBP 215m equity. McQuarie bought out its minority (25%) partner, Autostrada, in 2005 and re-financed the project for a substantial profit in 2006: complaints of windfall profits led to an inquiry into the refinancing deal by a parliamentary committee.

[1] Costs have been converted to USD at 2010 prices, using historic inflation rates and current exchange rates, to allow comparison between projects.

## 4.2 The pre-hypothesis investigation - M6 Toll Road Motorway

### 4.2.1 Introduction

The M6 Pre-hypothesis 'Sensemaking' Report seeks to highlight key patterns of knowledge obtained from the pre-hypothesis interviews, in the form of anecdotes from 10 naïve interviews conducted between July 2009 and January 2010. This was supplemented by additional sense-making information from newspaper/magazine articles, speeches and other reports collected between July 2008 and January 2010. These two sources provided the foundation for the observations in this section.

The data was analysed principally through a manual 'trawl' through all the narrative data, and a summary of the key findings is provided in the following section, (with a more detailed account in a separate report: "Pre-Hypothesis Analysis: M6 Toll Road Data Analysis Using 'Manual Oversight' Method" which can be found on the CD ROM: OMEGA Prehypothesis and Hypothesis Led Reports\OMEGA CENTRE - M6 PHR Report - Final.doc). As a overview of the following summary discussion, Table 3.3 in Appendix 26 provides a useful insight into the key themes that arose from the sensemaking analysis.

### 4.2.2 Summary of findings

**Pivotal events/decisions**

The decision to pursue the project as a PFI toll road (rather than as part of the existing motorway network) reflected a change of status from that of a relief road for Birmingham to a new toll road, to be pursued as a PFI. The decision was taken by the Conservative Government, but later endorsed by the in-coming Labour Government in 1997 in what represented a significant 'about face' due primarily to financial constraints on the public purse.

**Project background and context**

The background context of the project was a perceived long-term under-investment in national motorways. It was also considered that the complex nature of motor vehicle journeys on the M6 made such roads essential for personal and freight movement in support of the UK economy.

**Need/justification for the project**

Most (but not all) stakeholders felt there was a clear perceived need for the project due to the widespread congestion on the M6 motorway – for them, the only controversial aspect of the project was that it was to be tolled.

**Setting project objectives**

Interviewees suggested it was critically important for central government to set very clear objectives for PFI projects It was furthermore suggested that project objectives were (excessively) influenced by the concessionaire (Midland Expressway Ltd - MEL) when defining the road as a "tolled congestion free alternative" to the M6.

**Perceived v actual project objectives**

It was variously suggested that there were different stakeholder perceptions of the role/function of the project and thus its objectives. The business community maintained that

the road was needed to ease congestion on the M6, while the local authorities wanted a "free-flowing" M6 to stimulate economic prosperity in the area seen to be derived from the continued economic growth in SE England.

Evidence also emerged of conflicting objectives, whereby local authorities had wider agglomeration objectives, whereas MEL stated categorically that they were *only* interested in building and running the project as a business and thus ultimately the traffic and net revenue it generated.

**Role and influence of politics**

Key political decisions concerning the planning, appraisal, delivery and operation of the project were taken by the Central Government prior to the public inquiry (PI), so as not to jeopardise the project's viability as a PFI. It was seen by central government to be a 'flagship' PFI and a possible forerunner of other UK private sector-financed infrastructure projects, possibly even for the entire national motorway network.

After the Labour Government came to power in 1997 there was a sense that despite the strategic intention to pursue public transport-led policies, it could not afford to block the M6 Toll as a PFI because of political sensitivities - not least because the project at the time was in danger of stalling. In this sense, the political context and timing of these project developments were *critical*.

More specific political influence was said to have taken place during the political decision-making that ensued, with evidence emerging of:

- political short-termism,
- transport considerations holding sway over environmental concerns; and
- the project appraisal process being biased towards political considerations rather than the findings of the CBA.

**Consultation process**

Early opposition to the project was minimal when it was conceived as public road, but this changed when the project became a PFI toll road. Private sector interviewees saw the consultation process that took place as 'successful', while others perceived it simply as a rubber-stamping exercise. Some suggested that opposition groups had little impact because they lacked a clear focus and because the project was too distant from the 'spotlight' which was more usually focused on developments in the South-East.

**Planning and implementation issues**

Interviewees generally considered that the overall planning, appraisal and delivery process for the M6 Toll Road was both rapid and straightforward. The project was driven by the Department of Transport (DoT) rather than the local Highway Agency (HA), and the DoT relied on MEL to prepare Orders and make provision for planning and implementation processes (and by implication, the appraisal process, as well).

Negotiations regarding matters such as construction standards that were likely to cost MEL more money became 'difficult', and central government was seen as 'naïve' in dealing with MEL – for example, by letting MEL set the tolls.

There was also a series of *unexpected* problems that caused delays – for example, unforeseen piling issues and the national outbreak of foot and mouth disease.

**Risk, uncertainty and complexity**

Sources of private sector risk were seen to be derived from the fact that MEL funded the public inquiry which ran for much longer and was more expensive than originally anticipated.

**Trust and transparency**

Trust and transparency issues raised by interviewees mainly centred on the (excessively close) relationship between the concessionaire and central government. Opinions varied along sectoral lines regarding the degree of transparency that characterised MEL's dealings – i.e., private sector interviewees close to the project perceived MEL to be an open and transparent organization, whilst those 'on the outside' saw it as distinctly opaque.

**Appraisal methodology, process and tools**

Project appraisal was considered as being more dependent upon political decisions than any techno-economic rational derived from (for example) CBA. The policy and legislation backgrounds were also seen to be key contextual significant elements in appraising projects.

The inputs to CBA exercises were widely perceived to be flawed, and all interviewees suggested that there were serious shortcomings in the model(s) used to appraise the M6 Toll. The appraisal of (and eventuall justification for) the project was mainly balanced in favour of economic considerations – i.e., reduction in congestion and subsequent travel time delays – and not the environmental grounds.

Interviewees suggested the need for a broader and more balanced approach to project appraisal methodology that reflected different agendas/needs/concerns and timescales;

**Project operations phase**

Observations from interviewees *in all sectors* suggested that decisions regarding the setting of toll levels by MEL predominantly demonstrated a distinct discrimination *against* HGVs, as a means to minimise wear and tear on the road.

**Notions of 'success' and 'failure'**

The weight of opinion amongst interviewees was that the M6 Toll Road is essentially a "qualified success." In terms of defining 'success' and 'failure', interviewees noted that context, and stakeholder perspectives, were critical. Responses further suggested that success/failure can only realistically be examined in relation to a project's original objectives (though no mention was made of a project's 'emergent objectives').

## 4.3 The hypothesis-led investigations – M6 Toll Motorway

### 4.3.1 Responses to overall research questions and hypotheses

A total of 10 Hypothesis-led research (HLR) interviews were conducted from June 2009 to February 2010. A copy of the interview questionnaire and index sheet is attached at Appendix 22.

The following comprises a summary of the main findings from the HLR interviews in relation to OMEGA's Overall Research Questions and Hypotheses. The full report on the HLR phase for the M6 Toll Road case study (which contains many other important generic and

project-related observations) can be found on the CD ROM: OMEGA Prehypothesis and Hypothesis Led Reports/OMEGA CENTRE - M6 PHR Report - Final.doc.

**ORQ#1 - What constitutes a 'successful mega urban transport project (MUTP) in the 21st Century?**

#### 4.3.1.1 Project objectives

Interviewees largely saw MUTP 'success' in terms of the project's ability to fulfill its original objectives - especially those relating to time, cost and quality (i.e., fulfilling the 'iron triangle' criteria). This, it was suggested, is perceived to be more easily achieved *if* project planning and appraisal is accompanied by: clear objectives, processes to identify unintended project consequences, and (where appropriate) a drive to deliver agglomeration benefits.

As regards the M6 Toll Road, interviewees considered that 'project success and failure' should essentially be judged in terms of: whether it met its stated objective (i.e., providing a congestion free alternative to the M6); delivery within and/or at no/minimal cost to the public purse, and; minimal environmental impact.

One interviewee suggested that by the private sector offering government a potential 'win-win' solution it would be seen as the best way of securing project success. As one respondent put it: "".....it wasn't privatisation at all costs, it was this 'win-win' situation, of providing an opportunity to privatise something and actually make sure that the thing delivered its primary objective at the same time. I actually think it was quite an elegant solution to a problem in that sense."

#### 4.3.1.2 Political power and champions

Political influence and support at all levels of government was *not* seen to be a critical factor in the case of the planning and delivery of the M6 Toll Road. Moreover, there was little evidence to suggest that a single, readily identifiable political champion was needed to drive the project forward. That said, interviewees considered that MUTP planning (in particular) is typically influenced by political forces. In the case of the M6, special mention was made to: the decision to pursue the project as a PFI, which resulted from political influence in the early planning stages; the close working relationship between the Midland Expressway Ltd (MEL) and government when determining the terms and conditions of the concession. Some respondents claimed that the political decision to pursue the project as a private-finance-initiative (PFI) meant that: government and politicians appear to have done their utmost to create favourable conditions for MEL and, in turn such considerations overrode the original imperative to reduce congestion on the M6.

The value of policy frameworks and long-term strategic planning for MUTPs were not seen by respondents as being undermined by short-term political processes and imperatives. Some interviewees, suggested however that political influence was manifest in the changing status of the project from a 'normal' public sector motorway (relief road) to a PFI Toll Road; a proposal that was ultimately supported by *both* major political parties, despite the very evident need to overcome M6 congestion problems. Other interviewees suggested that there was a need at the time to launch the 'right project' at the 'right time', given the prevailing political environment.

#### 4.3.1.3 Vision, strategy and project evolution

Like the CTRL, the M6 Toll Road appears to have evolved over time in response to a number of changing needs/demands and contextual influences. However, unlike the CTRL, this evolutionary process seems *not* to have been gradual, but rather a rapid response to a change in a government's vision/strategy – in which pursuit of the project as a PFI supplanted earlier intentions to construct a public sector relief road. Based on interviewee responses, this change in vision/strategy (and the implications associated with it) was *not* fully communicated to all key stakeholders. As a result, there were many discrepancies in interviewee perceptions of what the principal project objectives actually sought to address.

Observations offered by interviewees in relation to questions about vision/strategy for the M6 Toll Road were as follows:

- there is a need for clearly defined project objectives as expressions of vision/strategy (which should be well explained to all concerned stakeholders);
- only lukewarm support was offered for the notion that new and emerging visions of sustainable development would offer a better framework for judging project 'success';
- policy frameworks and vision/strategy for the project were undermined by short-term political processes/imperatives;
- project 'vision' *should* supplant any over-dependence on techno-rational methods of forecasting project need and demand if MUTPs are to act as effective 'agents of change' (so long as transparent and honest explanations are given as to why a project should be taken forward);
- the rationale and vision for the M6 Toll Road was *ostensibly* very straightforward (namely, to address traffic congestion on the M6) but this became obscure once the project evolved into a PFI; and
- the 'vision' embodied in the project objectives *should* be set against the background of National Planning Frameworks.

#### 4.3.1.4 Project appraisal

Interviewees indicated that current pre-project appraisal tools, (including CBA) remain a vitally important means of assessing the likely performance of a MUTP – and that in this sense, fundamentally- project performance *should* continue to be measured against the objectives that were originally set for it.

Some respondents suggested that a wider spectrum of criteria (including concerns about such matters as sustainability, economic growth, employment as well as other social criteria) should also be included in the appraisal methodology. However, as in the case of the CTRL and JLE, other interviewee considered that such criteria have yet to be successfully operationalized.

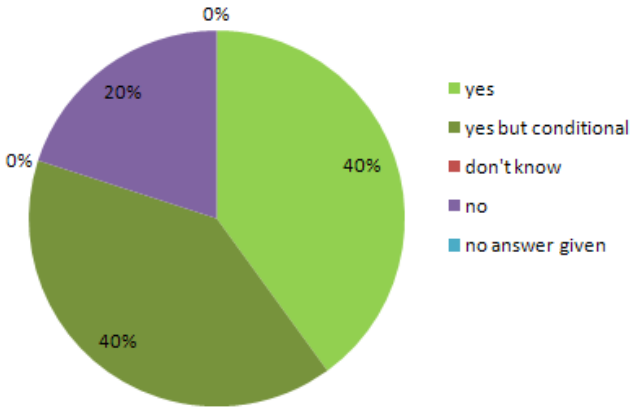
Interviewee responses overwhelmingly concluded that the M6 Toll Road was based on an *economic cum financial rationalist* model that treated the project as a discrete 'closed system'. Some apologists of this approach argued that this was essential as a means of determining whether the M6 Toll Road could/should proceed as a PFI. In retrospect, this was not seen as inherently problematic provided that all key appraisal inputs and assumptions were fully explained to affected decision-makers and stakeholders.

#### 4.3.1.5 Treatment of risk

Most interviewee responses referred almost exclusively to aspects of 'risk' (rather than 'uncertainty and complexity', as well).

The M6 Toll Road was seen by those interviewed to be essentially "a straightforward and benign project" (see Figure 4.1) and therefore perhaps less vulnerable to risk (especially financial risk). This was seen by interviewees as fundamentally important given the project was a PFI project).

**Figure 4.1: M6 Interviewee responses to Hypothesis 4 – 'Was the M6 Toll Road a straightforward and benign project?'**




Mitigating risk was considered to be a key factor in decision-making processes for the M6 Toll Road. In this regard, MEL were seen to have negotiated a particularly advantageous 'deal' in return for accepting the risks associated with project's planning, delivery and operation. Interviewee responses seem to suggest that to be 'successful', MUTP planners and delivery agents need to be *both* acutely aware of the sources/nature of risk confronted and have in place robust strategies to deal with them. Key sources of risk identified by interviewees were generally coloured by the nature of the case study project (a PFI) and were seen to particularly comprise: reliability of forecasting methods; a capacity to absorb the risk of cost overruns, and; an ability to source funding.

Important risk mitigation measures were seen to include:

- those that were internal to project – such as the use of high quality staff and continuity of key personnel; and
- those that were external to the project – such as use of marketing strategies and behavioural studies to secure high patronage.

It was also noted that MEL sought to mitigate risk by achieving favourable terms for the PFI concession. The context for doing this was favourable in that government were committed to the pursuit of the project as a 'prototype' PFI and were thus keen to ensure that it should *not* fail. In this regard, interviewees considered that the public-private risk share on the project was generally appropriate for a PFI.

#### 4.3.1.6 'Time to breathe'

Some two-thirds of interviewees did *not* see a 'time to breathe' as a positive influence on MUTP planning, appraisal and delivery (see Figure 4.2). Most considered that the planning, appraisal and implementation processes were already too time consuming, especially when there is a self-evident problem to be addressed as in the case of the M6 Toll Road which ostensibly focused on the need to resolve traffic congestion.

This observation was considered potentially important given the very different findings from the CTRL and JLE projects. The M6 Toll Road findings seem to confirm earlier suspicions

that the 'time to breath' concept is perhaps much less relevant (if not detrimental) to straight-forward simple MUTPs (if such phenomena actually exist).

#### 4.3.1.7 'Control' of planning and delivery processes

Over 75% of respondents indicated that 'tight control' is indeed possible for MUTPs (see Figure 4.3) - particularly when there exist clear objectives that are well understood by stakeholders and when projects are relatively straightforward. Such control was also seen as more possible if the project (as in the case of the M6 Toll Road project) is handled exclusively by the private sector. However, it was generally accepted that exerting tight control during the planning period was problematical as a result of competing stakeholder agendas and the inter-play of various political influence, although nothing on the scale of more complex MUTPs.

#### 4.3.1.8 'Planetary alignment' concept

All M6 Toll Road interviewees supported the notion that there are moments in time that present ideal opportunities to take decisive action in pursuit of specific ideas, agendas and decisions (see Figure 4.4). Key to this, it was argued, is 'having the right project and agenda at the right time', especially in relation to political cycles.

It was also suggested by some respondents that 'seizing the day' may override the 'time to breathe' premise – where this takes place - in that "it may well be necessary for project proponents to 'force' the planets into alignment by manipulating their context". While this concept was not elaborated it does introduce a potentially interesting dimension.

**Figure 4.2: M6 Interviewee responses the premise – 'Do projects need time to breathe?'**

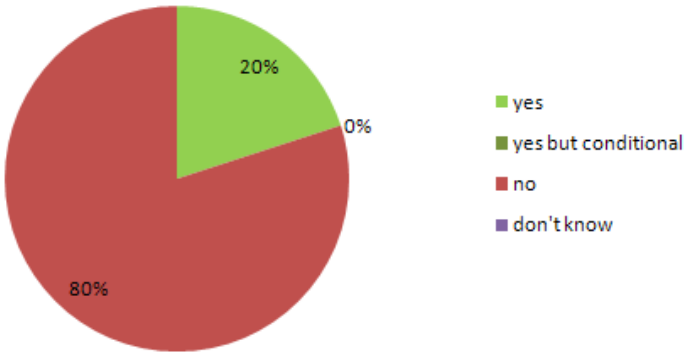



**Figure 4.3: M6 Interviewee responses the premise – 'It is unrealistic to expect every aspect of the planning and delivery of MUTPs to be tightly controlled from the outset'**

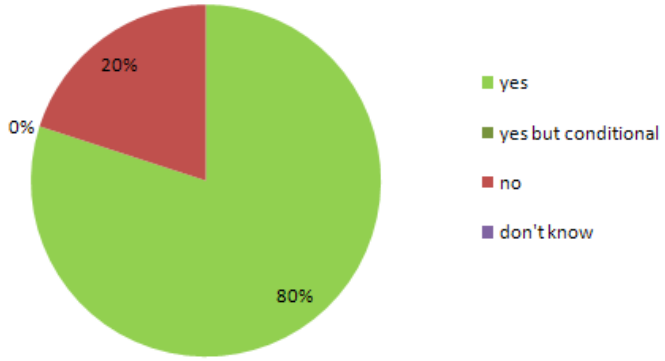
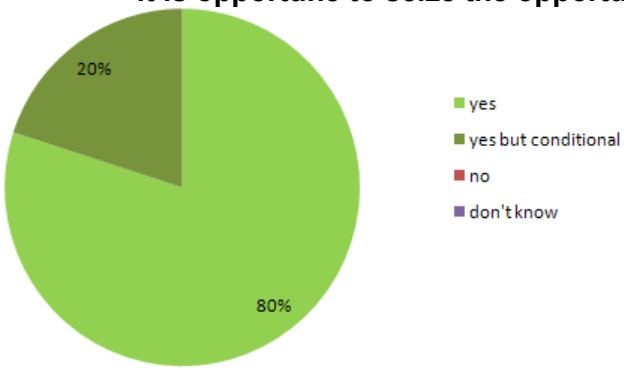


**Figure 4.4: M6 Interviewee responses the premise – 'there are moments in time when it is opportune to seize the opportunity to change the project focus'**




### 4.3.1.9 Negotiation skills and extracting benefits

The key issues identified by the M6 Toll Road interviewees regarding the above themes included the notions that: the public sector lacked sufficient knowledge/experience to extract the 'right' amount of benefits from the private sector in PFI arrangements and that central government was too easily persuaded by business interests rather than other interests; politicians are reluctant to take a tough stances for long term interest in the face of short-term political horizons; and that frequent staff turnover in the public sector organisations during negotiation processes with the private sector was detrimental to both parties.

### 4.3.1.10 Community engagement

M6 Toll Road interviewees indicated that consultation with relevant MUTP stakeholders is always seen as having a positive impact on the development of a project - especially in terms of moulding project objectives (and managing stakeholder expectations). The same source also argued that it minimised conflict in the stakeholder decision-making environment which in turn may assist in speeding-up project delivery although but is less effective if undertaken *after* project objectives have been established.

### 4.3.1.11 National planning frameworks

There was general consensus among those interviewed that MUTPs should only be promoted against the background of an overarching planning framework which can provide greater equity in public sector resource allocation, and demonstrate the value of MUTP contributions to the nation as a whole.

**ORQ#2 - How well has risk, uncertainty and complexity been treated in the planning, appraisal and evaluation of such projects?**

**ORH#3 - The level of competence in decision-making and planning in today's fast-changing world is best assessed by the adequacy of the treatment of risk, uncertainty and complexity and sensitivity to context – all of which are important demands on Strategic Planning.**

Because some M6 Toll Road interviewee responses were generally applicable to both of the above – the responses to ORQ#2 and ORH#3 are covered in a combined manner below.

As earlier noted, most interviewee observations on this subject referred almost exclusively to 'risk' rather than 'uncertainty and complexity'. In this context, it is also clear that most

interviewees considered the M6 Toll Road to be a relatively straightforward and benign project and therefore perhaps less vulnerable to risk, uncertainty and complexity (RUC).

#### 4.3.1.12 Sources of risk

Respondents indicated that the main *generic* sources of RUC in the planning, appraisal and delivery of MUTPs include:

- the reliability of forecasting methods;
- technical (construction) feasibility;
- financial matters (especially cost overruns and ability to source funding);
- the lack of government vision;
- the pace of change and general uncertainty about the future; and
- the evolutionary nature of projects (especially changes to project objectives).

The principal context-specific source of RUC faced by the M6 Toll Road that was identified by respondents was the ability of the project to maximise revenue generation from tolls and the adequacy of these revenues. This fundamental question was seen to underpin the overall financial risk associated with the project - especially important for a PFI where on-going income generation is critical. In this context, the seemingly favourable nature of the concession terms negotiated by MEL was seen by some interviewees as recompense for the financial risk they accepted.

Other important sources of risk were seen as:

- the lack of a back-up strategy for the project - if MEL had withdrawn there was *no* back-up plan, no finance available for the public sector to undertake the project;
- the inherent risk associated with a PFI – one interviewee argued: 'you get the project that the private sector wants, not necessarily the project you set out to provide'; and
- the lengthy planning periods for MUTPs – this increased risk due to the changing nature of key contextual influences.

One interviewee noted: "The original director of Macquarie Bank (the principal funding source behind MEL) argued that they "should set the tolls until motorists start complaining, …..if the motorists weren't complaining then they weren't setting the tolls high enough". As a matter of interests, the director ended up resigning over the latter quote.

#### 4.3.1.13 Responses to risk, uncertainty and complexity

Risk mitigation measures suggested by M6 Toll Road interviewees mainly focused on personnel matters, including: maintaining the continuity of experienced staff; ensuring clear limits of accountability such that key decisions can be taken very quickly. Their responses to issues of external risk included: encouraging high levels of patronage through marketing campaigns and discounted toll levels; undertaking extensive behavioural surveys in connection with the forecasting of toll levels.

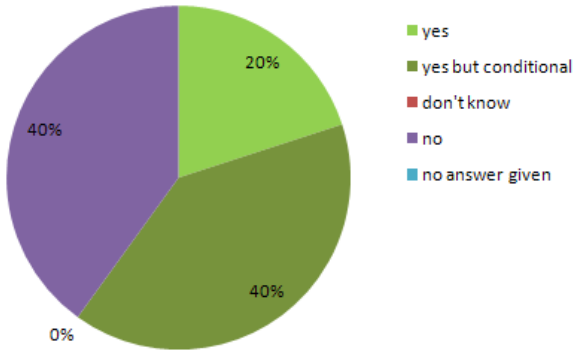
As earlier noted, interviewees pointed to the fact that MEL were able to mitigate risk by negotiating the most favourable terms for the PFI concession (which runs for 50+ years) with the result that much of the pre-project risk was 'handled' by the public sector - which thereby enabled MEL to concentrate on financing and delivering the project itself and its services.

#### 4.3.1.14 Project risk transfer/balance

Responses indicated an approximately equal distribution of views concerning the appropriateness of risk share between the public and private sectors in regard to the M6 Toll Road (see Figure 4.5). Those who saw the risk share as 'adequate' explained that MEL had

shouldered a significant amount of financial risk. Those who disagreed indicated that much of the risk stayed with the public sector so as to create favourable financial conditions for the PFI.

**Figure 4.5: Interviewee responses to question - "Do you consider that the financial arrangements for the M6 Toll Road represent an adequate and appropriate transfer of project and financial risk from the public sector to the private sector?"**




### 4.3.1.15 Risk, uncertainty and complexity and traditional appraisal toolbox

Some interviewees suggested that the 'traditional' toolbox for MUTP appraisal cannot fully reflect all sources of RUC. Particular problems cited were the reliability of forecasts of patronage levels (critical to the financial success of the M6 Toll Road as a PFI), including the composition of traffic, the likely acceptability of toll levels to the general public, and the hauliers relative to time savings. There were *no* specific suggestions regarding the type of tools and techniques that should replace those currently in use.

### 4.3.1.16 Impact of project visions and objectives on risk

The existence of a clear vision for the project and related primary objectives for the M6 Toll Road to offer a congestion-free alternative to the M6 assisted in it being perceived as a relatively straightforward and benign MUTP, certainly as far as its key proponents were concerned. This very clear vision meant that there was less opportunity for multiple competing MUTP stakeholder agendas to affect project outcomes and thereby increase the risk of a very lengthy debate on project objectives, outcomes and impacts.

Even when stakeholders became concerned that the project vision and objectives had changed once the project became a PFI (from the original aim of only *relieving* the M6), the debate was relatively straightforward and focused primarily on what effect the M6 Toll Road would have on congestion relief rather than a whole range of other matters. Ultimately, therefore, it may be argued that risk was mitigated by the existence of rather clear project objectives and the existence of a self-evident problem (congestion) that needed to be addressed.

**ORQ#3: How important is context in making judgements regarding Overall Research Questions 1 and 2?**

### 4.3.1.17 Influence of context

Interviewee's perception of the M6 Toll Road as a straightforward and benign project (see earlier discussion) is perhaps a significant contributory factor to the fact that 'context

awareness' was the focus of only limited discussion in the interviews. The most influential *project-specific* aspects of context were seen to include: economic drivers such as improved connectivity between regions; a general appetite for large projects, often driven by 'big political ideas' (PFI in this case); potential project profitability; the nature of the stakeholder environment - although this was seen in straightforward terms as either 'complex' (many stakeholder agendas present) or 'simple' (few competing stakeholder agendas to grapple with); the positioning of MUTPs as straightforward solutions to self-evident problems.

Key *generic* contextual influences were identified as: tensions between short-term political horizons and the need for long-term planning; the need for 'vision' to supplant an over-dependence upon rationalist forecasting; the current state of public sector finances, which encourage governments to pursue the PFI approach; the currently poor institutional context for MUTP planning and delivery - '.....especially the need for joined up approach in terms of consultation and decision-making'; the inability of forecasting methodologies to take sufficient account of all contextual elements.

**ORH#1 - Traditional appraisal criteria relating to cost overruns, completion dates, generation of travel time savings for users and rates of returns to investors are inadequate measures of success in the 21st Century as sustainable development concerns become increasingly critical both globally and locally.**

#### 4.3.1.18 Attitudes to 'traditional' appraisal criteria and methodologies

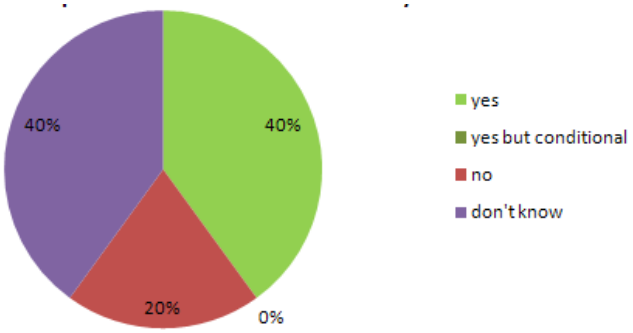
Interviewees generally considered that traditional criteria associated with (especially) time, cost, value for money and quality remain of critical importance. This view resonates with interviewee beliefs that that the M6 Toll Road was treated as a discrete closed system for which transport demand and supply could be accurately forecast. This was not seen as problematical, but rather a necessary process undertaken as a means to support the framing of the project as a PFI.

Only 40% of responses felt the appraisal criteria could be flawed (see Figure 4.6). Some indicated a belief that broader criteria associated with economic growth, sustainable development and social concerns can presently be applied to MUTPs, most notably because they are perceived to be difficult to operationalize. However, there was general acceptance that traditional criteria need to be considered in parallel with concerns about sustainability and that potential MUTPs should be subject to a 'do nothing' scenario assessment.

In regard to the M6 Toll Road specifically, responses suggest that financial considerations ultimately overrode most other criteria – in particular, the PFI could not be seen to fail as far as government was concerned.

Although few observations were made about the shortcomings of traditional appraisal criteria and methodologies, interviewees did suggest that: a key sources of risk for the M6 Toll Road was concern about the ability to accurately assess future usage/patronage levels in the face of considerable uncertainty about how motorists would ultimately value their time relative to the tolls levels; existing forecasting methodologies encounter problems in successfully reflecting all contextual variables, and; it is vitally important to fully explain the limitations of appraisal techniques to decision-makers - in all likelihood this did not take place for the M6 Toll Road given the perception of one interviewee that the traffic forecasts were treated as confidential.

**Figure 4.6: Interviewee responses to the question "Were the appraisal and travel demand models used to forecast potential revenues fundamentally flawed?"**




### 4.3.1.19 Role of 'sustainability' in MUTP planning and appraisal

As noted variously above, M6 Toll Road interviewees remained sceptical about the role of sustainable development visions (SDVs) in MUTP planning, appraisal and delivery. As already indicated, this was largely attributed due to current difficulties in operationalising SDVs so as to make them applicable to MUTP developments. .

While interviewees generally considered that sustainability considerations *should* play a key role in MUTP planning, appraisal and delivery (see Figure 4.7) little was said about *how* this could be achieved. Some respondents commented that 'sustainability' should be seen as encompassing economic *and* social dimensions in addition to 'environment' (with all three seen as having equal weight). However, other interviewees suggested that traditional appraisal criteria need to be considered *in parallel* with sustainability concerns. There was little apparent enthusiasm for the notion that new/emerging visions of sustainable development offer a better framework for judging success.

Sustainability concerns were *not* seen as impacting the planning and appraisal of the M6 Toll Road - primarily because such considerations post-date the project. Indeed, some responses indicate that such concerns would, in any case, have been overridden by the prime objective to ensure that the project would succeed as a PFI. As regards the idea that already built MUTPs might benefit retrofit strategies that inject sustainability concerns into the old project, approximately 60% of the respondents conceded that such retrofit strategies would be possible for the M6 Toll (see Figure 4.8) while 80% felt the project could have been made more sustainable in the first place (see Figure 4.9)

**Figure 4.7: M6 Interviewee responses to the question - "Do you consider that 'sustainability' considerations should play a major part in the planning and delivery of MUTPs?"**

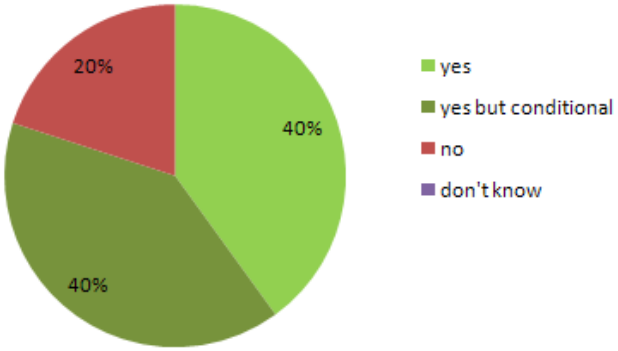


**Figure 4.8: M6 Interviewee responses to the question "Do you consider that it is possible to introduce 'retrofit' strategies that would enable MUTPs in general, and the M6 Toll Road project in particular, to achieve more sustainable outcomes?"**

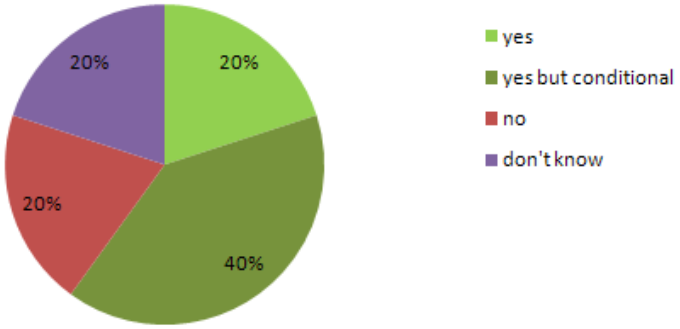
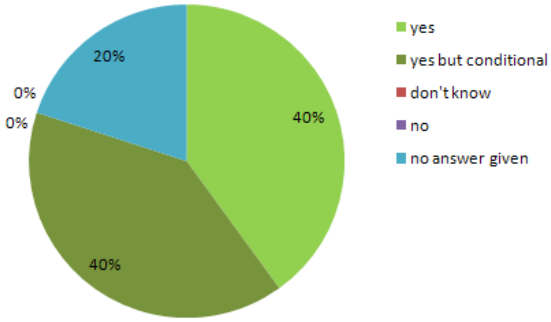



**Figure 4.9: M6 Interviewee responses to question "Could the M6 Toll Road have been planned and implemented in such a way as to enhance the sustainable development of the areas though which it passes?"**




In light of the above responses it would seem clear that few M6 Toll Road interviewees acknowledged the need to view SDVs as multi-dimensional - most treated environmental concerns as representative of sustainability – and indicated that such visions are currently seen as too weak and/or unclear, making practical application thereof almost impossible in the context of MUTPs..

## 4.4 Project findings - 4 Tests: M6 Toll Motorway

### 4.4.1 Test 1: Project objectives

#### 4.4.1.1 Background to project objectives

The nature of the project changed significantly from a 'free at the point of use' Relief Road (1980s) to a PFI Tolled Road (1989 onwards). In 1994 the core project objectives was defined (by government) as the provision of an alternative route (for through traffic) to the very heavily congested sections of M6 within the West Midlands conurbation. In parallel, government was keen to harness private sector financing and positioned the project as a PFI so as to "....bring forward other road proposals which otherwise could not be afforded."

It is important to note that there appear to have been no publicly stated 'official' objectives concerning expected time, cost and quality achievements at the time each was given the go-ahead by government. In light of this, and because the project planning and appraisal period for the project was characterised by changing/evolving specifications, it has not been possible to demarcate between Tests 1a and 1b.

**Project costs**

Initial cost estimates for the project were: 1994 - £270m; 1999 - £300m. Actual costs were: MEL invested £900 million in the design and building of the M6 Toll Motorway - comprising both equity and investment grade debt in a structure to suit both the size of the investment and the long-term nature of the concession, which runs until 2054.

The Select Committee on Transport Seventh Report (March 2005) notes that: "The M6 Toll is a premium quality road that was delivered on budget and ahead of schedule, with minimum use of taxpayer's funds. The total investment outlay to develop, design and build the M6 Toll was approximately £900m, with the only cost to the government being an £18m contribution towards rebuilding part of the connecting M42. The entire development cost (and risk) was transferred to the private sector."

**Project Programme**

The M6 Toll Road opened in December 2003 (some 6 weeks ahead of schedule)

**Project specification**

The M6 Toll Road is believed to have been delivered according to the required technical specification.

### 4.4.1.2 Other emergent agglomeration objectives

**Regeneration, restructuring & economic growth**

Mott Macdonald (2003) produced a report for Warwickshire, Staffordshire and Birmingham, to promote the business case for industrial development and investment along the M6 Toll corridor. This suggested development effects on sites that have easy access to the M6 Toll and that these effects diminish continuously with drive time. However, it does not seem that Local Authorities sought to capitalise on the increased accessibility of the conurbation as a means to stimulate growth/regeneration - the prevailing feeling being that the road would mainly benefit long distance movement outside the region.

**Other transport objectives/achievements**

The Toll Road has made an impact on the reduction of congestion on the M6 - though the balance of traffic between the M6 Toll Road and M6 remains heavily in favour of the latter (especially for HGVs) due to the perceived high cost of tolls. Nevertheless the project clearly facilitates enhanced through traffic movements by_providing a reliable, congestion free alternative to the M6.

**Private financing**

The M6 Toll Road was seen as a flagship PFI project that was delivered on time and within budget with minimum public sector financial exposure.

**Conclusion**

M6 Toll Road was not expected to achieve manifold emergent agglomeration objectives.

### 4.4.1.3 Test 1 lessons (project objectives, M6 Toll)

Drawing from the above analyses and observations of M6 Toll Road developments a number of potential lessons can identified from the Test 1 exercise for future MUTPs. These are summarized below in Table 4.1 below.

**Table 4.1:Test 1 lessons (project objectives, M6 Toll)**

| **The nature and clarity of project objectives** |
|---|
| **Lesson #1:** Published project objectives *do not* always clearly define the precise composition and expectations of projects - as a result, project appraisal and evaluation can become difficult. In particular, published project objectives are often insufficiently developed at the outset in terms of reflecting the degree of interaction/impact that MUTPs are anticipated/expected to have with the areas they traverse and impact upon. This would seem to be especially important for those projects that are expected to function as key agents of change.<br><br>***Remarks:*** the M6 Toll Road represents a relatively 'simple' piece of new motorway infrastructure with no associated development proposals - the resultant published project objectives were accordingly quite clear. Nevertheless, a number of stakeholders remained unclear about the project's status as a 'free flow alternative to the M6' for which tolls could be set by the concessionaire. |
| **Lesson #2:** For reasons of equity and transparency in project appraisal and evaluation, it is most helpful to clearly identify, at the outset, MUTP objectives that are considered to be:<br>• core/essential, and represent the fundamental reason why the project is being implemented, and;<br>• those that represent *perhaps* less certain but nevertheless desirable project outcomes.<br><br>***Remarks:*** project objectives for the M6 Toll Road were straightforward and emphasised the core/essential reasons why the project was to be constructed. |
| **Lesson #3:** Project objectives relating to time/cost/quality are likely to remain important (but not the sole) yardsticks for the assessment of project 'success' |
| **Lesson #4:** Expectations in this regard need to be both clear and consistent so as to facilitate transparent monitoring and evaluation.<br><br>***Remarks:*** time/cost/quality objectives were seemingly set for the M6 Toll Road but it has proved extremely difficult to determine their precise nature at the time the project was given the go-ahead - ostensibly for reasons of commercial confidentiality. |
| **Lesson #5:** It is especially important to define clear objectives for private sector funded projects so as to ensure that the desired 'product' (and outcomes) is understood and ultimately delivered. This may require the establishment of parallel (and wherever possible joint) public and private sector project objectives. |
| **Lesson #6:** In regard to risk-share, it is likely to be essential to ensure that an audit trail is established which is capable of tracking transactions that might otherwise become opaque as a result of so-called 'commercial sensitivity'.<br><br>***Remarks:*** a number of interviewees point out that for PFI/PPP projects the private sector will establish its own set of objectives that do not necessarily reflect the broader aspirations for the project - 'you do not always get the project that you originally wanted, you get what the private sector is prepared to deliver'. Project objectives for the M6 Toll Road appear to have been favourable to the concessionaire - enabling the positioning of the project as a profit-making making venture but at a 'cost' to the utility of the project in terms of |

discrimination against HGVs.

**Stakeholder appreciation/perception of objectives**

**Lesson #7**: Despite the publication of 'official' project objectives by government/sponsors, different stakeholders/stakeholder groups frequently continue to have fundamentally different expectations of projects during the project planning and appraisal process.

***Remarks:*** for the M6 Toll Road, even after the second Public Inquiry, many project stakeholders continued to believe that the project's principal function was to relieve congestion on the parallel motorway network.

**Lesson #8**: Project objectives are often not made sufficiently clear at the outset to all concerned stakeholders - this can prolong debate and confusion about the project's key functions, leading to delays.

**Lesson #9**: Equally, any subsequent modifications to project objectives need to be disseminated in an effective manner to all concerned stakeholders so as to enable proper monitoring and provide transparency.

***Remarks:*** concern was expressed by M6 Toll Road interviewees that (especially) emergent agglomeration objectives were not made clear to key public and private stakeholders - including local authorities and developers.

**Lesson #10**: Achieving widespread agreement on project objectives can prove extremely difficult to achieve, especially when dealing with a fragmented institutional framework and manifold stakeholder agendas. This suggests two things: (1) a need for the involvement of key stakeholders in the setting of project objectives (rather than being consulted 'after the fact') and (2) the employment of skilled consensus builders who are able to exploit and influence well established social/political/business networks.

***Remarks:*** for M6 Toll Road, project objectives appear to have been latterly the product of much 'closed door' negotiations between the concessionaire and government

**Evolving nature of project objectives**

**Lesson #11**: Large/complex MUTPs often experience periods when project objectives need to evolve over a long period of time in response to changing political and other contextual elements. This can be of positive benefit if it is judged that a large, costly, and complex project with potentially far-reaching impacts needs to be exposed to the manifold stakeholders that are affected over a long (but defined) period.

**Lesson #12**: Equally, it has to be accepted that this evolutionary period can be too lengthy and needs curtailment in order to facilitate a timely decision as to whether the project goes ahead.

***Remarks:*** the M6 Toll Road objectives changed subtly over time from a free at the point of use relief road, to a private sector toll road offering a free flow alternative to the heavily congested parallel motorway. This change of status primarily involved only government and the concessionaire.

**Lesson #13**: The above would seem to contradict the view that project objectives (including those associated with project and agency roles/functions and performance indicators) should be clearly set at the outset. Indeed, having clear and consistent objectives at the outset may in fact be positively harmful to a project in not allowing it sufficient time to respond to changing stakeholder agendas and other contextual influences.

***Remarks:*** the existence of very clear project objectives for M6 Toll Road was seen as being essential - in that the project was to be delivered as a PFI, where lack of clarity might well have resulted in the delivery of an undesirable 'product'. In this sense, having a 'time to breathe' was not seen as meaningful or desirable.

### 4.4.2 Test 2: Sustainable development visions and challenges

#### 4.4.2.1 Project achievements in terms of environmental sustainability

The M6 project's main achievements relative to currently prevailing *environmental* sustainability policies/guidelines are summarized below:

| Policy guidance: | Project achievements: |
|---|---|
| 1. Sustainable planning framework should conserve both the cultural heritage and natural resources, taking particular care to safeguard designations of national and international importance: | • Considerable efforts were made to conserve natural resources and built heritage in relation to mitigation works during the planning and delivery process. |
| 2. More sustainable consumption and production and using non-renewable resources in ways that do not endanger the resource or cause serious damage or pollution: | • The project encourages increased road-based trip making (especially long distance) and may therefore be considered to be inherently unsustainable.<br>• However, the provision of a reliable free flow alternative to the M6 motorway means that vehicles are able to operate more efficiently and with fewer emissions. |
| 3. Reduce waste and environmental degradation: | • Extensive efforts were made to minimise environmental degradation and to incorporate mitigation measures where this occurred. |
| 4. Need for Parliamentary scrutiny and appraisal of sustainability (AoS), including strategic environmental assessment (SEA) - directed towards NPSs: | • The M6 Toll Road project proposals and EIA were subject to parliamentary scrutiny and approval (also a Public Inquiry)<br>• However, it is unclear whether the project has been subject to subsequent scrutiny and appraisal of its sustainability (AoS), including strategic environmental assessment (SEA). |
| 5. The proposed provision for new development, its spatial distribution, location and design should be planned to limit carbon dioxide emissions: | • M6 Toll project does not fundamentally provide for new development but rather supports the enhancement of existing economies in London and the South-east and the North West of England.<br>• Arguably, there should have been proposals associated with the project that sought to make more use of the enhanced accessibility of locations close to the Toll Road. |

### 4.4.2.2 Project achievements in relation to economic sustainability

The M6 project's main achievements relative to currently prevailing *economic* sustainability policies/guidelines are summarized below:

| Policy guidance: | Project achievements: |
|---|---|
| 1. Encourage economic development in a way that is compatible with environmental objectives | • In providing a free flow route through the West Midlands, the Toll Road project is perceived to offer direct support to the economies of the NW and SE of England.<br>• In this sense the W. Midlands conurbation is perceived as being 'bypassed', especially given that few (if any) strategies exist to maximize the locational benefits accruing from the project. |
| 2. Economic growth to be supported by adequate public investment | • There is no evidence of parallel investment by the public sector to maximise the benefit associated with increased accessibility of the areas in the W. Midlands close to the M6 Toll Road. |
| 3. Need for speedier decisions on infrastructure projects that deliver key environmental, economic and social benefits | • The project was implemented very quickly (in approx 3 years) once the Public Inquiry had taken place.<br>• However, the overall planning period took a considerable amount of time - 1986-1999 (some 13 years).<br>• It is arguable whether the project justifies speedier decision-making in terms of its key environmental, economic and social benefits within the region where it is located. That said, some would counter that in providing better inter-regional links the project has enhanced economic sustainability to a certain extent. |

### 4.4.2.3 Project achievements in relation to social sustainability

The M6 project's main achievements relative to currently prevailing *social* sustainability policies/guidelines are summarized below:

| Policy guidance: | Project achievements: |
|---|---|
| 1. Background | • The M6 Toll Road route largely passes between (rather than through) existing settlements. Thus community impacts are believed to be minimal.<br>• However, the proposals did involve the relocation/reconfiguring of community recreation facilities at Hatherton Reservoir, part of Chasewater and Jubilee Park playing fields at Hammerwich. Several private recreation facilities were affected – Chasewater Light Railway, Go kart track at Chasewater, Wharf Lane riding stables, Motorcross facility at Wharf |

| | |
|---|---|
| | Lane, part of Old Salteians rugby club.<br>• As noted above, the Mott Macdonald study concluded the positive impact of the project on economic growth prospects in the area. However it does not seem that Local Authorities sought to capitalise on this as a means to foster greater social sustainability through wealth/job creation. |
| 2. Policies should seek to secure access to jobs, housing, education, shopping, leisure and community facilities | • There is no evidence to suggest that policy formulation took place which sought to capitalise on the locational benefits introduced by the project. Indeed the main project beneficiaries are seen to be located outside of the region (e.g. businesses in the NW of England which benefit from greater accessibility to London/SE). |
| 3. Need for improved public participation | • Nearly 8,000 letters of objection to the project were received – concerns were expressed that key decisions regarding the planning, delivery and operation of the project were taken prior to the Public Inquiry by central government so as not to jeopardise its viability as a PFI.<br>• Early opposition to the project was minimal (i.e. when it was conceived as a 'free at the point of use' public road), however by the time of the second PI in the 1990s opposition had risen largely as a result of both it being a PFI toll road and because of issues such as climate change becoming more of a concern. |

#### 4.4.2.4 Project achievements in relation to institutional sustainability

The M6 project's main achievements relative to currently prevailing *institutional* sustainability policies/guidelines are summarized below:

| **Policy guidance:** | **Project achievements:** |
|---|---|
| 1. Streamlined procedures for infrastructure projects of national significance to be introduced (NPSs and IPC) | • The project was seen as straightforward in terms of implementation, but the planning process took some 13 years to complete.<br>• The institutional framework does not seem to have operated in such a way as to hinder the overall process. Given that the project involved no associated development/restructuring initiatives it is perhaps reasonable to suggest that a relatively simple and straightforward and institutional framework was adequate.<br>• Local Authorities and other pressure groups formed informal networks to lobby and/or present evidence in relation to the project. |

#### 4.4.2.5 Summary of project achievements in relation to sustainable development visions

| Project impacts: | Details: |
|---|---|
| Positive aspects: | • The project provides support for economies of NW and SE England through enhanced accessibility.<br>• The free flow nature of the Toll Road allows for efficient use and offers modest relief to the adjacent motorway.<br>• Considerable efforts were made to mitigate adverse project impacts. |
| Negative aspects: | • Fundamentally the project encourages trip making by motor vehicles.<br>• Inadequate attention appears to have been paid to land use-transport integration and the development of agglomeration initiatives. |
| Uncertain aspects: | • Community engagement - communities were kept well informed and consulted but were not engaged in the project planning process. |

### 4.4.2.6 Test 2 lessons

Drawing from the above analyses and observations of M6 Toll developments a number of potential lessons can identified from the Test 2 exercise for future MUTPs. These are summarized below in Table 4.1

**Table 4.2:Test 2 lessons (Sustainable development visions, M6 Toll)**

| |
|---|
| **Lesson #1**: SDVs have the potential to provide a significantly better framework for judging the 'success' of MUTPs. However, at present these are insufficiently developed as operationalised guidance to offer such a framework. Thus, SDV frameworks for MUTPs need to be developed further so as to provide guidance that is:<br>• clear, consistent and applicable to all parties in MUTP planning and delivery (making clear all respective roles and responsibilities)<br>• capable of being operationalised by MUTP planning and delivery agents so as to influence decision-making more directly |
| Lesson #2: SDVs require long-term evaluation cycles which must be supported by a sustainable institutional framework (it is questionable whether SDVs can expect to be delivered in the absence of institutions with well developed 'institutional memory'). |
| **Lesson #3**: Barriers to the application of SDVs as planning and appraisal tools include:<br>• the fragmented nature of the institutional framework charged with the pursuit of sustainability at the local/regional level through major projects, policies, plans and programmes - in particular, the different aspects/dimensions of sustainability are currently being treated in isolation (and divorced from policy and spatial planning);<br>• professional silos - the multi-dimensional nature of 'sustainability' demands an holistic |

view of the complexities associated with MUTPs and the developments/initiatives with which they are associated
- the 'culture' of certain central government ministries (especially the Treasury's apparent aversion to 'vision'.

**Lesson #4**: Interviewees suggest that whilst SDVs are a potentially very important means of judging project success, the lack of workable, operationalised definitions of the various dimensions of sustainability and the consequent unavailability of associated evaluative criteria mean that they are incapable of meaningful application at present in the context of day-to-day decision-making. However, interviewees note the clear need for a broader range of criteria that emphasise the various different dimensions of 'sustainability' - incorporating environmental, economic, social and institutional sustainability. This broader approach must properly reflect the many different agendas/needs/ concerns and timescales associated with different stakeholders.

### 4.4.3 Test 3: Treatment of RUCC

#### 4.4.3.1 Theme 1: Importance of context

**Understanding of context is critical**

The project responded to changing contextual influences exerted by (mainly) central government which saw the original project objectives (relief road for Birmingham and M6) overridden by emergent imperatives associated with the provision of new road infrastructure via the PFI mechanism in view of the shortage of public sector funding. Thus the change in project status from public sector Relief Road (1980s) to PFI Toll Road (1990s) reflects changes in the prevailing political and economic imperatives which are key contextual influences.

**Key contextual influences for M6 Toll Road**

Significant economic drivers - improved inter-regional connectivity; 'big ideas' - especially in relation to the pursuit of the project as a PFI in the face of the lack of available public sector finances. Thus, it was seen that government made strenuous efforts to create a favourable financial context for the project in order for it to proceed as a PFI - and in so doing, handed much of the 'control' over to the private sector; potential project profitability - which was seen as vital in order to underpin the PFI; the nature of the stakeholder environment - seen as largely favourable to the M6 Toll Road project, largely because of its perceived benign nature as a solution to a self evident congestion problem on the M6 (though this has not been borne out in practice due to what are considered to be high toll levels; customer focus - the need to build-up positive customer perceptions of the project so as to encourage patronage over the long-term; location - the project's location affected relatively few stakeholders which meant there were many fewer stakeholder agendas at play than for other, more sensitive projects.

**Response to context**

The need to 'seize the day' was seen by all respondents as critically important - suggesting a clear recognition of the importance of context at particularly favourable moments in time. This is accompanied by the perceived need to 'launch the right project at the right point in time' - especially in relation to the prevailing political environment. However, some observe that it is possible for key players to 'force' the planets into alignment by manipulating context to their own ends.

**Political influence/support as a contextual element**

Political influence/support is acknowledged by interviewees as important - there was a general consensus that key political decisions concerning the planning, delivery and operation of the project were taken prior to the PI by central government so as not to jeopardise its viability as a PFI.

No readily identifiable political champion was identified. Moreover, local politicians had to be seen to be opposing the road on environmental grounds but were actually in favour of it in the hope it would solve the M6 congestion problem.

Interviewees considered that evidence of political influence in the planning and delivery of the M6 Toll Road was characterised by:

- the decision to pursue the project as a PFI, which resulted from political influence in the early planning stages;
- the close working relationship between MEL and government when determining the terms and conditions of the concession. The political decision to pursue the project as a PFI meant that (a) government and politicians appear to have done their utmost to create favourable conditions for MEL and, in turn (b) such considerations overrode the original imperative to reduce congestion on the M6.

**Context and the project lifecycle**

Interviewees observed that the project planning stage is more vulnerable to contextual change than the project implementation stage (a number of interviewees suggested that the project delivery stage can be tightly controlled/managed whilst the planning stage is seen to be 'at the mercy' of the many and varied stakeholder agendas). However, it is acknowledged the project delivery phase was essentially straightforward once the PI process had been completed. Understandably, the operations phase is seen to be especially influenced by the sorts of contextual factors that impact on patronage/customer levels - toll levels are thus adjusted regularly to take account of customer perceptions and are accompanied by operator controlled marketing campaigns.

**Context monitoring**

There is little evidence to suggest that there were explicit mechanisms and procedures for identifying and monitoring contextual forces, except in terms of stakeholder forums/community consultation processes and formal 'planning' procedures that primarily dealt with detailed and day-to-day issues (such as mitigation measures) that existed at a particular point in time.

**Harnessing change agent influences/impacts**

As noted above, there seems to have been a distinct lack of positive strategies (in the form of appropriately tasked and resourced institutions, plans and programmes) to harness the influences/impacts of the project to drive forward plans for the West Midlands.

**Context monitoring relative to pivotal decisions**

The project was essentially moulded by the pivotal contextual decision to pursue the project as a PFI - which fundamentally resulted in its' changed role and function - as a free flow alternative to the M6 rather than a means to address congestion on the M6. However, it is not clear from interviewees whether stakeholders explicitly sought to 'identify, monitor and appreciate the critical contexts that surround pivotal project decision making' in relation to

this very influential event. Instead, it would seem that stakeholders simply adjusted their strategies/positions to take account of the fact that the project objectives were to fundamentally change.

#### 4.4.3.2 Theme 2: Strategy

**Vision and strategy - project evolution?**

In common with the CTRL, the M6 Toll Road project does appear to have evolved over time in response to changing needs/demands and contextual elements. However, unlike the CTRL, this evolutionary process seems not to have been gradual, but rather a rapid response to a change in government vision or strategy – i.e. in pursuit of a PFI approach. Whether this represented a change in 'vision', or simply an expedient means to provide a piece of public infrastructure at no/minimal cost to the public purse is questionable. What is clear is that, based on interviewee responses, this change in vision/strategy (and the implications associated with it) was not fully communicated to all key stakeholders.

Interviewee observations in relation to vision/strategy were as follows:

- there is a need for clearly defined project objectives as expressions of vision/strategy (which should be well explained to all concerned stakeholders);
- clear objectives for PFI projects are seen as especially important - to mitigate risk of not producing the 'right' product for both public and private sector stakeholders;
- policy frameworks and the role of vision/strategy are undermined by short-term political processes/imperatives;
- the need for 'vision' to supplant an over-dependence upon supposedly 'rational' methods of forecasting project need and demand so as to both encompass and exploit the potential impact of MUTPs as 'agents of change' and to provide a more transparent and honest an explanation of why a project should be taken forward;
- the rationale, and therefore vision, for the M6 Toll Road project was ostensibly very straightforward - i.e. a means to address congestion on the M6. This vision became obscure once the project evolved into a PFI with its attendant tolling regime;
- the principal objectives were clear to project sponsors and implementers but not to other 'outsider' stakeholders who still saw the project's main function as delivering relief to the M6;
- in regard to government's strategy for delivery of the M6 Toll Road, it is interesting to note that one HLR interviewee suggested that there was no obvious 'back-up strategy' to cope with a failure by MEL to take the project forward, or in its required form: ".....if MEL had withdrawn there was no back-up plan, no finance available to undertake as public sector project".

Interviewees suggest that 'vision' as embodied in project objectives should be set against the background of National Planning Frameworks and should:

- be set by those responsible for funding and delivery/national government/regional government/politicians;
- be accompanied by a proper acknowledgement that MUTPs are agents of change (i.e. more than simply transport projects) and have widespread sectoral and geographic impacts;
- reflect a clear understanding of all relevant stakeholder agendas - which need to be assessed at an early stage in project planning process.

**Evolving project - relationship with clarity of goals, objectives and appraisal**

There is some evidence of a strong relationship between the successful bidder and central government in terms of shaping the project to suite a PFI approach. Indeed, key political

decisions concerning the planning, delivery and operation of the project were taken prior to the PI by central government so as not to jeopardise its viability as a PFI.

**Lack of co-ordinated Government strategy**

The project appears not to have formed part of a co-ordinated government strategy to deliver agent of change agglomeration initiatives. This point is echoed by HLR responses suggesting a lack of 'joined-up thinking' between government departments in relation to the project. As noted variously above, it is argued that government's concentration on ensuring the success of the M6 Toll Road project led to the ignoring of other potential roles/benefits that might have accrued. Moreover, HLR interviewee observations also suggest that the government had no 'back-up strategy' which could cope with a situation in which potential concessionaires declined to tender for the project.

**Flexible and adjustable strategies?**

As noted variously throughout this report, there is little apparent evidence of a vision-led strategy for the project beyond delivery of a piece of road infrastructure through the PFI mechanism. Also, there is considerable doubt as to whether government and other agencies had any sort of back-up strategy in the event that the PFI approach failed, let alone one that was 'flexible, adjustable and robust'. The adaptability of the M6 Toll Road is also questionable given the very long concession period (50+ years) - which is likely to mitigate its ability to be adapted as part of the 'normal' free at the point of use motorway. The above may stem from the apparent belief that the M6 Toll Road project was essentially straightforward, thus requiring limited robustness and adaptability.

**Strategic components (and impacts) are difficult to identify and quantify**

Interviewees support this premise in that they acknowledge the changing circumstances (contexts) that surround the MUTP planning and delivery process and the impacts this can have on moulding project approach/content. In particular, interviewees suggest that current appraisal tools and methodologies cannot hope to cope with all contextual matters (especially when these are constantly changing) - but suggest the need to improve current tools rather than replacing them.

### 4.4.3.3 Theme 3: Projects as closed/open systems

Interviewees observed that certain generic stages in the project lifecycle are more prone to risk. In particular, the project planning stage, prior to 'project freezing', was seen to be the subject of most risk from outside (open system) influences (political, financial, manifold stakeholder agendas etc.). By contrast, once projects reach the implementation/construction stage, the management process is seen as significantly more controllable and less subject to such external influences.

HLR and PHR responses suggest an overall perception that the project was treated as a 'commodity' and a 'closed system' for which demand and supply could be forecast with reasonable precision. This may, in part, be reflective of the fact that the M6 Toll Road project was effectively frozen once the decision had been taken to pursue it as a PFI - prior to the second PI. Accordingly, interviewees overwhelmingly suggest that the M6 Toll Road was indeed based on an economic cum financial rationalist model that treats the project as a discrete ‘closed system, for which supply and demand can be forecast with reasonable accuracy. In parallel, some interviewees regarded the treatment of the project as a closed system as an important means to justify its revenue generating potential (and thus suitability as a PFI).

**Critical elements of RUC**

The M6 Toll Road was seen by interviewees to be a rather straightforward and benign project and therefore perhaps perceived as being less vulnerable to risk - especially financial risk (which was seen by interviewees as universally important in the context of a PFI). However, mitigating risk levels was considered to be a key factor in the decision-making processes for the M6 Toll Road - effectively MEL were seen to have negotiated a particularly advantageous 'deal' in return for accepting the risks associated with project planning, delivery and operation.

Responses suggest that to be 'successful', project planners and delivery agents need to be both acutely aware of the sources/nature of risk and have in place robust strategies to deal with this. Key sources of risk identified by interviewees were generally coloured by the nature of the case study project (a PFI) and were seen to particularly comprise:

- the reliability of forecasting methods (especially patronage levels and the value of time);
- related concerns about the ability to generate sufficient revenue from operations
- the risk of cost overruns and ability to source funding
- lack of government vision, the pace of change and general uncertainty about the future, coupled with the tendency of projects to 'evolve' over time;

In light of the above sources of risk, important mitigation measures were seen to include:

- internal - personnel matters (maintaining the continuity of experienced staff, proper levels of accountability and the establishment of systems to enable speedy decision-making;
- external - the use of marketing and discounted toll levels to secure high levels of use and extensive behavioural surveys in connection with the forecasting of toll levels.

### 4.4.3.4 Theme 4: Governance, regulatory frameworks and enforcement

**Statutory processes**

The statutory PI process was seen by various stakeholders as:

- simply a necessary hurdle to be 'got over'
- unable to deal effectively with technical issues (which had to be debated outside the main forum)
- overly complex for lay people
- a fait accompli by objectors given that all the key decisions regarding the road had already been taken by government and the concessionaire.

**Extracting benefits from PFIs**

It would seem likely that government created favourable conditions for M6 Toll Road to be undertaken a PFI and that this generally overrode other considerations. Given this background, it was generally considered that greater attention needs to be focused on the following matters:

- the public sector has insufficient knowledge/experience to extract the 'right' amount of benefits and is too easily persuaded by business interests;
- politicians have inadequate bargaining experience and/or the will to take a tough stance in the face of short-term political horizons;
- frequent staff turnover is problematical for both public and private sectors during key negotiation periods.

**National planning framework**

There is general consensus that MUTPs should only be promoted against the background of an overarching planning framework which can: provide for equity in public sector resource allocation, and; demonstrate MUTP contributions to the nation as a whole. However, some difficulties were identified: uncertainty about how NPFs would work in practice; controversy associated with the imposition of major projects on local areas; the impact of political influence as an overriding factor, and; problems associated with long-term strategic planning in the face of short-term political horizons.

**Political will**

Insufficient political will can often become a significant source of risk, but there was little evidence to suggest that this and other influences were effectively monitored throughout the M6 Toll Road project lifecycle. Of particular concern to interviewees was existence of self-evident tensions between short-term political horizons and the need for long-term planning for MUTPs. Key political influences were seen to include:

- the decision to pursue the project as a PFI, which resulted from political influence in the early planning stages (primarily as a means to minimise government expenditure);
- the close working relationship between MEL and government when determining the terms and conditions of the concession. The political decision to pursue the project as a PFI meant that (a) government and politicians appear to have done their utmost to create favourable conditions for MEL and, in turn (b) such considerations overrode the original imperative to reduce congestion on the M6
- the changing status of the project from a 'normal' public sector motorway (relief road) to a PFI. This change in status was ultimately supported by both major political parties, despite the political need to overcome M6 congestion problems

### 4.4.3.5 Theme 5: Relevant project information

**Project interface knowledge**

In essence the perceived straightforward nature of the project effectively 'coloured' interviewee responses. As a result, there was scant reference to the importance of gathering and analysing information concerning the interface between projects and their contexts.

Concerns were however expressed regarding: the ability of traffic demand models and CBA to take full account of all relevant contextual items which impact on project-related information for decision-making, and; the lack of knowledge/information/experience displayed by project sponsors and delivery agents in regard to information needs/gathering at the planning stage.

As noted elsewhere, interviewees were rather more 'comfortable' in regard to the free flow and availability of project information during the implementation/construction stage - indicating a resonant belief in traditional project management systems/skills.

PHR interviewees perceived a clear need for extensive forward planning based on relevant information to take account of all relevant stakeholder programmes that may impact on planning and delivery. These stakeholder programmes may be both inflexible and lengthy, resulting in a need to adjust the 'parent' MUTP programme.

**Risk monitoring**

There is no evidence to suggest that regular and sustained monitoring of contextual matters took place in any formal sense except for those activities associated with particular workstreams (e.g. community consultation, planning forums etc.).

The concessionaire considered itself to be highly attuned to risk monitoring during the project implementation stage but were caught out by unforeseen risks (e.g. foot and mouth disease) and the perceived length and complexity of the project planning process up to and including the PI.

#### 4.4.3.6 Theme 6: Tools/techniques for coping with risk, uncertainty and complexity

**Perceptions of appraisal models and analytical tools**

A broad range of observations on this matter were provided by interviewees. These indicate a rather mixed view of the efficacy of such models and tools, as follows:

- modelling tools were seen as the best available at the time and, whilst 'incorrect in some respects, were not fundamentally flawed. Indeed, current project appraisal and evaluation tools, methods and processes (including the employment of CBA) remain a vitally important means of assessing the likely performance of a MUTP - especially those criteria and tools relating to time, cost and quality. Most importantly, interviewees consider that the fundamental basis for assessing such performance should continue to be whether the project achieves (or is likely to achieve) the objectives that were originally set for it.
- some suggested that a wider spectrum of criteria (including such matters as sustainability, economic growth, employment and other social criteria) should also be included in the appraisal methodology but this was queried by others who considered that such broader criteria have yet to be operationalised in a meaningful way so as to enable their effective measurement;
- interviewees generally adopted a rather conservative view in relation to financial performance criteria for the M6 Toll Road - seen as particularly important for PFI projects, to the extent that such considerations effectively overrode other objectives such as relieving congestion on the M6. As a result, the M6 Toll Road was treated as a discrete ‘closed system’ – in order to determine whether it could/should proceed as a PFI. This was not seen as problematic.
- more specific observations on the use of methods and tools were:
    - CBA was undertaken on the basis of it being part of the wider motorway network as a 'free at the point of use' road, not as a toll road;
    - accurately determining project impacts is extremely difficult and that there is a clear need to monitor outcomes over time;
    - the appraisal process was overly dependent upon traffic model outputs rather than broader concerns. Indeed, whilst the traffic model was large and complex, it was unable to model all aspects of the road system with accuracy – it is suggested that incorrect input assumptions were made regarding the imposition of tolls and the number/type of road links to be included (hence model outputs proved to be inaccurate in terms of predicted traffic mix due to the variable nature of toll levels). One interviewee noted that the traffic models were incapable of accurately representing the value of time - '.....they’re supposed to have very high values of time, therefore small relative time savings should be very important, but it does seem a lot of operators aren’t prepared to pay the toll to cover time savings .....';

- project appraisal was perceived as being more dependent upon political decisions than the 'pseudo science' of CBA.

**Risk management and mitigation**

Key sources of risk, associated predominantly with cost, were identified as: the concessionaire had to bear the costs and risks associated with the planning process which contained many unknowns and uncertainties; risk associated with the expense of submitting bids for the concession; the reliability of forecasting methods (especially patronage levels and the value of time); related concerns about the ability to generate sufficient revenue from operations, and; the risk of cost overruns and ability to source funding.

HLR interviewees emphasised the importance of having experienced personnel present on the project throughout its planning and delivery - such personnel were seen to be sufficiently experienced to cope with any contextual variations that might impact on the application of best practice.

### 4.4.3.7 Theme 7: Project stakeholders

Key lobbying activities were those conducted by Local Authorities and groups such as RHA/CoC in the W. Midlands (relief for M6) and Local Authorities in the NW (enhanced transport links to London/SE). Opposition lobbying came mainly from FoE - who were opposed in principle to new road construction. Against this background it is interesting to note that: the lack of focus in objector campaigns meant reduced effectiveness: objectors were concerned that the PI coincided with other major projects in London/SE, and that they did not have a major issue around which to focus their campaign, and; many different agendas meant it was difficult to focus objectors into a credible force with sufficient power to make their voice heard effectively.

Local Authority positions suggest no strong relationships with community representation. Furthermore, Local Authority positions on the project were varied - both in relation to their expectations of the project and whether they felt able to support it 'in principle': for example:

- support from LAs in the NW focused on the improved links with London and the South East;
- support from the W. Midlands LAs focused on the benefits of traffic relief to the M6 and the stimulus for regeneration/economic growth; and also concern that the W. Midlands would 'get the pain but not the gain'.

It would seem that a number of lobby groups comprised 'professional' objectors (e.g. FoE) who moved from one project to another with no real concern for local residents' issues. Indeed, local residents were principally interested in achieving the best possible mitigation rather than 'in principle' objections.

Effective consultation with relevant stakeholders can have a very positive impact on project planning and delivery - especially in terms of moulding project objectives (and managing stakeholder expectations) and minimising conflict in the stakeholder environment. In broad terms this is seen as facilitating the speeding-up of project delivery but is less effective if stakeholder engagement does not take place until after project objectives have been firmed-up.

**Stakeholder scanning**

As noted above, most interviewees (many of whom were intimately connected with the M6 Toll Road project) display a very keen sense of the nature and agendas of stakeholder groups and networks - and the likelihood that these will change over time. However, again,

no evidence has been uncovered to suggest that there were well established, comprehensive and formal stakeholder scanning mechanisms in place throughout the planning, appraisal and delivery period. It is entirely possible that such scanning mechanisms were not seen as entirely necessary given the perceived essentially 'benign' nature of the project as a means to address the self-evident congestion problems on the M6 and as one for which environmental impacts were not seen to be especially problematic.

**Consensus building**

Consensus building did not emerge as a significant factor in interviewee responses. Again, this may be because of the essentially non-controversial nature of the project which was seen to be addressing an obvious problem in the most cost-effective manner (i.e. through the PI mechanism, at minimal cost to the public sector). As a corollary, no significant project champions were identified.

Whilst interviewees provided no evidence to suggest that systems/processes were in place to identify project winners and losers, it is clear that such assessments did indeed take place via: the EIAs undertaken for the project; the two Public Inquiries that were held. In addition, interviewees perceived significant difficulties in determining the appropriate balance between winners and losers - in the case of the M6 Toll Road there is a trade-off between adverse environmental impacts and greater mobility/accessibility.

### 4.4.3.8 Theme 8: Trust and transparency

**Background - trust and transparency**

'Trust and transparency' did not receive the same level of attention amongst interviewees as those involved in the CTRL case study. This may be a product of its essentially straightforward nature, or perhaps a reflection of the general acceptance by interviewees that the arrangements associated with a PFI must necessarily be less transparent than for a purely public sector project.

Issues raised by interviewees mainly focused upon the rather close relationship between the concessionaire and government, and their dealings with other stakeholders during the consultation process and the PI. Thus, opinions regarding the degree of transparency that characterised MEL's dealings with government varied considerably - private sector interviewees close to the project perceive MEL to be an open and transparent organisation whilst those 'on the outside' see it as distinctly opaque. .

Some also suggest that the changing nature of the project's role and function (from a relief road for the M6 to a free flow alternative to it) were never fully explained to all affected stakeholders - those closer to the project not surprisingly observed that this change was well publicised.

**Institutional learning**

There is little evidence of institutional learning on the part of promoters and other stakeholders - presumably because: the project itself was a relatively straightforward piece of road infrastructure; few details have emerged as to the precise nature of the way in which the PFI aspect of the project was formulated. As noted above, interviewees considered that valuable project lesson learning/sharing takes place in an informal manner as personnel move from project to project - the availability of relevant project-based experience by individuals is seen to be critically important.

#### 4.4.3.9 Test 3 lessons (responses to risk, uncertainty and complexity for M6 Toll)

Drawing from the above analyses and observations of M6 Toll developments a number of potential lessons can identified from the Test 3 exercise for future MUTPs. These are summarized in Table 4.3.

**Table 4.3:Test 3 lessons (Responses to RUCC, M6 Toll)**

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| **Understanding of context is critical** |
| **Lesson #1**: Changing contextual elements contribute to the evolving nature of MUTPs - the planning process may become subject to fundamental shifts in the raison d'etre for the project as a result of contextual change brought about by political mantras/policy (such as that associated with the pursuit of the PFI approach. This makes context awareness and context sensitivity especially significant if 'successful' projects are to be delivered. |
| **Lesson #2**: Project success can ultimately only be judged against the background of sound knowledge of the context that prevailed during project planning, appraisal and delivery |
| **Lesson #3**: Political influence is frequently seen as the most powerful force in regard to the project planning and appraisal process. Thus, contextual change brought about by short-term political horizons/cycles frequently constrains the ability of sponsors and delivery agencies to implement MUTPs and their attendant plans and programmes, especially when these have a necessarily long-term perspective due to lengthy project lifecycles. The tendency towards 'short-termism' on the part of politicians and civil servants suggests both an inability and lack of desire to effectively scan existing and future context – rather, the focus is on defining what is practical and achievable in the short run. |
| **Context awareness** |
| **Lesson #4**: There occur moments in time when it is opportune to 'seize the day' and take decisive action - it would seem that MEL took advantage of favourable political and economic circumstances to wrest a 50+ year concession on favourable terms. This suggests that successful project planners and delivery agents are indeed very aware of both 'context' and its changing nature (perhaps in an instinctual rather than formal way). |
| **Context and the project lifecycle** |
| **Lesson #5:** MUTP planning and delivery is especially vulnerable to RUC because of the lengthy processing and appraisal periods. By contrast, the project delivery phase is seen as less contextually sensitive - the implementation phase is seen as more 'controllable'. For the M6 Toll Road, it is observed that the project operations phase is also seen as contextually sensitive, requiring MEL to adjust toll levels accordingly. |
| **Lesson #6:** Procedures need to be put in place to ensure that contextual change is constantly monitored, enabling strategies, plans and programmes to be adjusted in light of early warnings of the need for corrective action resulting from such monitoring. |
| **Institutional support** |
| **Lesson #7**: An institutional framework needs to be established which is able to address the multiplicity of expectations that MUTPs inevitably engender. |
| **Clarity of vision, goals and objectives** |
| **Lesson #8**: MUTPs are subject to tensions between 'vision' and political practice/pragmatism - as noted above, such pragmatism, often associated with short-term political cycles, is frequently seen as the enemy of strategic thinking and strategy formulation/implementation. |
| **Lesson #9:** There appears to have been no clearly thought out, all-embracing ‘strategy’ for |

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| the M6 Toll Road other than the imperative to deliver a piece of road infrastructure at no/minimal cost to the public purse via the PFI mechanism. |
| **Lesson #10**: Project visions/objectives should be manifestly clear and should be fully explained to all stakeholders. This does not appear to have taken place for the M6 Toll Road since many stakeholders continue to believe that the principal function of the road is to reduce congestion on the M6. Indeed, the availability of clear project objectives (at least to those close to the M6 Toll Road project) was seen as a means to mitigate risk resulting from the interplay of different stakeholder agendas and, more broadly, contextual change over time |
| **Robustness and adaptability** |
| **Lesson #11**: MUTPs that are subject to changing contextual influences may well need to be delivered through a flexible, evolving and responsive approach which is capable of addressing/accommodating such change. This appears not to have been the case for M6 Toll Road once it entered the PFI stage. |
| **Project freezing** |
| **Lesson #12**: Careful thought needs to be given as to when a project can be effectively frozen as contextual change thereafter may be very difficult to accommodate. This is especially pertinent in that many MUTPs evolve over time and it may be argued that such projects should only be frozen after all contextual eventualities have been taken into account – as also noted in the context of CTRL, this may mean that matters such as cost and programme control remain problematical for a considerable period of time. |
| **Strategic components (and impacts) are difficult to identify and quantify** |
| **Lesson #13**: The changing circumstances (contexts) that surround the MUTP planning and delivery process and the impacts this can have on moulding project approach/content is difficult to identify (much less quantify). This may mitigate against having very clear and well established objectives at the outset if systems/processes do not allow such objectives to be modified in response to changing contextual elements and emerging agendas. This was certainly true of the M6 Toll Road in that its' fundamental role and function changed abruptly from a 'relief road' to a 'PFI toll road' (a circumstance that could perhaps not have been anticipated at the outset. |
| **Closed v open system approach** |
| **Lesson #14**: It would seem clear that the M6 Toll Road was indeed treated as a closed system by the time of the second Public Inquiry. This is seen as more justifiable (by interviewees) for those projects that are relatively simple/straightforward, and/or subject to the PFI mechanism where financial imperatives tend to overshadow most other concerns. |
| **Lesson #15**: By contrast, it is suggested that more complex projects with wider 'agent of change' objectives and associated plans/programmes need to be treated as fully open during the planning and appraisal process so as to allow for the playing out of stakeholder agendas and other contextual forces. |
| **Critical elements of RUC** |
| **Lesson #16**: The lengthy planning and implementation periods for MUTPs is seen to be a significant source of RUC which has a particularly serious knock-on effect for private sector investors (pertinent in the case of the M6 Toll Road). |
| **Skills and competencies** |
| **Lesson #17**: There is a need for managers and decision-makers who are able to see projects in their entirety (holistically) over the whole lifecycle, especially in terms of RUC |
| **Lesson #18**: MUTP planning and delivery is fundamentally impacted by stakeholder |

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| personalities and personal relationships which need to be detected, fully comprehended and monitored over time. |
| **Lesson #19**: Maintaining continuity amongst key stakeholder staff involved in project planning, appraisal delivery is seen as essential if progress is to be maintained and a clear understanding of each party's perspectives is to be gained. |
| **Statutory processes** |
| **Lesson #20**: The Public Inquiry system for major projects such as MUTPs is seen as flawed by stakeholders and/or a 'necessary evil' by promoters and delivery agents in terms of prolonging the period of RUC. This suggests a need to re-think the manner in which stakeholders are enabled to engage with MUTPs at the planning and appraisal stage. As noted below, interviewees consider that stakeholder engagement can have a very positive impact on planning and delivery, provided this is undertaken in a transparent manner, at an early stage in the project lifecycle and that informed contact is maintained throughout. |
| **Extracting benefits from MUTPs (especially PFIs)** |
| **Lesson #21**: MUTP planning and delivery agents need to be aware of the potential for political processes to create conditions that are favourable to the success of a PFI, and that this may mean that other potentially beneficial project impacts become more difficult to achieve. |
| **Lesson #22**: Risk and uncertainty may arise as a result of inadequate bargaining skills on the part of the public sector to determine and extract an 'appropriate' amount of benefit from MUTPs - seen as especially significant in relation to PFI projects. |
| **National policy frameworks** |
| **Lesson #23**: National policy frameworks offer a potentially valuable basis on which to prioritise and plan MUTPs as such frameworks are seen to facilitate equity in public sector resource allocation and also clearly demonstrate the contribution such projects can make to the nation's well-being. However, there remains concern about the practical application of such frameworks in the context of controversial projects and in relation to the ability of politicians to exert undue influence - especially given the tensions between long-term strategic planning and short-term political horizons. |
| **Political will/influence** |
| **Lesson #24**: MUTP planning and delivery agents should be aware that insufficient political will can often become a significant source of risk - again, primarily resulting from expediency/pragmatism brought about by short-term political horizons. For the M6 Toll Road key political influences included the decision to pursue the project as a PFI - which resulted in a rather opaque relationship between government and the concessionaire and the downplaying of project objectives relating to the relief of congestion on the M6 (the 'originally' proposed function of the project. |
| **Information concerning project interfaces** |
| **Lesson #25**: There is a clear need for extensive and comprehensive forward planning based on relevant information to take account of all relevant stakeholder programmes that may impact on planning and delivery. |
| **Lesson #26**: MUTP planning and delivery agents need to be aware of the potential shortcomings of current systems/mechanisms to assemble all relevant information regarding project interfaces at the planning stage - when the many, various and changing stakeholder agendas are frequently difficult to discern. This suggests the need to employ personnel with distinct context awareness skills at the planning stage (in particular) to assemble and constantly refresh such information. |

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| **Risk monitoring** |
| **Lesson #27**: Regular and sustained monitoring of contextual matters that are likely to influence project planning and delivery is critical. This requires extensive oversight of all inter-related and inter-disciplinary matters associated with contextual influences and project impacts. |
| **Lesson #28**: Project planners and delivery agents need to be aware that informal monitoring of contextual matters (notably politics) is often a key activity that takes place through well established (informal) relationships and networks as part of consensus building. |
| **Lesson #29**: Project planners and delivery agents also need to be aware that unexpected occurrences will almost always arise and that some of these can become especially critical. This is most prevalent at the project planning and appraisal stage but can also impact on project implementation (as was the case for the M6 Toll Road when an outbreak of 'foot and mouth disease' impacted on the project delivery programme). Thus, prudent agencies will always constantly monitor prevailing contexts and build-in adequate contingency periods to project programmes. |
| **Models and analytical tools** |
| **Lesson #30:** The shortcomings of current project appraisal and evaluation tools, methods and processes (including the manner in which they are utilised) are frequently not fully understood by those that most often make use of them. It is believed that there is consequently a professional reluctance to acknowledge such shortcomings, except insofar as these can be improved upon by employing ever more 'sophisticated' techniques/enhancements. MUTP planning and decision-makers should therefore be very aware that there is a marked reluctance on the part of some professional groups to challenge the status quo in respect of project appraisal and evaluation. |
| **Lesson #31**: There is a vital need for all appraisal and evaluation methodologies (including all inputs and assumptions) to be made abundantly clear to key decision-makers and other affected stakeholders - so that judgements about 'performance levels' can be made in an open and transparent manner, having regard to many different stakeholder perspectives on what constitutes 'success/failure'. |
| **Lesson #32**: In parallel, MUTP planning and delivery agencies need to 'place' techniques such as CBA and traffic modelling into a broader decision-making framework that enables their strengths and weaknesses to be taken fully into account - and weighted in accordance with different stakeholder perspectives. For example, there is a clear need for MUTP planning and delivery agents to appreciate that political influence will often override outputs from the use of traditional tools, methods and processes. |
| **Lesson #33**: SDVs are not presently seen as a suitable framework for judging the success or otherwise of MUTPs due to perceived difficulties in defining 'sustainability' in an operationally assessable manner. It is suggested that much work is needed to turn SDVs into realistic, comprehensible and measurable project objectives. |
| **Risk sharing** |
| **Lesson #34**: Determining an appropriate degree of risk-sharing between the public and private sector remains problematical and will often depend upon prevailing context and the bargaining skills of key players. In particular, transferring risk to the private sector via a PFI (as in the case of the M6 Toll Road) carries with it the risk that the project scope/nature may change from that originally conceived – the private sector may well only be concerned with delivering the project it wants, not the project the public sector originally thought it was getting. |
| **Lesson #35**: The public sector (including politicians) is generally not seen as being |

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| sufficiently skilled in negotiations with the private sector. |
| **Stakeholder scanning** |
| **Lesson #36**: Effective consultation with relevant stakeholders can enable the successful adjustment/revision of project objectives, management of project expectations and help to speed up the delivery process. However, such engagement is less effective if undertaken once project objectives have been firmed-up - and can actually increase confrontation. |
| **Lesson #37**: Determining stakeholder motives and legitimacy is often extremely difficult and may require specifically targeted outreach exercises. That said, successful MUTP planning and delivery agents are likely to be those who are characterised by a strong intuitive sense of the nature and agendas of stakeholder groups and networks - and the likelihood that these will change over time - where no formal stakeholder scanning mechanisms exist. |
| **Winners and losers** |
| **Lesson #38**: It is frequently difficult to determine an appropriate balance between winners and losers - or even to fully appreciate both who are the winners and losers and the extent to which they have 'won' or lost'. Methodologies for addressing such issues remain somewhat immature and/or are overly dependent upon rather coarse-grained and contextually insensitive mechanisms such as CBA. This would seem to suggest the need for an approach based on MCA |
| **Consensus** |
| **Lesson #39**: The need for consensus building on the part of MUTP planning and delivery agents is well understood by interviewees but was considered to be a less significant factor in decision-making and risk mitigation in the case of the M6 Toll Road as a result of its perceived straightforward nature. |
| **Trust and Transparency** |
| **Lesson #40**: The apparent levels of 'trust and transparency' present in regard to significant project dealings between key players will often be viewed differently by different stakeholder groups - who themselves are frequently suspicious negotiations that take place behind closed doors 'for commercial reasons'. Stakeholder trust is perhaps most often lost when changes in project objectives or its fundamental raison d'etre are not made clear. Such changes may be abrupt or even subtle but will still require full explanation to all affected stakeholders |
| **Project Lesson-Sharing** |
| **Lesson 41**: The need for institutional learning is well understood by interviewees, as is the need to apply knowledge obtained from this in a context sensitive manner. Experience levels are seen as critically important in this respect - i.e. the ability to correctly 'sense' what lessons/experiences drawn from past projects might be utilised in particular contexts. |

### 4.4.4 Test 4: Synthesis of Tests 1-3

#### 4.4.4.1 Chief context-specific influences on project achievements

The chief context-specific influences on the M6's achievements included:

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| **Changed project objectives:** | The change in project status from public sector Relief Road (1980s) to PFI Toll Road (1990s) reflects changes in the prevailing political and economic imperatives which are key contextual elements. The limited availability of public sector finances in the 1990s meant that the project |

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| | had to be pursued as a PFI. . |
| **Political pragmatism:** | Both government and MEL were keenly aware of the former's determination to ensure that the project would succeed as a 'prototype PFI - this generated a very favourable negotiating climate for MEL to extract the maximum benefit from the concession that was awarded to them - including length of concession (50+ years) and ability to regularly change toll levels so as to maximise revenue. |
| **A self-evident 'problem' to be addressed:** | Very self-evident issue of congestion on the M6 motorway - although the project has not been fully effective in resolving this problem due to the toll regime imposed. |
| **Stakeholder agendas and influence:** | The concessionaire made strenuous efforts to build up relationships with stakeholders, who were seen as potential customers |

#### 4.4.4.2 Chief generic influences on project achievements

The chief generic influences on the M6's achievements were seen to be:

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| **Context awareness:** | This is critical to *all* aspects of project planning and delivery and there is a need to take account of the likelihood that many/most contextual elements are likely to change/evolve over the course of the (usually lengthy) project lifecycle. |
| **Project 'success':** | This can only be judged in light of sound knowledge of the context that prevailed at the time the project was conceived, planned, appraised and implemented. |
| **Changing contextual elements:** | These result in the evolving nature of projects such that the planning and delivery process responds to the moulding influence of changing contextual elements over time. For the M6 Toll Road, such changes in context saw the project 'evolve' from a public sector relief road to a private sector toll road. |
| **Successful projects:** | These are likely to be characterised by planning and delivery agents that possess acute awareness of the importance of context *throughout* the project lifecycle. |
| **The tendency towards 'short-termism':** | This tendency on the part of politicians and civil servants suggests both an inability and lack of desire to effectively scan existing and future context – rather, the focus is on defining what is practical and achievable in the short run. |
| **The project delivery phase:** | This is seen as less contextually sensitive than other phases because of the perception that the project is 'frozen' – this explains, at least in part, why project managers are believed to be less contextually sensitive (HLR). |
| **Formal monitoring of contextual forces:** | There is little evidence to suggest that there were explicit mechanisms and procedures for identifying and monitoring contextual forces - except in terms of stakeholder forums/community consultation processes and formal 'planning' procedures that primarily dealt with detailed and day-to-day issues (such as mitigation measures). |
| **Stakeholder** | These need to be both clearly understood and acknowledged as |

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| **perspectives/ agendas:** | changing over the course of the project. |
| **Political contexts:** | These are both all-pervasive and again subject to change in light of short-term political cycles. |
| **Financial context:** | In particular financial arrangements made for the project and changes in the external financial environment. |

#### 4.4.4.3 Principal stakeholder 'winners and losers' (M6)

**Winners**

Based primarily on interviewee perceptions, the principal project 'winners' were seen to be:

- the Government - obtained a significant piece of motorway infrastructure at minimal cost and demonstrated that this could be achieved through the PFI mechanism;
- MEL - obtained very favourable terms for the concession. The project is a significant part of MacQuarie's infrastructure portfolio which offers a long-term income stream,
- the region (W. Midlands) as a whole has benefitted in terms of accessibility and reduced journey time from London/SE, greater development potential and enhanced property prices;
- nonetheless, there is a perception amongst many stakeholders that the economy of the North West of England has seen greater benefit than the West Midlands as a result of this increased accessibility to London and the South East.

**Losers**

The principal project 'losers' were seen to be:

- the general public in terms of environmental impact - this perception (by interviewees) may not reflect reality entirely in that environmental mitigation measures for the M6 Toll Road are of a high quality;
- 'anti roads' lobby groups such as FoE – they fought hard against the principle of the project as a facilitator of yet more road traffic, but were ultimately defeated;
- private and business traffic - in terms of the project's seeming inability to resolve congestion problems on the M6 - which *might* have been possible if the project were a 'normal' part of the UK national motorway network;
- commercial goods traffic - high tolls prevail for HGVs in order to dissuade them from using the M6 Toll Road as a means to minimise maintenance costs.

#### 4.4.4.4 Responses to M6 overall research questions (ORQ's) and hypotheses (ORH's): Lessons of a context-specific nature

**Table 4.4: M6 ORQ#1 context specific responses**

| ***ORQ#1 - What constitutes a 'successful mega urban transport project (MUTP) in the 21st Century?*** |
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| *Perceptions of 'success':* As noted below (possible generic lessons), fundamentally judgements concerning the success or failure of a MUTP must consider whether it met (and is continuing to meet) the primary objectives that were originally set for the project. In parallel, such judgements must necessarily consider the circumstances (contexts) that prevailed at the time these primary objectives were established (and by whom, using what procedure etc.). For the M6 Toll Road, 'project success and failure' was largely seen in terms of:<br>• the ability/inability to provide a congestion free alternative to the M6 (i.e. its *stated* |

overall objective);
- the ability/inability to provide relief to the M6 (i.e. it's *perceived* overall objective);
- delivery within budget;
- delivery of project at no/minimal cost to the public purse;
- minimal environmental impact.

*Clarity of visions, goals and objectives and relationship with 'success':* MUTPs that are accompanied by clear visions and objectives are more likely to be 'successful' in terms of the delivery of a desired 'end-product'. Such clarity is beneficial in reaching understanding with project stakeholders and managing their expectations and also in terms of providing a key basis for determining the success (or otherwise) of project outcomes.

Establishing clear and meaningful project objectives is perhaps more straightforward for relatively 'simple' MUTPs such as the M6 Toll Road – i.e. a 'simple' stretch of new motorway that was not accompanied by potentially complex agglomeration objectives. Against this background, having a 'time to breathe' was not seen as meaningful or desirable when there was a self-evident problem to be resolved (congestion on the M6) and a potentially straightforward solution (a PFI) was available.

The existence of clear objectives for the project as a PFI was seen as being especially important – any lack of clarity might well have resulted in the delivery of an undesirable 'end-product'.

Even seemingly clear and straightforward objectives need to be made clear to all affected stakeholders so as to minimise continued misunderstanding, conflict and 'expectation creep'. This was not the case for the M6 Toll Road as many stakeholders remained confused about the project's intended function as a 'free flow alternative to the M6' for which tolls could be set by the concessionaire – some stakeholders consider the project to have 'failed' as a result of its limited impact on M6 congestion, despite the fact that it seemingly was not intended to fully address this problem.

*Understanding/awareness of context is critical:* Context awareness is an important factor in determining whether a project is 'successful'.

Key contextual influences on the M6 Toll Road were seen to include (as noted above): improved inter-regional connectivity; 'big ideas' (use of the PFI mechanism); potential project profitability; the benign nature of the stakeholder environment; strong customer focus, and; a non-sensitive location.

*Delivering a 'win-win' solution:* MUTPs delivered through the PFI mechanism may well be positioned as offering government a potential 'win-win' solution - by securing the provision of much needed infrastructure at no/least cost to the public purse. However, the cautionary principle may need to be adopted in that the end-product of the PFI mechanism may well comprise what the private sector interprets as desirable (and financially workable) rather than what the public sector believes is required.

This suggests the need for an especially careful approach to crafting project objectives for PFIs - not least because many interviewees perceive the public sector to be less astute in negotiations than their private sector counterparts.

**Table 4.5: M6 ORQ#2& ORH#3 context specific responses**

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| ***ORQ#2 - How well has risk, uncertainty and complexity been treated in the planning, appraisal and evaluation of such projects?***<br>***ORH#3 - The level of competence in decision-making and planning in today's fast-changing world is best assessed by the adequacy of the treatment of risk, uncertainty and complexity and sensitivity to context – all of which are important demands on Strategic Planning.*** |
| *Impact of visions/objectives on risk:* The availability of clear project objectives was seen as a means to mitigate risks resulting from the interplay between different stakeholder agendas and, more broadly, contextual change over time. In particular, the existence of clear and straightforward objectives relating to the existence of a very self-evident problem (congestion on the M6) was most beneficial - not least in encouraging the project to be seen as essentially 'benign'.<br><br>Astute MUTP planners and delivery agents may well be able to mitigate risk by taking advantage of government vision/belief systems. MEL addressed risk by negotiating and then achieving favourable terms for the PFI concession. The context for this was also seen as ripe for MEL in that government were equally committed to pursuit of the project as a 'prototype' PFI and were thus keen to ensure that it should not fail. |
| *'Time to breathe' and risk:* For projects that are considered to be relatively straightforward, the availability of a 'time to breathe' may not be a beneficial means to mitigate risk. Indeed, for a seemingly straightforward PFI project such as the M6 Toll Road a 'time to breathe' may be seen as potentially dangerous in prolonging planning and implementation processes that are vulnerable to greater uncertainty due to the likelihood of contextual change. |
| *'Project control' and risk:* Similarly, for a straightforward MUTP such as the M6 Toll Road, 'tight control' as a means to mitigate risk is seen as clearly possible - particularly when there exist clear objectives that are well understood by stakeholders.<br><br>Tight control is also seen as more possible if the project is handled exclusively by the private sector.<br><br>Notwithstanding the above, there are likely to be more difficulties in exerting control during MUTP *planning periods* as a result of competing stakeholder agendas and the interplay of political influence, which are especially prevalent in the UK. |
| *Closed v open system approach and risk:* Current appraisal methodologies and (modelling) tools adopted in the UK that treat MUTPs as closed systems are fundamentally unable to cope with the risks associated with changing contexts - and are also unable to correctly discern (and model) all elements that are likely to pose a risk to the project.<br><br>The M6 Toll Road was treated as a closed system by the time of the second PI. This may be justifiable for those projects that are: relatively simple/straightforward, and; subject to the PFI mechanism where financial imperatives tend to overshadow most other concerns.<br><br>By contrast, more complex projects with wider 'agent of change' objectives need to be treated as fully open during the planning and appraisal process to allow for the playing out of stakeholder agendas and other contextual forces.<br><br>For both complex and relatively straightforward projects, the implementation/delivery stage will normally be treated as 'closed' and therefore more amenable to 'tight control' - this may expose projects to the risks associated with unforeseen events - such as the advent of foot |

and mouth disease which effectively closed-down operations on the M6 Toll Road for a period of time.

*Statutory processes and risk:* The UK's Public Inquiry system for major projects such as MUTPs is seen as flawed by stakeholders (perception that most key decisions have already been taken by the time the PI takes place) and/or a 'necessary hurdle' to be got over by promoters and delivery agents in terms of prolonging the period of RUC. This suggests a need to re-think the manner in which stakeholders are enabled to engage with MUTPs at the planning and appraisal stage.

*Extracting benefits from PFI-based MUTPs:* MUTP planning and delivery agents need to be aware of the potential for political processes to create conditions that are favourable to the success of a PFI, and that this may mean that other potentially beneficial project impacts become more difficult to achieve.

There is a clear perception that government acquiesced in negotiations regarding the M6 Toll Road PFI so as to ensure that it was able to proceed - as a flagship PFI and potential forerunner of other similar projects.

Risk and uncertainty may arise as a result of inadequate bargaining skills on the part of the public sector to determine and extract an 'appropriate' amount of benefit from MUTPs - seen as especially significant in relation to PFI projects.

*National policy frameworks as a means to mitigate risk:* In the UK context national policy frameworks offer a potentially valuable basis on which to prioritise and plan MUTPs. Such frameworks are seen to facilitate equity in public sector resource allocation and also clearly demonstrate the contribution such projects can make to the nation's well-being.

However, there remains concern about the practical application of such frameworks for 'difficult'/controversial projects and in relation to the ability of politicians to exert undue influence - especially given the tensions between long-term strategic planning and short-term political horizons.

*Risk sharing and PFIs/PPPs:* Determining an appropriate degree of risk-sharing between the public and private sector remains problematical and will often depend upon prevailing context and the bargaining skills of key players.

Transferring risk to the private sector via a PFI carries with it the risk that the project scope/nature may change from that originally conceived – the private sector may well only be concerned with delivering the project *it* wants, not the project the public sector originally thought it was getting.

The public sector (including politicians) is generally not seen as being sufficiently skilled in negotiations with the private sector, thereby increasing risk.

*Trust, transparency and risk - PFI projects:* The apparent levels of 'trust and transparency' present in regard to important project dealings between key players will often be viewed differently by different stakeholder groups. Negotiations that take place behind closed doors 'for commercial reasons' are frequently treated with considerable suspicion.

Stakeholder trust is perhaps most often lost when changes in project objectives or its fundamental raison d'etre are not made clear. Such changes may be abrupt or even subtle but will still require full explanation to all affected stakeholders.

**Table 4.6: M6 ORQ#3 context specific responses**

| ***ORQ#3 - How important is context in making judgments regarding Overall Research Questions 1 and 2?*** |
|---|
| *Contextual forces influence pivotal decisions:* The political context for the M6 Toll Road effectively shaped its planning and delivery, albeit to varying degrees - this is variously seen in relation to the changing status of the project to a PFI and the political imperative to address congestion problems on the M6.<br><br>The financial context for the project (conducted as a PFI in the face of limited public sector finance availability) was also largely seen as all-pervasive. This resulted in the creation of favourable conditions for the PFI and less concern about the possible wider roles and impacts of the project. Economic growth and robust financing packages were therefore seen to be influential contextual factors in determining project outcomes.<br><br>The institutional context for the M6 Toll Road was considered to be important in that central government's vision for the role and function of the project changed when it became a PFI, at which point MEL became a much more powerful force in the negotiations (essentially central government and politicians were most keen to ensure that this 'prototype' PFI road project should succeed at all costs). Despite this (or perhaps because of this) policy frameworks were considered not to be an especially influential contextual element - essentially because of their long time horizons relative to political processes.<br><br>Some interviewees suggested that the geographic location for the M6 Toll Road was favourable - non-controversial alignment that affected few private properties - resulting in many fewer stakeholder agendas at play than for other, more sensitive projects.<br><br>For UK projects, key contextual considerations were identified as:<br>• the tensions between short-term political horizons and the need for long-term planning;<br>• the need for 'vision' to supplant an over-dependence upon rationalist forecasting<br>• the current state of public sector finances, which encourage governments to pursue the PFI approach;<br>• the currently poor institutional context for MUTP planning and delivery - '.....especially the need for joined up approach in terms of consultation and decision-making';<br>• the inability of forecasting methodologies to take sufficient account of all contextual elements |
| *Response to context:* Based on the contextual influences associated with the M6 Toll Road project, it would seem that there is a clear need for project planners and delivery agents to: 'seize the day', suggesting a clear recognition of the importance of context at particularly favourable moments in time; 'launch the right project at the right point in time' - especially in relation to the prevailing political environment, and; where possible, manipulate context to deliver particular outcomes. |

**Table 4.7: M6 ORH#1 context specific responses**

| ***ORH#1 - Traditional criteria relating to cost overruns, completion dates, generation of travel time savings for users and rates of returns to investors are inadequate measures of success in the 21st Century as sustainable development concerns become increasingly critical both globally and locally.*** |
|---|
| *Traditional criteria and appraisal methodologies - overview:* In the context of the M6 Toll Road, traditional criteria associated with (especially) time, cost, value for money and quality remain of critical importance - particularly when such criteria are embodied in a project's |

fundamental objectives.

The M6 Toll Road was treated as a discrete closed system. This was seen as a necessary in order to support the framing of this (relatively straightforward) project as a PFI. By contrast, and as noted above, more complex projects with wider 'agent of change' objectives need to be treated as fully open during the planning and appraisal process to allow for the playing out of stakeholder agendas and other contextual forces.

The appraisal criteria associated with broader objectives (e.g. fostering of economic growth) are clearly fundamentally important but remain difficult to operationalise and 'measure' successfully using 'traditional' methods.

As noted above, contextual influences on the M6 Toll Road meant that financial considerations ultimately overrode most other appraisal criteria - the PFI could not be seen to fail as far as government were concerned.

*Shortcomings of traditional methods and tools:* In the UK context the shortcomings of current project appraisal and evaluation tools, methods and processes (including the manner in which they are utilised) are frequently not fully understood by those that most often rely on them. There also appears to be a professional reluctance to acknowledge such shortcomings, except insofar as these can be improved upon by employing ever more 'sophisticated' techniques/enhancements - MUTP planning and decision-makers should therefore be very aware of this.

Current appraisal and evaluation tools and techniques are incapable of getting to grips with all relevant contextual influences that are likely to affect project outcomes - not least because many of these contextual influences are extremely difficult to discern and are, in any case, subject to change over time. Thus, there is a vital need for all appraisal and evaluation methodologies (including all inputs and assumptions) to be made abundantly clear to key decision-makers and other affected stakeholders - so that judgements about 'performance levels' can be made in an open and transparent manner, having regard to many different stakeholder perspectives on what constitutes 'success/failure'.

In parallel, MUTP planning and delivery agencies need to 'place' techniques such as CBA and traffic modelling into a broader decision-making framework that enables their strengths and weaknesses to be taken fully into account - and weighted in accordance with different stakeholder perspectives.

SDVs are not presently seen as a suitable framework for judging the success or otherwise of MUTPs due to perceived difficulties in defining 'sustainability' in an operationally assessable manner.

**Table 4.8: M6 ORH#2 context specific responses**

| ***ORH#2 - The new emerging international and local agenda related to vision(s) of sustainable development is multi-dimensional and goes beyond notions of environmental sustainability, as critical as this may be, in that it also concerns inter-related concepts of economic sustainability, social sustainability and institutional sustainability.*** |
|---|
| *The role of sustainability in MUTP planning and delivery:* In the context of the M6 Toll Road, there remains considerable skepticism about the role of sustainable development visions relative to MUTP planning and delivery – as noted above, operationalising such visions in a |

meaningful way is extremely difficult, and certainly not yet sufficiently developed to enable them to be applied effectively to MUTPs in the UK.

*Multi-dimensional nature of SDV:* Notwithstanding the above, interviewees generally considered that sustainability considerations *should* play a key role in project planning and delivery. Indeed, some commented that 'sustainability' should be seen as encompassing economic and social dimensions in addition to 'environment' (all three should be seen as having equal weight).

Sustainability concerns did not impact on the planning and delivery of the M6 Toll Road - primarily because such considerations post-date the project. Moreover, interviewees implied that sustainability *would not* have been considered seriously in relation to the project given that the prime concern at the time was to ensure that it could succeed as a PFI.

In addition, interviewees showed little enthusiasm for the notion that new/emerging visions of sustainable development offer a better framework for judging success - again, primarily as a result of perceived difficulties in operationalising such concerns such that project outcomes can be properly 'measured'.

#### 4.4.4.5 Responses to Overall Research Questions and Hypotheses – Potential Lessons of a *Generic* Nature

**Table 4.9: M6 ORQ#1 Generic responses**

| ***ORQ#1 - What constitutes a 'successful mega urban transport project (MUTP) in the 21st Century?*** |
|---|
| *Perceptions of 'success':* Judgements concerning the success or failure of a MUTP must consider whether it met (and is continuing to meet) the primary objectives that were originally set for the project. Such judgements are more realistically reached when project planning and implementation is accompanied by the clear setting of objectives and the ability to both identify unintended project consequences and enable the delivery of wider benefits.<br><br>In turn, this requires an understanding of the context that prevailed at the time such primary objectives were established. M6 Toll Road, interviewees considered that key objectives associated with time, cost and quality are of prime importance. |
| *Clarity of visions, goals and objectives and relationship with project 'success':* Project visions/objectives should be manifestly clear and should be fully explained to all stakeholders. This does not appear to have taken place for the M6 Toll Road since many stakeholders continue to believe that the principal function of the road is to reduce congestion on the M6.<br><br>MUTPs are affected by the apparent tension between 'vision' and political practice/pragmatism - such pragmatism, often associated with short-term political cycles, is frequently seen as the enemy of strategic thinking and strategy formulation/implementation. There appears to have been no clearly thought out, all-embracing 'strategy' for the M6 Toll Road other than the imperative to deliver a piece of road infrastructure at no/minimal cost to the public purse via the PFI mechanism.<br><br>Project planners and delivery agents need to take account of the likelihood that new objectives may emerge over the course of the project planning and appraisal period as a result of changing contextual elements (including emerging/changing stakeholder |

agendas).In the context of the case study, emergent objectives associated with the transition of the project to a PFI Toll Road ultimately dictated its final composition.

Wherever possible, MUTP objectives should differentiate between those objectives that are:

- core/essential, and represent the fundamental reason why the project is being implemented, and;
- those that represent perhaps less certain but nevertheless desirable project outcomes.

Having such a categorisation will enable a fairer and more consistent approach to be adopted to project appraisal and evaluation. Project objectives for the M6 Toll Road were straightforward and emphasised the core/essential reasons why the project was to be constructed.

Project objectives should be capable of being operationalised in such a way as to be meaningful to all stakeholders. Interviewees expressed particular concern that objectives associated with both 'regeneration' and 'sustainability' are frequently incapable of implementation in a direct and practical sense.

Achieving widespread agreement on project objectives can prove extremely difficult to achieve, especially when dealing with a fragmented institutional framework and manifold stakeholder agendas. This suggests: both a need for the involvement of key stakeholders in the setting of project objectives (rather than being consulted 'after the fact') and the employment of skilled consensus builders who are able to exploit and influence well established social/political/business networks. For the M6 Toll Road, project objectives appear to have been latterly the product of much 'closed door' negotiations between the concessionaire and government - which led to a considerable breakdown of 'trust' and subsequent opposition to the project.

*Understanding/awareness of context is critical:* Changing contextual elements contribute to the evolving nature of MUTPs - the planning process may become subject to fundamental shifts in the raison d'etre for the project as a result of contextual change brought about by political mantras/policy (such as that associated with the pursuit of the PFI approach in relation to the M6 Toll Road). This makes context awareness and context sensitivity especially significant if 'successful' projects are to be delivered.

As noted above, project success can ultimately only be judged against the background of sound knowledge of the context that prevailed during project planning, appraisal and delivery.

Political influence is frequently seen as the most powerful force in regard to the project planning and appraisal process. Indeed, contextual change brought about by short-term political horizons/cycles frequently constrains the ability of sponsors and delivery agencies to implement MUTPs and their attendant plans and programmes, especially when these have a necessarily long-term perspective due to lengthy project lifecycles. The tendency towards 'short-termism' on the part of politicians and civil servants suggests both an inability and lack of desire to effectively scan existing and future context – rather, the focus is on defining what is practical and achievable in the short run.

There occur moments in time when it is opportune to 'seize the day' and take decisive action. This suggests the need for very astute context awareness made possible by either explicit or implicit scanning of context. In regard to the M6 Toll Road it would seem that MEL took advantage of favourable political and economic circumstances to wrest a 50+ year concession on favourable terms. It is also interesting to note the view that powerful MUTP 'players' may be able to manipulate context so as to achieve desired ends.

The above suggests that successful project planners and delivery agents are indeed very

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| aware of both 'context' and its changing nature (perhaps in an instinctual rather than formal way). |
| *Institutional support:* For MUTPs to be successful an institutional framework needs to be established which is able to address the multiplicity of expectations and stakeholder agendas that MUTPs inevitably encourage. In the context of the M6 Toll Road, much of the dealings with stakeholders was left to MEL. |

**Table 4.10: M6 ORQ#2 & ORH#3 generic responses**

| ***ORQ#2 - How well has risk, uncertainty and complexity been treated in the planning, appraisal and evaluation of such projects? And***<br><br>***ORH#3 - The level of competence in decision-making and planning in today's fast-changing world is best assessed by the adequacy of the treatment of risk, uncertainty and complexity and sensitivity to context – all of which are important demands on Strategic Planning.*** |
|---|
| *Robustness and adaptability:* MUTPs that are subject to changing contextual influences may well need to be delivered through a flexible, evolving and responsive approach which is capable of addressing/accommodating significant change. This appears not to have been the case for the M6 Toll Road once it entered the PFI stage - i.e. it is suggested that government had no back-up plan in the event that the PFI failed.<br><br>As noted elsewhere, there was considerable support for the notion that there are moments in time that present ideal opportunities to take decisive action in pursuit of specific ideas, agendas and decisions. This suggests that planning and implementation strategies need to be sufficiently robust and adaptable to be able to respond rapidly to the opportunities afforded by such moments in time. |
| *Project freezing:* Careful thought needs to be given as to when a project can be effectively frozen as contextual change thereafter may be very difficult to accommodate, thus exacerbating risk.<br><br>Thus, the prudent project planning and delivery agency will always ensure that project design/scope is capable of subsequent adjustment as far as possible - in terms of scalability, connectability and functionality.<br><br>The lengthy planning and implementation periods for MUTPs is seen to be a significant source of RUC which has a particularly serious knock-on effect for private sector investors (e.g. the M6 Toll Road PFI). |
| *Strategic components (and impacts) are difficult to identify and quantify:* The changing circumstances (contexts) that surround the MUTP planning and delivery process, and the impacts this can have on moulding project approach/content, is difficult to identify (much less quantify). This may mitigate against having very clear and well established objectives at the outset if systems/processes do not allow such objectives to be modified in response to changing contextual elements and emerging agendas. This was seemingly true of the M6 Toll Road in that its' fundamental role and function changed abruptly from a 'relief road' to a 'PFI toll road' (a circumstance that could perhaps not have been anticipated at the outset). |
| *Skills and competencies - mitigating risk:* As noted above, there is a need for managers and decision-makers who are able to see projects in their entirety (holistically) over the whole lifecycle, especially in terms of RUC. |

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| MUTP planning and delivery is fundamentally impacted by stakeholder personalities and personal relationships which need to be detected, fully comprehended and monitored over time. Maintaining continuity amongst key stakeholder staff involved in project planning, appraisal delivery is therefore seen as essential. |
| *Risk and extracting benefits from MUTPs:* Key 'risk issues' in this regard are considered to be: lack of public sector knowledge/experience; lack of political will (in the face of short-term political horizons), and; frequent staff turnover during negotiation processes. |
| *Project interfaces and risk:* There is a clear need for extensive and comprehensive forward planning based on relevant information to take account of all relevant stakeholder programmes that may impact on planning and delivery. In this regard, MUTP planning and delivery agents need to be aware of the potential shortcomings of current systems/mechanisms to assemble all relevant information regarding project interfaces at the planning stage - when the many, various and changing stakeholder agendas are frequently difficult to discern. |
| *Other risk monitoring activities:* Regular and sustained monitoring of contextual matters that represent a risk to project planning and delivery is critical, requiring extensive oversight of all inter-related and inter-disciplinary matters.<br><br>Project planners and delivery agents need to be aware that informal monitoring of contextual matters (notably politics) is often a key activity that takes place through well established (informal) relationships and networks as part of consensus building.<br><br>It is also important to be aware that unexpected occurrences will almost always arise and that some of these can become especially critical. This is most prevalent at the project planning and appraisal stage but can also impact on project implementation. |
| *Community engagement as a means to mitigate RUC - stakeholder scanning*: Effective consultation with relevant stakeholders can enable the successful adjustment/revision of project objectives, management of project expectations and help to speed-up the delivery process. However, such engagement is less effective if undertaken once project objectives have been firmed-up - and can actually increase levels of confrontation.<br><br>Determining stakeholder motives and legitimacy is often extremely difficult. That said, successful MUTP planning and delivery agents are likely to be those who are characterised by a strong intuitive sense of the nature and agendas of stakeholder groups and networks - and the likelihood that these will change over time. |

**Table 4.11: M6 ORQ#3 generic responses**

| ***ORQ#3 - How important is context in making judgements regarding Overall Research Questions 1 and 2?*** |
|---|
| *Context and the project lifecycle:* Given that 'success' needs (at least in part) to be measured against a project's ability to achieve its original objectives (see above), it is concluded that judgements about MUTP performance levels can only be made in light of sound knowledge of the context that prevailed at the time the project was conceived, planned, appraised and implemented.<br><br>The project delivery phase is seen as less contextually sensitive than (particularly) the planning phase - the implementation phase is seen as more 'controllable'.<br><br>Procedures need to be put in place to ensure that contextual change is constantly |

monitored, enabling strategies, plans and programmes to be adjusted in light of early warnings of the need for corrective action resulting from such monitoring.

**Table 4.12: M6 ORH#1 generic responses**

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| ***ORH#1 - Traditional criteria relating to cost overruns, completion dates, generation of travel time savings for users and rates of returns to investors are inadequate measures of success in the 21st Century as sustainable development concerns become increasingly critical both globally and locally.*** |
| Observations concerning this ORH are largely seen as context-specific rather than generic, as noted above. |

**Table 4.13: M6 ORH#2 generic responses**

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|---|
| ***ORH#2 - The new emerging international and local agenda related to vision(s) of sustainable development is multi-dimensional and goes beyond notions of environmental sustainability, as critical as this may be, in that it also concerns inter-related concepts of economic sustainability, social sustainability and institutional sustainability.*** |
| *MUTPs and sustainability*: Unless carefully planned as part of an overall framework, at which SDVs are the central focus, MUTPs may simply facilitate ever more travel, which is in itself unsustainable - the M6 Toll Road is seen very clearly in this light in that one of its' key functions is to facilitate better road connections between the NW and SE of England. |
| *Role of SDVs:* While SDVs are seen to have the *potential* to provide a better framework for judging the 'success' of MUTPs, there are significant concerns in this respect (as noted above) regarding difficulties in operationalizing such visions/frameworks, the need to employ lengthy/long-term evaluation cycles, the lack of suitable institutional support and the existence of deeply ingrained professional silos. |
| *Retrofitting:* Similarly there is a distinct lack of clarity on the part of stakeholders as to how MUTPs (and the development/regeneration projects they spawn) might be planned and/or retrofitted so as to better achieve key sustainability objectives. |

#### 4.4.4.6 Opportunities and threats

Based on interviewee responses and the outcome of Tests 1-3 these are seen to be as follows:

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| **Opportunities:** | • there is considered to be additional potential for economic growth and regeneration in the West Midlands by making use of the locational advantages (enhanced accessibility) provided by the project - this has yet to be fully exploited;<br>• use of the toll regime to attract increased use of the road by HGVs and thus provide greater relief to the M6 - this would likely require some form of government subsidy;<br>• continued opportunity for some 50+ years for MEL to make profit from the project. |
| **Threats:** | • continued discrimination against HGVs in terms of the toll regime, thereby making little impact on relieving congestion on the M6;<br>• lack of government control over MEL's toll regime means that profit maximisation remains the project's principal function;<br>• public sector continues not to establish plans and programmes that seek to maximise the locational advantages afforded by the project as a means to foster regeneration and growth. |

# 5. Synthesis of the UK Case Study Findings

## 5.1 Introduction: Synthesis of UK case studies

This Chapter of the Final Report presents a synthesis of the findings from the three UK Case Studies. It is organised in four parts, as follows:

**Section 5.2** - provides **context-specific responses** to the OMEGA Overall Research Questions and Hypotheses (ORQs and ORHs);

**Section 5.3** - provides **responses considered generic** to the ORQs and ORHs (which will need to be verified against the background of responses provided by the international Partners in relation to their case study findings);

**Section 5.4** - provides **lessons** considered to be of a **context-specific nature** that are likely to inform the enhancement of the performance of existing and new projects relative to normative values and criteria concerning MUTP Sustainable development challenges and visions and the treatment of RUCC in decision-making (by country/region, project type and stakeholder type);

**Section 5.5** - provides **lessons** considered to be of a **generic nature** concerning the ways and means of addressing challenges to MUTP developments so as to better enable existing and new MUTPs to achieve prescribed normative values and related criteria. Such lessons are positioned in relation to key stakeholder types.

It is important to note that Volume 3 should *not* be seen as a 'stand-alone' document, rather as a culmination of the data analysis and information from the various UK Project Profiles, Pre-Hypothesis Reports (PHRs), Hypothesis-Led Reports (HLRs), and the '4 Tests' conducted for each of the case studies.

It should be reported that it was not always possible to precisely determine which responses to ORQs/ORHs and lessons should be taken as 'generic' – since there are some that neatly fall into one category or another *but* others which fall into a 'grey area'. Indeed, it may be argued that there is some danger in making judgements based solely on the interviewee responses on account that these are frequently based on particular perspectives and interests so that what may be seen as ‘conventional wisdom’ generic lessons by interviewees may ultimately be very sensitive to contextual forces that prevailed at the time of the MUTP experience.

## 5.2 Context-specific responses to the OMEGA overall research questions and hypotheses

The following text present responses to the OMEGA ORQs and ORHs that are believed to be context-specific to the UK. Each response is accompanied by a brief note of the 'context' that underpins the response presented (for example, 'believed to be UK-specific, believed to be specific to PPP/PFI projects etc). The chief contextual influences impacting the MUTP planning, appraisal and delivery processes and outcomes of each of the three UK case studies are shown in Table 5.1 below.

**Table 5.1: Principal contextual influences of UK Case study projects**

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| **Mega Events and other Major Events** | **CTRL** | • *London Olympics* - which effectively served to precipitate the implementation of high speed domestic services on CTRL |
| | **M6 Toll Road** | • None identified |
| | **JLE** | • *The 1986 Big Bang* - Deregulation in the UK's banking industry three years before the JLE Bill was submitted to parliament provided a major driving force behind the vision and success of Canary Wharf, which fuelled the demand for the JLE project.<br>• *The 1992 global recession* - which caused JLE principal private sector investor (Olympic & York Plc) to go bankrupt, triggering an 18th month moratorium whilst the private sector contribution to the project was refinanced<br>• *London's Millennium Celebration* - required the JLE to be finished in time to provide transportation for visitors to the attractions planned for the Millennium Dome during 2000 (and the Domes grand opening scheduled for New Years Eve, 1999) |
| **Political Influence** | **CTRL** | • *Politics and champions* - the arrival and influence of (especially) key political champions who both moulded and made use of prevailing contexts to further particular agendas (e.g. Heseltine's 'vision' for Thames Gateway/East London, and Prescott's determination to rescue CTRL from financial difficulty in 1997/98). Interviewee comments suggest overwhelming support for the view that CTRL in particular, and major projects in general, require(d) political backing at the highest level throughout the planning process. More detailed comments indicate that such backing: was given as a means to support key visions (a dedicated high-speed line, Thames Gateway concept, regeneration at Stratford etc.); overrode techno-rational arguments in favour of (for example) different route/station location options; had to take due account of stakeholder agendas as expressed through local authorities and the Hybrid Bill process (the Hybrid Bill process was seen by multiple interviewees as beneficial to the planning and delivery process for CTRL in that it represented a rigorous process for addressing different stakeholder concerns); has to be based on both political self-confidence and consensus building in the political arena. |
| | **M6 Toll Road** | • *Political pragmatism* - both government and MEL were keenly aware of the former's determination to ensure that the project would succeed as a 'prototype PFI - this generated a very favourable negotiating climate for MEL to extract the maximum benefit from the concession that was awarded to them - inc. length of concession (50+ years) and ability to regularly change toll levels so as to maximise revenue<br>• Project champions were *not* seen as critical in this case study. |
| | **JLE** | • *Conservative Party policy of the early 1980s* - which called for regeneration of inner city areas resulted in the formation of the LDDC in 1981, the beginning of a number of events which |

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| | | constructed the favourable contexts for JLE<br>• 1988 Margaret Thatcher's government asked for the East London Rail Study to investigate the potential for the Jubilee Line Extension<br>• 1996 change of Government - The Millennium Dome was intended by Tony Blair to "show Britain as a country confident about the future" and effectively staked the reputation of the Labour party on the celebrations trouble free completion and opening. This led to the government changing the Project Management team in 1998 and effectively giving them a blank cheque book to complete the project on time.<br>• 1992: Government insistence in private sector finance after CW went bust. The government were reluctant for project to ahead unless a replacement contributor for the £400m could be found (even if the subsequent delay cost more that the NPV of £400m)<br>• 1998: Direct intervention by government to replace the JLE management team with Bechtel late in 1998 in order to finish the line in time for the Millennium |
| **Government Policy Agenda** | **CTRL** | • CTRL was seen as a means to (variously): support London's financial position; plug the UK economy more firmly into the EU; fulfil an important role relative to the restructuring and regeneration of Thames Gateway/East London. |
| | **M6 Toll Road** | • Changed project objectives - the change in project status from public sector Relief Road (1980s) to PFI Toll Road (1990s) reflects changes in the prevailing political and economic imperatives which are key contextual elements. The limited availability of public sector finances in the 1990s meant that the project had to be pursued as a PFI<br>• The project was also seen as having benefitted from the existence of a self-evident 'problem' to be addressed - very self-evident issue of congestion on the M6 motorway - although the project has not been fully effective in resolving this problem due to the toll regime imposed |
| | **JLE** | • Government Policy Agenda following from Margret Thatcher's Privatization campaign meant Conservatives were keen to attract Private Sector investment into public services, including large transportation projects. This gave Canary Wharfs contribution for the JLE significant weight beyond its NPV value.<br>• Government policy at the time also focused on the regeneration of Inner city areas. The Local Government, Planning and Land Act 1980 gave the necessary powers to set up Urban Development Corporations such as the LDDC. |
| **Economic context** | **CTRL** | • Enhanced functional and physical integration with EU seen as a key driving force behind CTRL.<br>• Key imperative of CTRL to maintain/enhance London's pre-eminent position as *the* major financial centre. |
| | **M6** | • Lack of public sector finance led to the M6 Toll Road project |

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| | **Toll Road** | becoming a flagship PFI. |
| | **JLE** | • Changes in shipping technology and the advent of containerization contributed heavily to the decline of the docklands. Subsequently The London Docklands Development Corporation (LDDC) was a quango set up by government in 1981 to regenerate the area.<br>• "The place was a tip: 6,000 acres of forgotten wasteland"– Michael Heseltine, Secretary of State, 1981 "Conventional local government solutions failed to halt the accelerating decline. A new approach was needed." –Nicholas Ridley, Secretary of State 1986<br>• Broader economic climate of the 1970s contributed to decline in docks - switch in Britain's trade following EEC membership led to the steep decline in the London docklands, catastrophic job losses and decimation of local Docklands economy.<br>• Recession in the early 1990s following the stock market collapse 'Black Monday' of October 1987 put pressure on many sectors of the economy in countries most strongly linked to the USA (including the UK and Canada). The recession had two principle effects on the JLE: 1) kept prices low during the initial project estimates – causing prices to rise during construction phase above estimates during recovery. 2) Canary Wharf, principle private sector contributor and Canadian Real Estate company, went bust in 1992 leading to JLE's 18month moratorium |
| **Stakeholders** | **CTRL** | • Stakeholder context - early ineffective consultation approaches led to significant confrontation. Later community engagement efforts were seen as considerably more 'professional' and a genuine attempt to reconcile competing claims on the project. |
| | **M6 Toll Road** | • Stakeholder/customer influence - the concessionaire made strenuous efforts to build up relationships with stakeholders, who were seen as potential customers. |
| | **JLE** | • The principle stakeholder involved in early discussions were central government, LDDC and Canary Wharf. LUL were sidestepped by CW during their original offer to part fund the Greenwich and waterloo line. Impacts were minimized by planning the route to be tunnelled under existing rail corridors as far as possible. However the final bill was rejected on the advice of LUL who felt the project was too private sector orientated.<br>• JLE was highly aware during the planning stage of the need to win-over potential objectors and hence minimize the potential for obstructions during the parliamentary process. |
| **Lobbying** | **CTRL** | • Lobbying - for example, the lobbying for international and domestic stations at Stratford, Ebbsfleet and Ashford as a means to foster regeneration and growth (and, in the case of Stratford and Ebbsfleet) to enhance the viability of real estate development. |

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| | **M6 Toll Road** | • Not seen as a critical factor. |
| | **JLE** | • Private sector lobbying directly to key political figures was key to starting the chain of events which result in the project gaining Royal Assent in 1992. |
| **Locational context** | **CTRL** | • In its simplest (early form) CTRL was seen as a means to link London with the Channel Tunnel and thence Paris and Brussels. Routing a major piece of rail infrastructure through the 'Garden of England' was perhaps always bound to invite controversy however. This meant that strenuous efforts had to be made to ameliorate the impacts of the project itself and the developments associated with it. |
| | **M6 Toll Road** | • Geographic/locational context was seen as favourable - location 'away from the spotlight' and alignment through relatively less valuable land (few houses affected) meant less controversy. |
| | **JLE** | • Docklands evolved with excellent access to sea and land freight lines, but relied on a local workforce and subsequently lacked integration with London's transport network. A key challenge for the docklands area (LDDC) was therefore how to develop strong (justifiable) transport links with the rest of London. |
| **Institutional capability** | **CTRL** | • Institutional capability associated with the Line Haul project and the major development hubs at King's Cross and Stratford perceived to be essentially adequate. However, the supposed symbiotic relationship between CTRL and Thames Gateway has not been backed up by strong/comprehensive institutional support. |
| | **M6 Toll Road** | • Not seen as an issue - overall perception that the private sector can do things faster and more cost effectively.<br>• Institutional side not critical in view of lack of agglomeration objectives |
| | **JLE** | • Institutional capability of LUL – London Underground had not built an underground line since 1975 and lacked the up-to-date expertise and knowledge required. A team was drafted in from Hong Kong MTR who brought with them (and applied to the JLE) a set of procedures which had been proven to work successfully on a project couched in a completely different political/social context. Some of JLEs management problems may be attributed to this lack of context awareness<br>• The major challenge for the JLE was seen to be the tunnelling work, so the management team had a strong civil engineering bias.<br>• Both the conservative and labour governments were generally highly supportive of the project, however both governments created challenging contexts for the project delivery phase |

| | | |
|---|---|---|
| | | • Local government was criticized for lacing the capability to successfully interact with MUTP projects |
| **Globalisation** | **CTRL** | • None identified |
| | **M6 Toll Road** | • London was perceived to be under threat as a global and the European financial capital through competition from Frankfurt and Paris. |
| | **JLE** | • The sustainable development agenda and matters such as climate change (perhaps seen as being in their infancy at the time the CTRL was being planned and appraised) had little impact on the projects. |
| **SDV and Climate change** | **CTRL** | • The sustainable development agenda and matters such as climate change (perhaps seen as being in their infancy at the time the CTRL was being planned and appraised) had little impact on the projects. |
| | **M6 Toll Road** | |
| | **JLE** | |

### 5.2.1 Context-specific responses to overall research question #1

**ORQ#1 - What constitutes a 'successful mega urban transport project (MUTP) in the 21st Century?**

#### 5.2.1.1 UK case study projects judgements on success?

As might have been anticipated, on the basis of interviewee returns none of the three UK case study projects can be judged as either a wholehearted success or failure. The key points to note in this regard on a project-by-project basis are as follows:

**CTRL**

The objectives associated with time/cost/specification (the 'iron-triangle' criteria) were *ostensibly* met if one takes the implementation programme that was established *after* the 1997/98 financial restructuring took place as the basis for such a judgement. However, it is also clear that costs escalated very significantly during the project's planning period in the 1980s and 1990s as line haul and station proposals became progressively more certain and that on this basis if one made judgements based of forecasts made prior to 1997/98 the time/cost/specification requirements were *not* met.

The wider agglomeration (emergent) objectives appear to be in the process of being met in light of development/regeneration initiatives currently underway at King's Cross, Stratford and Ebbsfleet (all private sector led). These developments are, however, still some years from completion and it is therefore reasonable to conclude that the full spectrum of agglomeration impacts will *not* become apparent in the near term. The economic value of this agglomeration impact remains though an indeterminate dimension as far as the Treasury is concerned – too important to ignore but economically important to as yet an undecided degree.

**M6 Toll Road**

The road was completed on time, to an appropriate standard and at no/minimal cost to the public purse. There are, however, significant differences in the way that the 'success/failure' of this project is perceived as a result of a lack of clarity about its principle intended function - i.e. its *stated* objective of providing a 'congestion-free alternative to the M6 motorway versus its perceived objective of alleviating congestion on that motorway. No evidence has been uncovered to indicate that any wider agglomeration objectives (emergent or otherwise) were set or achieved for the M6 Toll Road.

**JLE**

The project was completed three years *later* than expected and 48% over budget – it was seen as a 'disastrous' example of public sector project management by the Treasury and the Labour government and led to a change of government policy re: project appraisal and was one of the reasons cited for the adoption of the (disastrous) Metronet PPP. The specification for the moving block signaling system, one of the high quality elements of the project, could *not* be delivered on time and was ultimately downgraded to a traditional system in order for the line to open by the Millennium target date. The JLE has subsequently been upgraded with a moving block system which will enable the line to fulfull it's original capacity objective. The upgrade is part of a JLE and Northern Line signaling upgrade programme, which is in itself late and over budget is due to complete by the end of 2011.

Notwithstanding these problems, the JLE has been highly successful in relation to its objective to improve accessibility between central London and Docklands. It has also successfully relieved congestion both on the underground network and in relation to road traffic in the users in the Docklands area. The station designs, in particular, have been highly acclaimed both by experts and end users (albeit achieved at high cost). The project has furthermore been a highly successful in opening up East London to London's underground system as well as being a catalyst for urban regeneration in East London. It also enabled the completion of Phase 2 of Canary Wharf which has considerably strengthened the Docklands as a global financial centre and helped to move the economic centre of gravity of London eastwards (in line with the metropolitan development strategy of the Greater London Authority.

Figures 5.1 and 5.2 illustrate the comparative ratios of estimated to actual total project costs and project durations for the three UK case studies.

### 5.2.1.2 Project visions, goals and objectives: relationship with 'success'

**Core project objectives v broader agglomeration objectives**

The extent to which core objectives relating to (especially) time and budget have been met is regarded by many as the fundamental basis for judging project success/failure. In parallel, agglomeration objectives such as those relating to regeneration and economic growth are seen as important.

Over and above this, 86% of UK case study interviewees agreed sustainability should play a major role in the planning, appraisal and delivery of MUTPs (see Fig 5.3 below) This was seen by respondents, however, as being very difficult (if not impossible) to measure successfully, especially in the UK context where it was considered that only rather immature MUTP appraisal methodologies for judging success exist (see Fig 5.4 below). Only 50% of interviewees, furthermore, felt that sustainable development offers a better framework for

judging the success of a MUTP. This is perhaps understandable given that MUTP agglomeration impacts/benefits are not only difficult to discern and appraise with accuracy but may only arise well *after* the project has been completed - as in the case of CTRL and JLE.

**Figure 5.1: Ratio of estimated to actual total project costs for the three UK case studies**

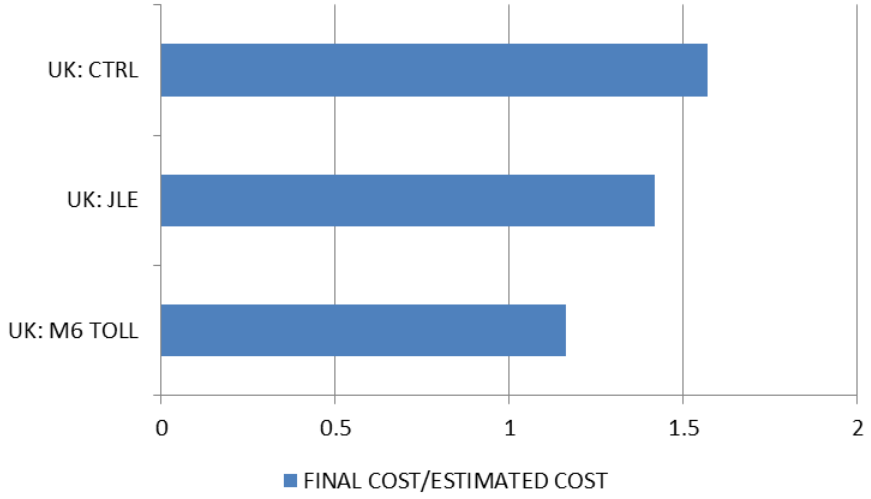
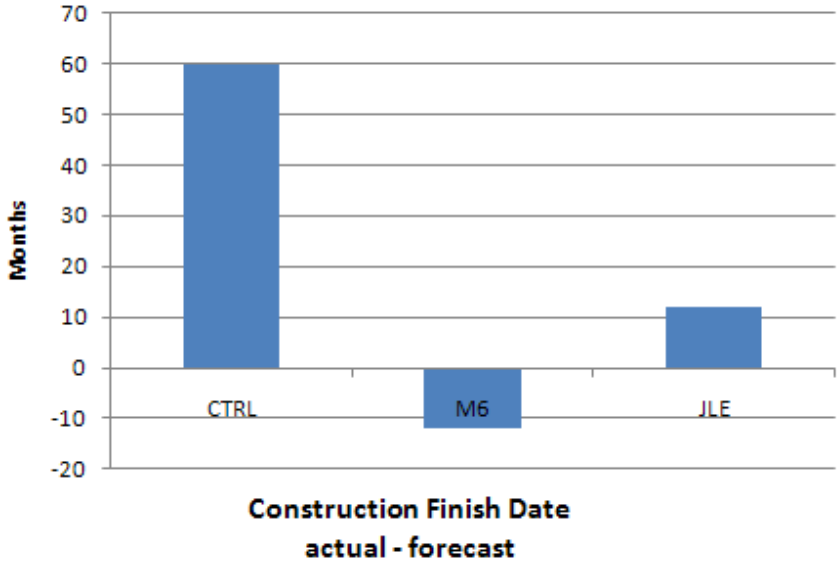



**Figure 5.2: The ratio of estimated to actual total project duration for the three UK case studies**




The M6 Toll Road project objectives appear to have been latterly the product of much 'closed door' negotiations between the concessionaire and government - which according to those interviewed led to a considerable breakdown of 'trust' among a variety of stakeholders, and subsequent opposition to the project (albeit of a limited scale).

In the case of CTRL, interviewees frequently mentioned the important role played by political consensus builders in defining and refining project objectives, visions and strategies over the course of the planning and appraisal period. As noted variously above, CTRL objectives evolved during project planning to include significant new agent of change roles/functions associated with regeneration and restructuring.

JLE objectives were initially focused on the development of a standalone line to link Canary Wharf with the skilled population of South East England via Waterloo and London Bridge. These rather narrow objectives were developed in-house by the private sector, and with political support for the project gained via a large contribution to the construction of the line. However, as the project progressed other broader objectives emerged to encompass the provision of infrastructure capable of supporting regeneration of the Docklands.

**Figure 5.3: Interviewee responses to question - "Do you consider that sustainability considerations should play a major part in the planning and delivery of MUTPs?"**

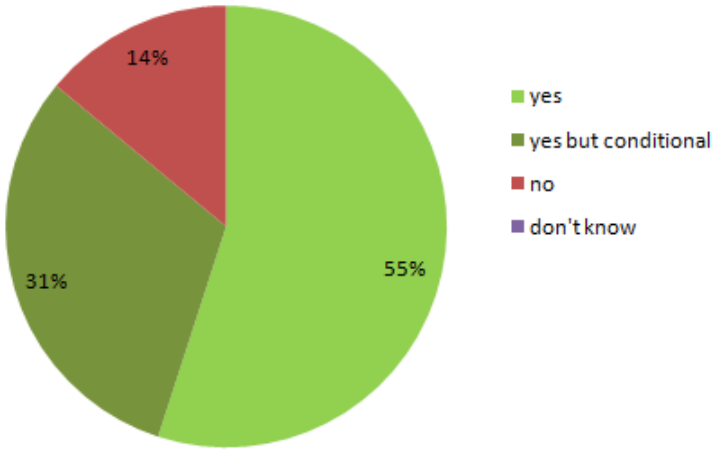
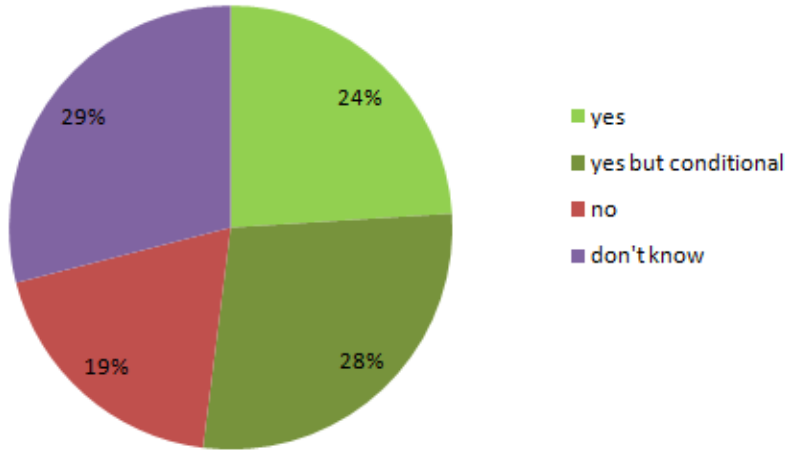


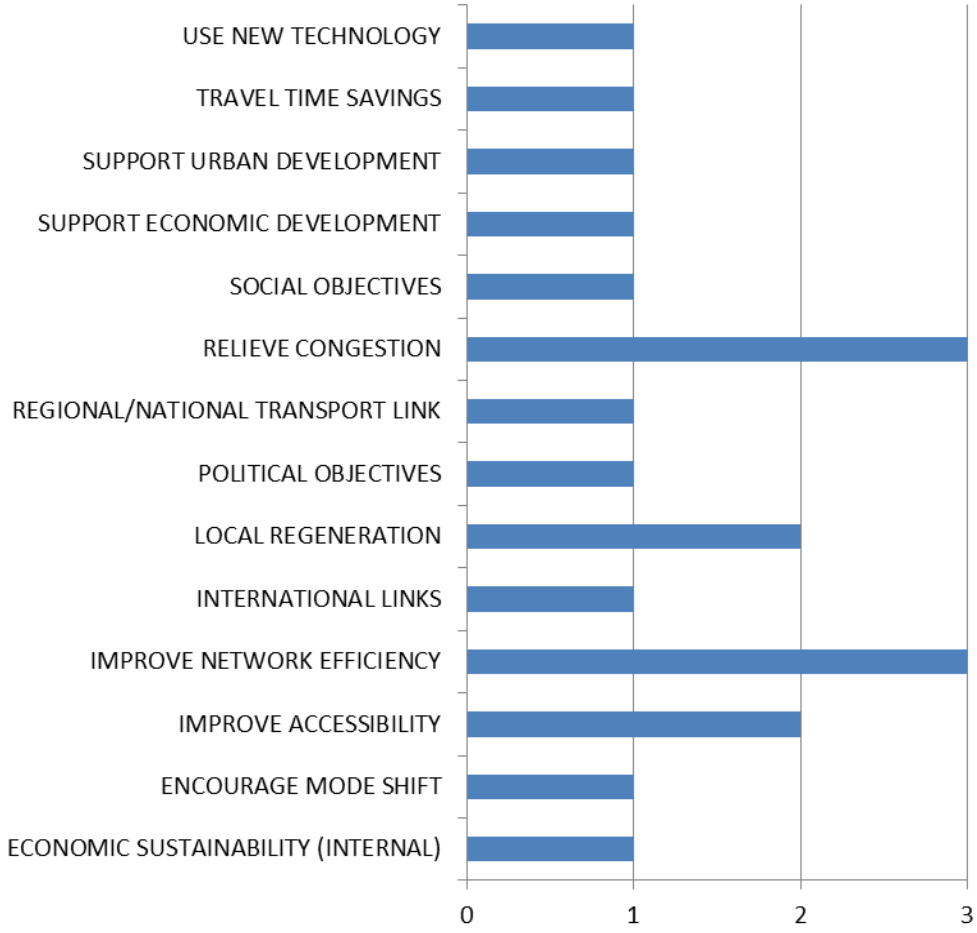

**Figure 5.4: Interviewee responses to question - "Does the new emerging agenda related to visions of sustainable development offer a better framework for judging the success of MUTPs?"**




**Objective setting for PPP/PFI projects**

In regard to MUTPs to be delivered through the PFI/PPP mechanism, both CTRL and M6 Toll Road interviewees note the tendency for private sector bidders to interpret project objectives in a way that is most favourable to them, with the result that 'end products' match the financial aspirations of such bidders rather than what the public sector originally sought to deliver – even when such projects are positioned as offering government a potential 'win-win' solution by securing the provision of much needed infrastructure at no/least cost to the public purse. In this connection, interviewees also cautioned that the public sector is rather less astute at negotiating terms than their private sector counterparts.

**Figure 5.5: Project objectives for the three UK case studies**




**Project visions/objectives and political cycles**

Political influence is frequently seen as the most powerful force in regard to MUTP planning and appraisal processes. Indeed, interviewee responses confirm that contextual change brought about by short-term political horizons/cycles frequently constrains the ability of sponsors and delivery agencies to implement MUTPs and their attendant plans and programmes, especially when these have a necessarily long-term perspective due to lengthy project lifecycles. The tendency towards 'short-termism' on the part of politicians and civil servants suggests both an inability and lack of desire to effectively scan existing and future context – rather, the focus is on defining what is practical and achievable in the short run.

Thus MUTPs are affected by the apparent tension between 'vision' and political practice/pragmatism - such pragmatism, often associated with short-term political cycles, is frequently seen as the enemy of strategic thinking and strategy formulation/implementation.

There appears to have been no clearly thought out, all-embracing ‘strategy’ for the M6 Toll Road other than the imperative to deliver a piece of road infrastructure at no/minimal cost to the public purse via the PFI mechanism. Similarly, for CTRL project visions and strategies ultimately 'emerged' during the course of the project planning period - often as a result of direct political influence and lobbying. For the JLE there was significant lobbying of politicians on the part of the private sector (Canary Wharf) to obtain support for construction

of the line which ultimately emerged as part of the piecemeal development of infrastructure for Docklands.

#### 5.2.1.3 MUTPs as 'agents of change': CTRL and JLE

In the UK the relationship between MUTPs and wider spatial/sectoral initiatives has not been fully exploited in terms of coherent land use-transport strategies (and retrofitting). This appears true of CTRL, which, whilst it was a key element in the policy decision in favour of regeneration, growth and restructuring initiatives, has not been accompanied by dedicated and meaningful resource allocation plans, programmes and institutional arrangements. At best, the project can be said to have had a beneficial impact on the encouragement of investment in (particularly) regeneration. Moreover, the full benefits of agent of change MUTPs may well only materialise in the longer term. Similarly, the integration of land use-transport strategies for JLE appears to have been somewhat patchy – this was well developed in Canary Wharf but was given less attention at other stations. Thus the 'agent of change' potential of JLE was perhaps not fully exploited.

### 5.2.2 Context-specific responses to ORQ#2 and ORH#3

**ORQ#2 - How well has risk, uncertainty and complexity been treated in the planning, appraisal and evaluation of such projects?**

**ORH#3 - The level of competence in decision-making and planning in today's fast-changing world is best assessed by the adequacy of the treatment of risk, uncertainty and complexity and sensitivity to context – all of which are important demands on Strategic Planning.**

#### 5.2.2.1 Lengthy planning and implementation period as the major source of risk, uncertainty and complexity

The lengthy planning and implementation periods for UK MUTPs (and other projects) – see Figure 5.6 – was most often cited by interviewees as *the* major source of project risk and uncertainty - having particularly serious knock-on effects for private sector investors. Key issues in this respect centred around the fluidity of various contextual elements, especially the changing nature of stakeholder agendas, during the planning and appraisal period. Essentially, project planning agents look for 'certainty' and are therefore uncomfortable with the evolutionary nature of many large/complex MUTPs.

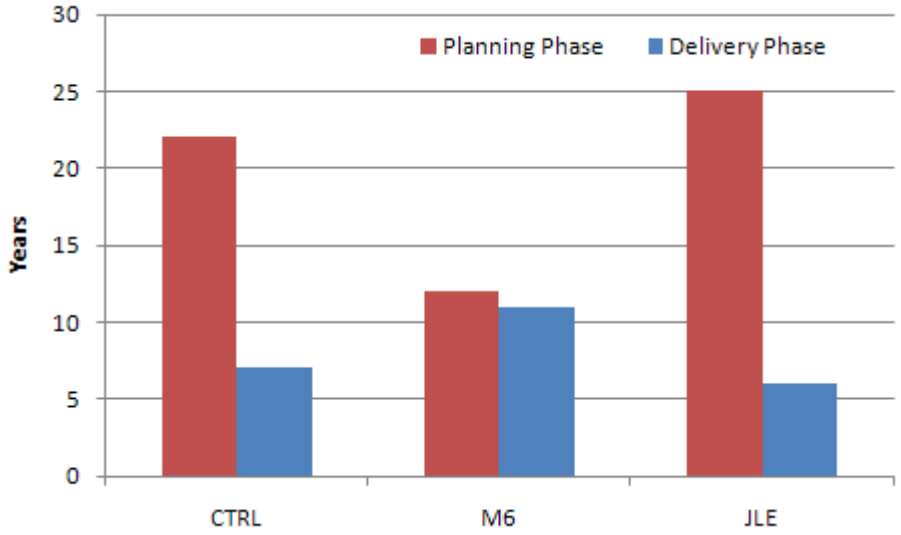
Overly short planning periods for MUTPs are also seen by some interviewees as a major source of risk and uncertainty as decisions made in the early stages of a project without the adequate levels of information and risk awareness can have high impacts later on in the project life cycle.

#### 5.2.2.2 Clarity of project objectives and risk, uncertainty and complexity

The existence of clear and firmly established (inflexible) project objectives at the commencement of MUTP planning is *not* always helpful in terms of mitigating risk in view of the likelihood that important contextual elements may undermine prevailing approaches and strategies (and even the basic *raison d'etre* of some MUTPs).

In respect of CTRL, changing contexts resulting from new stakeholder agendas meant that having firmly fixed objectives at the outset could have increased risk by reducing the project's ability to evolve and thereby respond to these fluid agendas. The JLE's objectives were also fluid prior to project implementation (from 1993 onwards) at which point they became relatively fixed and were thus not subject to change even when the new Labour Government came into power in1997.

**Figure 5.6: Length of the planning and delivery phases of the UK case studies**




"When you go into a large project, what you have to know is that everything is going to change, and you have to move with that change. If you find forces or whatever it is that just locks you into 'this is what you said you were going to do and now you have to do this'... if you're so stupid to have that happen to you, then you're …. you're done".

The above quotation suggests that complex projects with multiple spatial, sectoral and stakeholder interfaces and the consequent potential to function as a significant 'agent of change' may benefit from a period in which project objectives are allowed to mature through in-depth consideration of different stakeholder agendas and associated visions/objectives. The key question here is of course how long should such debate be allowed to continue in the face of financial, political and other imperatives to 'get going'- as in the case of JLE where compressing such a debate can load the project with risks and missed opportunities.

However, the availability of clear project objectives in relation to the M6 Toll Road and JLE was seen as a means to mitigate risks resulting from the interplay between different stakeholder agendas and, more broadly, contextual change over time:
"…….you would attempt to narrow down as much as you can in that planning period before you go hell for leather, because you avoid subsequent problems, and that is critical in any project".

In particular, the existence of clear and straightforward objectives relating to the existence of a very self-evident problem/issue (congested motorway – M6 Toll Road and the promotion of regeneration through enhanced accessibility to Docklands - JLE) was most beneficial - not least in encouraging these projects to be seen as essentially 'benign'.

Interviewees noted that early project planning work may well be driven almost exclusively by perceived practicalities (especially in relation to cost minimization) while the evolutionary nature of the MUTP planning process may see the balance tip in favour of a more vision-led approach (e.g. for CTRL, early work concentrated on the identification of a least cost route,

however this was supplanted in the 1990s by emergent policies relating primarily to regeneration and restructuring). The same can be said of the JLE (emergent regeneration objectives) and the M6 Toll Road (emergent objectives associated with the PFI approach).

#### 5.2.2.3 Potential to take advantage of project visions/beliefs.

Interviewees suggested that public and private sector project sponsors/initiators may well be able to mitigate risk by taking advantage of government vision/belief systems.

In the context of the M6 Toll Road, MEL addressed risk by negotiating and then achieving favourable terms for the PFI concession. The context for this was seen as favourable in that government were committed to pursuit of the project as a 'prototype' PFI and were thus keen to ensure that it should not fail.

#### 5.2.2.4 Politics and the MUTP planning and appraisal processes

The planning period for MUTPs is often highly politicised and is therefore perceived to be risky for project sponsors. For CTRL, a number of project elements (e.g. regeneration) were 'bolted-on' in response to highly effective political lobbying. For the M6 Toll Road, the decision made to deliver the project as a PFI was influenced by prevailing political mantras substantially after project planning work had commenced. The JLE was also a highly politicized project, with the decision to proceed in the face of other ‘stronger’ projects heavily influenced by a private sector financial contribution to the infrastructure (some £400 million) which was seen to be in accordance with prevailing Conservative Party policy to encourage privatisation.

Despite the above, it would seem that there were no formal monitoring mechanisms in place to assess the risk, uncertainties and complexities stemming from insufficient political will, inappropriate governance and regulation. Whatever was done in this regard, took place on an *informal* basis using well established business/government networks linked to lobbying initiatives.

#### 5.2.2.5 Political risk, consensus building and champions

In the UK context, consensus building is seen as critically important at the MUTP planning stage as a means to mitigate risk. This is particularly significant at the highest political levels given that the size/cost/potential impacts of MUTPs such as CTRL make it *imperative* that key formative decisions are taken at the heart of government. This is often a one-off operation, but the monitoring of consensus throughout the life of the project may help to further reduce project risk.

Project champions play a key role in such operations given they are, by necessity, very astute consensus builders. Indeed, the garnering of essential project support is seen as based on political consensus building and persuasion and an acute awareness of what is likely to be politically ‘acceptable’ (suggesting, in many cases, a very fine-tuned awareness of context).

#### 5.2.2.6 Risk, uncertainty and complexity: and extracting benefits from MUTPs

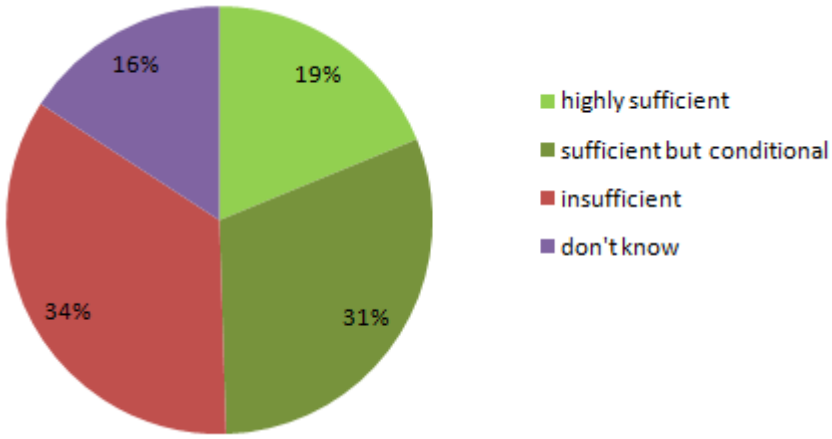
UK MUTPs encounter considerable risk and uncertainty in regard to the extraction of benefits through the planning system. Key 'risk issues' in this regard are considered by interviewees to encompass: lack of public sector expertise and negotiation skills; lack of adequate public sector tools and institutional support; the optimal scale of such benefits is often at odds with the scales of the institutions trying to extract such benefits; insufficient

political will to take a tough stance in the face of short-term political horizons, and; frequent staff turnover during negotiation processes.

In this regard, CTRL interviewees commented on: the initial uneasy bargaining atmosphere in view of the many uncertainties at the start of the project, and; the perceived lack of flexibility and consistency on the part of the public sector in applying prevailing (planning) rules and regulations. Moreover, MUTPs that are tied to real estate/regeneration projects are often unable to produce real benefits in the short-term due to the lengthy period required to complete such developments.

Despite the above, planning instruments/processes are seen by interviewees as generally adequate by 50% of respondents as shown in Figure 5.7 below, although JLE stakeholders highlighted the inadequacy of current systems to capture the value of property uplifts resulting from MUTPs.

**Figure 5.7: HLR interviewee responses to question - "Do you consider that the public sector has sufficient instruments, mechanisms, and capacity to extract effectively the potential benefits from private sector participation in public sector infrastructure?"**




More specifically, in regard to PPP/PFI-led MUTPs, it would seem from the interviewee responses that:

- there is the potential for political processes to specifically create conditions favourable to the success of a PFI which suggests that other potentially beneficial project impacts may become more difficult to achieve as a result (as in the case of the M6 Toll Road PFI where is a clear perception that government acquiesced in negotiations so as to ensure that it was able to proceed as a flagship PFI); and
- risk and uncertainty may arise as a result of inadequate bargaining skills on the part of the public sector to determine and extract an 'appropriate' amount of benefit from MUTPs.

### 5.2.2.7 Statutory processes and risk, uncertainty and complexity

Statutory processes can be a means to mitigate MUTP risks in the UK context. In the case of the CTRL, for example, the Hybrid Bill process introduced was seen to reduce the risk of delays (by virtue of employing rigorous, fast-track legal procedures and not requiring local inquiry into the project which meant that objections were handled by a Select Committee in Parliament, instead).

Many M6 Toll Road interviewees considered the UK's Public Inquiry system for major projects as flawed (the perception that most key decisions had already been taken by the time the PI took place) and/or as prolonging RUC.

#### 5.2.2.8 Risk share and Public Private Partnerships/Private Finance Initiatives

For Public Private Partnerships/Private Finance Initiatives (PPP/PFI) projects, interviewees suggest that determining an appropriate degree of risk- For PFI/PPP projects, interviewees suggested that determining an appropriate degree of risk-sharing between the public and private sectors is extremely problematical, requiring considerable enhanced skill and experience, especially in the public sector. In particular, they indicated:

- transferring high levels of risk to the private sector carries with it the risk that the project scope/nature may change from that originally conceived (as a result of re-negotiation of terms)to one that the private sector can best 'afford';
- the private sector will usually have a limit to their ability to successfully mitigate financial risk which is *much* lower than that of the public sector (often resulting in the public sector ultimately inheriting all risk in the case of large 'risk events');
- lengthy MUTP planning, appraisal, delivery and operation stages make such projects vulnerable to changing economic contexts, where private sector stakeholders are challenged to adapt their business models accordingly;
- risk management for MUTPs is an imprecise 'art' that requires the type of expertise that is *not* presently readily available in the public sector;
- balancing risk management between the public and private sectors is difficult when gains may only be realised in the long-term, while political horizons are typically short-term;
- appropriate levels of risk sharing will likely need to be established at the outset and this should include the analysis of potential project winners and losers;
- in practice it is only in the long-term and/or when problems arise that clarity over appropriate risk share can be obtained; and
- PPP/PFI arrangements pose a level of private sector risk exposure that is under-appreciated by the public sector - e.g. where projects require heavy up-front expenditure in return for proceeds that may not be fully realised for a considerable period of time.

CTRL, interviewees considered that reliance on the private sector alone to mitigate risk is *unrealistic* in today's uncertain climate and that, furthermore, funding arrangements that do this make MUTPs vulnerable to risk, uncertainty and complexity from the outset. One CTRL interviewee noted:

"No-one having seen what happened to the Channel Tunnel was going to put their money into it, and particularly not a project that actually depended upon the same revenue earning factors that affect the Channel Tunnel".

A similar pattern of logic was seen for the JLE where government's commitment to back the project *only* after receiving a private sector contribution loaded the project with significant risk from the start. This risk culminated in the form of the 1992 recession which prevented the private sector to make the promised contribution at the scheduled time and led to government imposing an 18 month moratorium whilst the project was refinanced.

Real estate developments associated with MUTPs are broadly seen as a suitable means of funding in the UK context – i.e. a potential element in project 'success' – in that the line haul and transport hubs are seen as mutually sustaining. However, concern was expressed by some respondents at the potential risk levels involved in relying too heavily on real estate given its exposure to market fluctuations, the heavy up-front expenditure coupled with

lengthy carrying periods before revenues are forthcoming. In consequence, some interviewees suggested that the public sector is better able to carry the long-term project funding risk, including those related to real estate risks.

### 5.2.2.9 Trust, transparency and risk

Interviewees suggested that the levels of 'trust' and 'transparency' present in regard to significant project dealings between key MUTP players will often be viewed differently by different stakeholder groups - who are frequently suspicious of negotiations that take place behind closed doors 'for commercial reasons'.

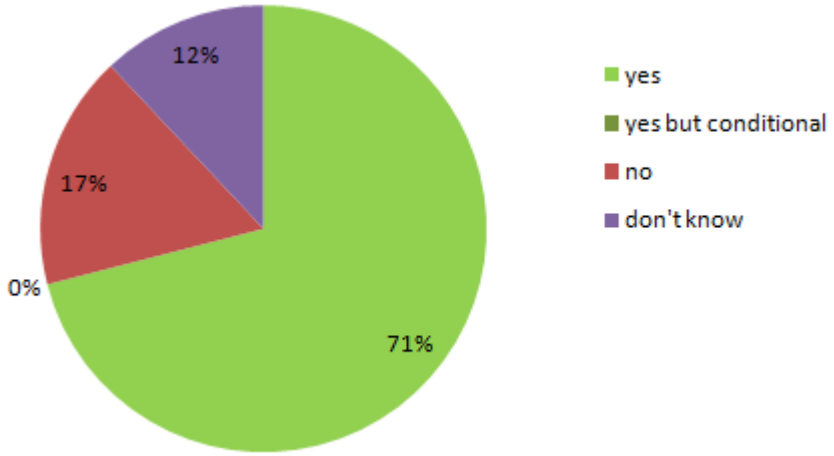
The same source suggested that the risk of losing stakeholder trust is perhaps most often found when changes are made in project objectives or when a project's fundamental *raison d'etre* is not made clear. Such changes may be abrupt or even subtle but will still require full explanation to all affected stakeholders.

Interviewees universally advocated that MUTP planning, appraisal and delivery processes should be conducted in a way that emphasises collaborative approaches and close personal relationships based on trust and that these approaches are far more effective than a more adversarial and competitive approach to MUTP developments. In this regard, stakeholder networking and the establishment of a 'trust environment' are seen as vital by most stakeholders, particularly in regard to overcoming 'silo thinking'. Despite this, respondents suggested that there are often multiple levels of transparency working within MUTP projects, frequently seen as unavoidable due to 'commercial sensitivity'

### 5.2.2.10 'Project control' and risk

70% of interviewees agreed that for most MUTPs it is unrealistic to expect to be able to control *all* aspects of project planning and delivery (see Figure 5.8), This is despite undertakings given to the contrary by many MUTP promoters to politicians and the public, and the expectations of project managers.

**Figure 5.8: UK HLR interviewee responses to question - "It is unrealistic to expect every aspect of the planning and delivery of the case study project to be tightly controlled from the outset?"**




Only the later project lifecycle stages (i.e., construction and operations) are seen as capable of offering opportunities for fuller control. This is especially true of complex projects such as CTRL and JLE. However, for a relatively straightforward MUTP, such as the M6 Toll Road, 'tight control' - as a means to mitigate risk is seen as clearly possible - particularly when

there exists clear objectives that are well understood by stakeholders. Tight control is also seen as more possible if the project is handled exclusively by the private sector.

Notwithstanding this, there appeared to be a consensus that there are likely to be more difficulties in exerting control during MUTP *planning periods* - as a result of competing stakeholder agendas and the interplay of political influence - which interviewees seemed to imply are especially prevalent in the UK.

### 5.2.3 Context-specific responses to ORQ#3

**ORQ#3: How important is context in making judgements regarding Overall Research Questions 1 and 2?**

#### 5.2.3.1 Contextual forces influencing pivotal decisions

The UK case study projects were seen to be responsive to changing contextual influences as revealed by the story-line of key decisions for each project (see Table 5.2):

**Table 5.2: Principal contextual influences on UK case study projects**

| CTRL | M6 Toll Road | JLE |
|---|---|---|
| • original decision to purse the project through private financing - product of the Thatcher Government but sustained by subsequent governments;<br>• decision to pursue dedicated high speed line - lack of capacity on existing lines but also a response to issues of national prestige and the notion that CTRL could be used to promote regeneration, restructuring and growth;<br>• arrival of new political champion (Heseltine) and associated Thames Gateway vision | • government policy in relation to key economic drivers such as improved connectivity between regions represented a favourable context for project launch;<br>• the general appetite for large projects, often driven by 'big ideas';<br>• the nature of the stakeholder environment - although this was seen in straightforward terms as either 'complex' (many stakeholder agendas present) or 'simple' (few competing stakeholder agendas to grapple with);<br>• the positioning of MUTPs as straightforward solutions to self-evident problems (as in the case of the M6 Toll Road) | • 1986 'Big Bang' deregulation of the banks;<br>• 1987 Kings Cross fire and its impacts on health and safety standards for the construction and operation of railways;<br>• Government's/LRT's decision not to proceed with the Waterloo-Greenwich Railway proposal by Canary Wharf<br>• Government's decision to proceed with the East London Rail Study;<br>• 1992 global economic recession and bankruptcy of Canary Wharf and Government policy decision for requirement of private sector contribution;<br>• LUL's ambitions to make JLE a technological and architectural showcase;<br>• tunnel collapse at Heathrow;<br>• Government decision to site the Millennium Dome at Greenwich<br>• Government' decision to replace JLE delivery team due to nervousness over the potential failure of Millennium Celebrations.<br>• de-specification of the line |

| | | |
|---|---|---|
| | | triggering O&Y delivery clauses to pay back £100m, forcing LUL to undertake signal upgrading work. |
| **UK projects overall:**<br>• the tensions between short-term political horizons and the need for long-term planning;<br>• the need for 'vision' to supplant an over-dependence upon rationalist forecasting;<br>• the current state of public sector finances, which encourage governments to pursue the PFI approach;<br>• the currently poor institutional context for MUTP planning and delivery;<br>• the inability of forecasting methodologies to take sufficient account of all contextual elements | | |

### 5.2.3.2 Political influence/support as a key contextual element

For both CTRL and JLE, political influence/support is seen as *the* critical contextual factor in all aspects of planning and delivery and a clear pre-requisite to the successful launch of a project. This was seen by interviewees as rather inevitable given that such MUTPs are usually costly, require some form of government backing, are potentially controversial and have wide ranging impacts over a broad area. This aspect was not so critical for the M6 Toll Road except insofar as government politicians were firmly behind the idea that it should proceed as a PFI.

The availability of an influential champion is also seen as a key asset for MUTP project sponsors, planners and delivery agents - especially those complex 'agent of change' MUTPs that are dependent upon some form of vision requiring faith and belief (e.g. CTRL and JLE). Political champions were not seen as necessary for a relatively simple project such as the M6 Toll Road**.**

Political champions (in particular) can fulfill a number of important roles as foci – including clarifying/setting/adjusting project objectives, establishing project credibility and mandate for project teams, consensus building and networking. 'Project guardians' can also provide additional support for champions, playing an important role in maintaining progress during times of adversity – e.g. during the project implementation stage of JLE, support from John Prescott (Deputy Prime Minister) as project guardian was critical.

Other aspects of political context that were seen as critical include: the tendency towards 'short-termism' on the part of politicians and civil servants (which suggests both an inability and lack of desire to effectively scan existing and future context – rather, the focus is on defining what is practical and achievable in the short run); the use of MUTPs as political tools (e.g. the CTRL-Thames Gateway vision was seen as a means to promote political agendas; the positioning of CTRL as a means to promote regional restructuring, growth and regeneration required both considerable faith and strong advocacy skills amongst key political decision makers, and; consensus-building amongst key political and other influential decision-makers is seen as a critically important contextual matter, *especially at the project conception, planning and appraisal stages* - i.e. before the project has gathered sufficient 'momentum' to have a life of its own. Consensus-building requires 'trust' and strong lobbying skills.

The political context for the M6 Toll Road effectively shaped its planning and delivery, albeit to varying degrees - this is variously seen in relation to the changing status of the project to a PFI and the political imperative to address congestion problems on the M6. The financial

context for the project (conducted as a PFI in the face of limited public sector finance availability) was also largely seen as all-pervasive. This resulted in the creation of favourable conditions for the PFI and less concern about the possible wider roles and impacts of the project. The institutional context for the M6 Toll Road was considered to be important in that central government's vision for the role and function of the project changed when it became a PFI (government/politicians were most keen to ensure that this 'prototype' PFI road project should succeed at all costs.

### 5.2.4 Context-specific responses to ORH#1

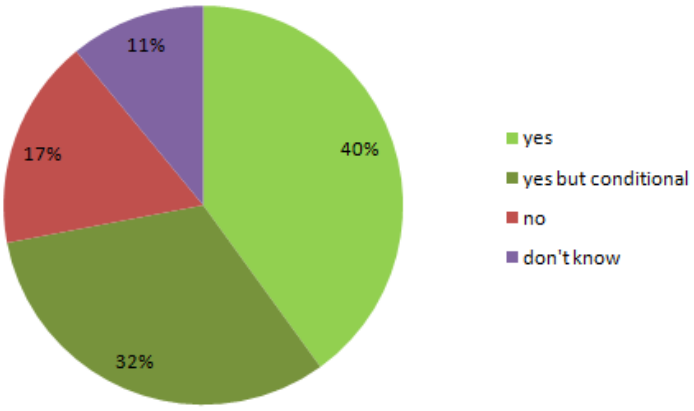
**ORH#1 - Traditional criteria relating to cost overruns, completion dates, generation of travel time savings for users and rates of returns to investors are inadequate measures of success in the 21st Century as sustainable development concerns become increasingly critical both globally and locally.**

#### 5.2.4.1 Closed v open systems approach

MUTP planners (in any context) need to be aware that complex large MUTPs need to be treated as *both* 'open' and 'closed' systems at different stages, and for different reasons. The majority of HLR interviewees agreed that MUTPs (irrespective of complexity and size) were treated as 'closed systems' for economic appraisal (see Figure 5.9). In the case of the CTRL and JLE, both were *initially* treated as a closed system in terms of financial (demand) modelling and appraisal as part of the business case assembly. They were *subsequently* treated as 'open systems' in terms of accommodating broader elements that were ultimately a major part of the justification of the project. The M6 Toll Road was, however, treated as a discrete closed system throughout for which demand and supply was accurately forecast. This was not seen as problematical, but rather a necessary process undertaken as a means to support the framing of the project as a PFI.

A 'closed system' approach to MUTP development was seen by interviewees as more justifiable (for those projects that are: relatively simple/straightforward, and; better suited to PFIs where financial imperatives tend to overshadow most other concerns. By contrast, the same source suggested that more complex projects with wider 'agent of change' /agglomeration objectives and associated strategies/plans/programmes need to be treated as fully open during the planning and appraisal process so as to allow for the playing out of stakeholder agendas and other contextual forces.

**Figure 5.9: UK HLR interviewee responses to Hypothesis 2 "Economic Rationalism"**



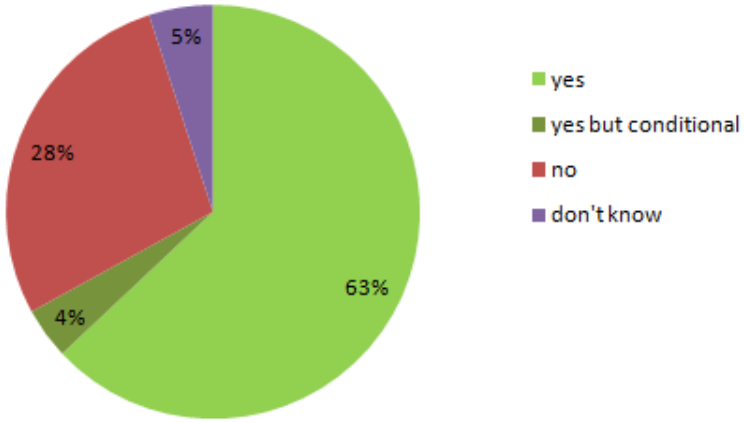
### 5.2.4.2 Political will/ influence

In the UK (as elsewhere), political will/imperative/pragmatism frequently overrides recommendations based on outputs from appraisal methodologies that apply 'traditional' tools/methods and criteria. Interviewee responses suggested that 'judgement' and 'gut feeling' are seen as very significant in determining whether (and in what form) a project should proceed in the form of more formal appraisal methods. Some respondents alluded to the fact that on some occasions, key decision-makers frequently do *not* rely on modelling exercises (despite these being favoured by many government departments) and purely rely on the 'gut feeling,'.

For UK MUTPS, most key decisions that shape projects are taken at the highest political level due to their prevailing cost, size, complexity and impact characteristics (and also concerns about national prestige). Such decisions are taken only after substantial political manoeuvring and consensus building to ensure that projects achieve sufficient momentum – particularly relevant in the case of CTRL and JLE.

For PPP/PFI projects, financial considerations appear to override many other criteria – such projects cannot be seen to fail as far as government is concerned.

**Figure 5.10: UK HLR interviewee responses to question - "Is there any evidence of events where politicians have had a significant impact on the planning, appraisal and delivery of the project over and above the apparent economic rationalism approach?"**




### 5.2.4.3 Appraisal techniques/tools and forecasting models

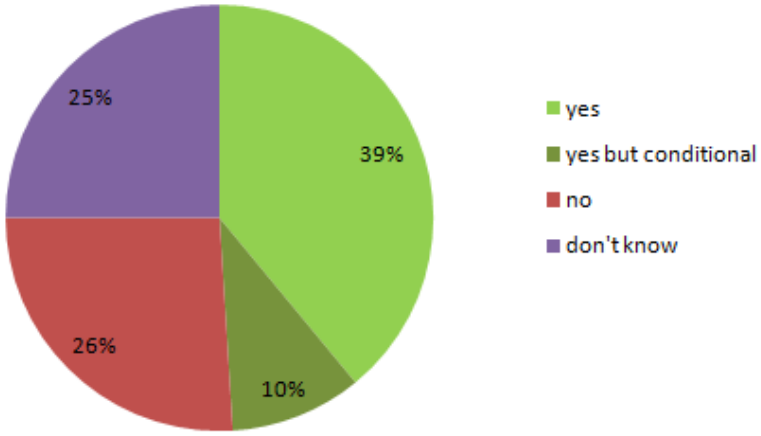
Current UK MUTP project appraisal techniques/tools and forecasting models, (especially the manner in which they are utilised), are perceived to be *flawed by 50% of UK respondents as shown in Figure 6.11 below* (primarily a response from CTRL and JLE interviewees). This suggests that dependence upon these tools, methods and processes alone is unlikely to deliver a successful MUTP. Key identified issues/problems associated with the current appraisal and forecasting efforts 'are:

- the inability to identify, quantify and 'weight' all relevant factors that determine/influence project outcomes with any real degree of precision;
- perceived bias towards the achievement of short-term benefits (which is problematical for MUTPs which are characterized by long-term impacts;
- the lack of attention to future contextual elements/conditions likely to impact on project outcomes - not least because many of these contextual influences are extremely difficult to discern and are, in any case, subject to change over time;

- as noted above, political influence frequently overrides outputs from traditional methods and processes;
- the perception that decision-makers are often told 'what they want to hear' in terms of model outputs that purport to represent project achievements;
- the shortcomings associated with the current toolbox are not adequately explained to decision-makers;
- the inconsistent treatment, mainly by sponsors/proponents of MUTPs such as CTRL and JLE, as projects that are both 'open and closed systems' and as both 'commodities and services' at different stages in their lifecycle.

Notwithstanding the above, interviewees emphasised the need to *enhance* current tools, techniques and processes rather than abandon them - by, for example, making use of a wider multi criteria approach that takes full account of future contextual conditions.

**Figure 5.11: UK HLR interviewee responses to question - "Were the appraisal and travel demand models used to forecast potential revenues fundamentally flawed"**




### 5.2.5 Context-specific responses to ORH#2

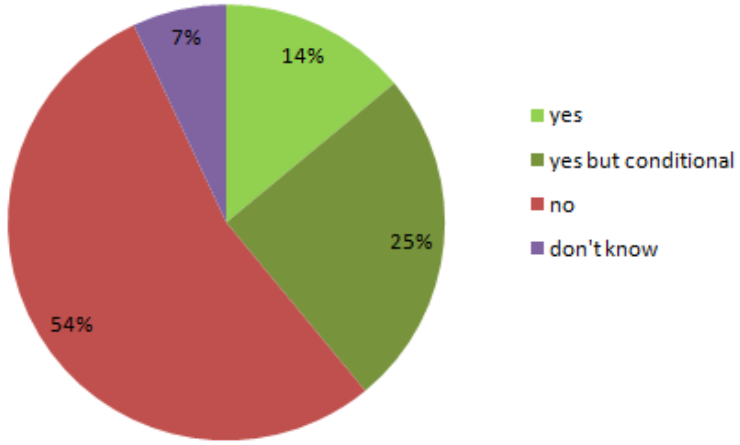
**ORH#2 - The new emerging international and local agenda related to vision(s) of sustainable development is multi-dimensional and goes beyond notions of environmental sustainability, as critical as this may be, in that it also concerns inter-related concepts of economic sustainability, social sustainability and institutional sustainability.**

#### 5.2.5.1 Role of SDVs in MUTP planning and appraisal

According to interviewee respondents, SDVs did not play a major role in the planning and delivery of the UK case studies, as shown in Figure 5.12. Furthermore for all three case study projects there remains considerable skepticism on the part of interviewees about the role of sustainable development visions relative to MUTP planning and delivery. In particular, it is suggested that operationalising such visions in a meaningful way is extremely difficult, and certainly not yet sufficiently developed to enable them to be applied effectively to MUTPs in the UK so as to influence day-to-day decision-making.

Professional silos represent effective barriers to the introduction of a more holistic view of SDVs as a framework for project planning and delivery.

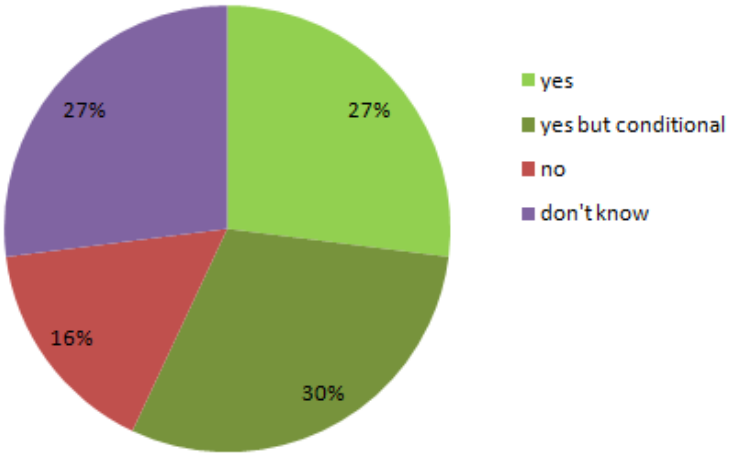
**Figure 5.12: UK HLR interviewee responses to question - "Did sustainability considerations play a major part in the planning and delivery processes of the case study projects?"**




### 5.2.5.2 MUTPs and retrofitting

Despite the acknowledged evolutionary nature of many MUTPs, there is little apparent current thinking or debate in the UK as to how such projects might be better retrofitted so as to meet the sustainable development needs/requirements of the 21st Century. Indeed, there appears to be a distinct lack of clarity on the part of OMEGA interviewees as to how MUTPs and the development/regeneration projects they spawn might be planned and/or retrofitted so as to achieve key sustainability objectives. Figure 5.13 below shows only 25% of interviewees unconditionally agreed it was clearly possible to retrofit MUTPs to achieve more sustainable outcomes.

**Figure 5.13: UK HLR interviewee responses to question - "Do you consider that is would be possible to introduce retrofit strategies that would enable MUTPs in general, and the project in particular, to achieve more sustainable outcomes?"**



## 5.3 Potential generic responses to OMEGA overall research questions and hypotheses

### 5.3.1 Potential generic responses to overall research question #1

**ORQ#1 - What constitutes a 'successful mega urban transport project (MUTP) in the 21st Century?**

#### 5.3.1.1 Appropriate bases for assessing 'success'

Interviewees overwhelmingly considered that to make a sound judgement about a project's success/failure it is vitally important to have a clear sense of the overriding context that prevailed at the time the project was launched since this will have inevitably impacted on: the fundamental raison d'etre of the project; any revisions made to project objectives during the planning, appraisal and delivery period - often to reflect 'bolt-on' needs/desires associated with such matters as territorial restructuring, regeneration - frequently as a reflection of political imperatives or visions (as was the case especially for CTRL and JLE).

#### 5.3.1.2 Time/cost/specification (TCS) objectives v broader objectives

The degree to which TCS objectives have been met (and are continuing to be met) is still seen by many stakeholders as the fundamental basis for judging project success/failure. Other, less tangible agglomeration objectives relating to (for example) regeneration and economic growth are also seen as important but are perceived as being very difficult (if not impossible) to measure successfully.

#### 5.3.1.3 Project visions, goals and objectives - contributions to 'success'

**Early determination of likely project complexity**

There is a need for MUTP planning and delivery agents to reach a clear understanding, *at an early stage*, of the degree of complexity likely to be associated with each MUTP development - including whether each project is expected to deliver a transport services as a profit-earning entity or a subsidised public service - in discussion with key stakeholders, and to prepare appropriate consultation plans/programmes with this in mind. In particular, it is important to differentiate between those projects that are likely to be simple/straightforward and those which are far more complex with potentially multiple interactions with the areas they serve/traverse - and for which agglomeration objectives are likely to be attached to the project**.**

**Clear visions and objectives at the outset*?***

A number of interviewees suggested that MUTPs which are accompanied by clear visions and objectives are more likely to be 'successful' in terms of the delivery of a desired 'end-product'. Such clarity is beneficial both in reaching a firm understanding with stakeholders about anticipated project outcomes (especially in terms of managing stakeholder expectations) and consequently in providing a sound basis for appraisal and evaluation.

However, in light of other observations regarding the necessarily evolutionary nature of 'emergent' objectives for projects which are deemed 'complex' (in light of their potentially multiple interactions with the areas which they serve/traverse and/or are accompanied by

multiple agglomeration objectives), it would seem that the existence of clear and firmly established visions and objectives at the outset is more likely for relatively straightforward projects such as the M6 Toll Road. By contrast, for CTRL, clarity of visions/objectives *at the outset* was not seen as fundamentally important in that project objectives ultimately *had* to evolve over a considerable period of time due to competing and evolving contextual forces. For JLE, findings suggest a middle ground whereby there may be a need for clear visions to be established at an early stage but accompanied by flexible and robust strategies that are capable of adaptation.

Full dissemination of project objectives (including those associated with project and agency roles/functions and performance indicators) to all stakeholders – both at project commencement and when any significant changes are made in response to changing contextual influences – is seen a key feature of successful projects.

In light of the above it is suggested that the establishment of clear and meaningful objectives at the commencement of project planning is more appropriate for relatively straightforward MUTPs such as the M6 Toll Road which are not seen as being associated with wider visions or agglomeration objectives.

By contrast, complex projects with multiple external interactions (especially those which are positioned as 'agents of change') may require: a period of considerable reflection and debate during which the interplay between different stakeholder and other policy agendas can be played out; transparent debate at the 'highest political level', and; once such processes have been completed, the full recognition of the ‘agent of change’ roles/functions of an MUTP and its clear articulation in project objectives.

The relationship between project vision, scope, principal objectives and secondary objectives often needs clarification, together with an explanation of how these relate to prepared technical and management plans, so as to manage stakeholder inputs and expectations.

**Emergent objectives**

For many MUTPs there exists the likelihood new objectives will emerge over the course of the project planning and appraisal period as a result of changing contextual elements (including emerging/changing stakeholder agendas) – again, this is perhaps most relevant for those projects that are characterised by potentially multiple interactions with the area\s they traverse/serve and which are accompanied by 'agent of change' objectives. For example, for CTRL emergent objectives were no bad thing in that they ultimately helped shape the project to better suit its contextual influences than early proposals that were essentially limited to a 'least cost' solution for upgrading existing facilities. The project therefore clearly benefited from a 'time to breathe' factor.

**MUTPS as 'agents of change'**

For MUTPs to function fully as 'agents of change', careful thought needs to be given to the *institutional context* into which they are placed. This appears not to have been the case for CTRL – here there was no evidence of the establishment of an institutional framework capable of dealing with the multiplicity of contextual elements (especially stakeholder contexts) so as to maximise the potential benefits of CTRL on the Thames Gateway. The JLE was slightly better placed in this respect as Docklands was already designated as an Urban Development Area with the LDDC formed as an Urban Development Corporation tasked with its development. The LDDC did not, however, cover the entire length of the JLE, resulting in missed opportunities to oversee land use-transport planning.

MUTP planning and delivery agents, such as those involved in the CTRL and JLE, often do *not* demonstrate clarity of thinking about the nature and impact of forces of change. Instead, they follow a vision, sometimes only a belief or even merely a hope) that the project will have a beneficial regeneration/restructuring/growth impacts and that the private sector is capable of committing sufficient resources to implement the necessary projects and their attendant developments.

**Stakeholder involvement in objective-setting**

The above discussion re: agent of change functions, would seem to contradict the view that project objectives (including those associated with project and agency roles/functions and performance indicators) should be clearly set out at the outset and fully disseminated to all stakeholders. Indeed, having clear, consistent (and perhaps inflexible) objectives at the outset of complex projects *may* be positively harmful to a project in not allowing it to adequately respond to changing contextual influences. Thus, all key MUTP stakeholders should be involved in setting project objectives - not merely consulted 'after the event'. However, achieving widespread agreement on project objectives *can* prove extremely difficult to achieve, especially when dealing with a fragmented institutional framework and manifold stakeholder agendas. This suggests the need for skilled consensus builders who are able to exploit and influence well established social/political/business networks.

Even seemingly straightforward MUTP objectives will likely need to be made clear to all affected stakeholders so as to minimise continued misunderstanding, conflict and 'expectation creep' (a point made by CTRL, M6 Toll Road and JLE interviewees).

**Project objectives and related appraisal criteria**

As noted above, judgements concerning MUTP 'success/failure' *must* take into account the objectives that were originally set for a MUTP - in parallel with the evaluation of outcomes of actions that are undertaken with a view to retrofitting. Also, such objectives should differentiate between those that are: core/essential, and represent the fundamental reason why the project is being implemented, and; those that represent perhaps less certain but nevertheless desirable project outcomes. Having such a categorisation will enable a fairer and more consistent approach to be adopted to project appraisal and evaluation - always provided that this is accompanied by the establishment of appropriate performance criteria and appraisal and evaluation systems/processes.

MUTP objectives should also differentiate between the need to deliver a commodity and a service (MUTPs are often a commodity that also delivers a service). Objectives set during the early planning phase - which do not take account of these fundamental distinctions - may inhibit progress in later stages of the project lifecycle. Moreover, project objectives should acknowledge that the benefits/costs and impacts associated with MUTPs are often: very difficult to discern at the outset; only realised in the long-term, and; are also unexpected. Project objectives should be capable of being operationalised in such a way as to be meaningful to all stakeholders. Interviewees expressed particular concern that MUTP objectives associated with both 'regeneration' and 'sustainability' are frequently more reflective of political rhetoric than meaningful action on account of the fact that they are frequently incapable of implementation in a direct and practical sense.

### 5.3.1.4 Project planning and delivery processes - contribution to 'success'

**Importance of context**

Evidence obtained from the UK case study interviewees suggests that astute MUTP planning and delivery agencies will need to pay close attention to a number of *contextual influences*. To be 'successful, MUTPS :require high levels of faith, belief and commitment in the project, plus trust among project stakeholders as well as effective political intervention at strategic points. Respondents also indicated that there needs to be clear recognition that 'politics' is likely to play a key role in *all* aspects of project planning and appraisal. Certainly this was evident in the case of the CTRL and JLE where political influence impacted in most aspects of the planning and appraisal processes. For the M6 Toll Road, such influence was mainly exerted in relation to the decision to pursue the project as a PFI toll road rather than a public sector relief road.

As regards context awareness, interviewee responses suggested that a key factor in determining whether a project is likely to be 'successful'. is the degree of keen context awareness. MUTP planning and delivery agents that are able to successfully mould projects in line with changing (often very fluid) contextual influences are more likely to be successful. Based on the UK case study findings, it would seem that such awareness is *rarely* yielded by the establishment of formal context scanning mechanisms/processes – but more deduced from informal (often personal) networks conducted intuitively by individuals. In particular, the complex and often changing nature of the stakeholder environment poses particular concerns.

**Changing contexts & MUTPs**

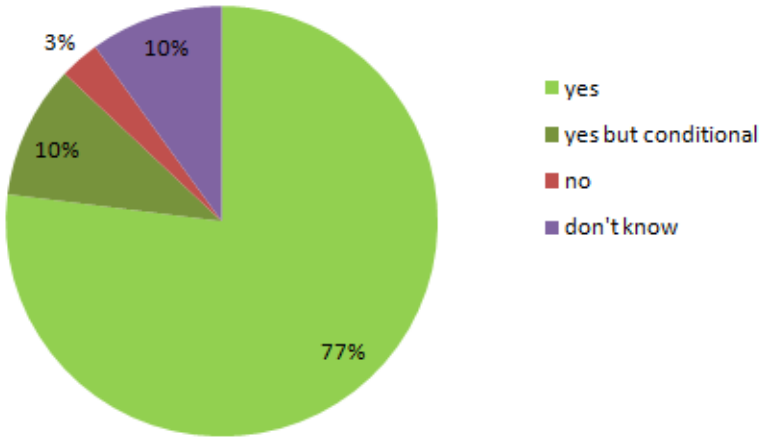
Changing contextual elements contribute to the evolving nature of 'complex' MUTPs. In particular, the planning process may become subject to fundamental shifts in the raison d'etre for the project as a result of contextual change brought about by political mantras/policy (such as that associated with the pursuit of the PFI approach in relation to the M6 Toll Road, and CTRL as an agent of change). This makes context awareness and context sensitivity especially significant if 'successful' projects are to be delivered. (As noted above, project success can ultimately only be judged against the background of sound knowledge of the context that prevailed during project planning, appraisal and delivery).

**Seizing opportunities**

As shown in Figure 5.14 below, almost 90% of interviewees concur that there are moments in time when it is opportune to 'seize the day' and take decisive action. This suggests the need for very astute context awareness made possible by either explicit or implicit scanning of context (e.g. in regard to the M6 Toll Road it would seem that MEL took advantage of favourable political and economic circumstances to wrest a 50+ year concession on favourable terms).

It is also interesting to note the view expressed by some interviewees that powerful MUTP 'players' may be able to manipulate (manage) certain contexts so as to achieve desired ends. This suggests that successful project planners and delivery agents are indeed very aware of both 'context' and its changing nature (perhaps in an instinctual rather than formal way).

**Figure 5.14: UK HLR interviewee responses to concept of moments in time in the planning and delivery of the case study when circumstances were ripe for key players to seize the occasion.**




**Need for institutional support**

For MUTPs to be 'successful' an appropriate institutional framework needs to be established which is able to address the multiplicity of expectations and stakeholder agendas that MUTPs inevitably encourage. In the context of the M6 Toll Road, much of the dealings with stakeholders was left to MEL. However, it may be argued that the relative simplicity of the project, and the fact that it had no attendant restructuring/regeneration roles, meant that robust institutional support was less necessary. Arguably, for CTRL, the fragmented nature of the institutional framework provided the opportunity for many stakeholder agendas to receive consideration by central government (including lobbyists for Stratford and Ebbsfleet) which was perhaps no bad thing in that this enabled the project to be moulded to meet a variety of important agglomeration objectives. On the other hand, it mitigated against the integrated approach advocated by the project's rhetoric in the role the CTRL should play in contributing toward developing sustainable communities in the Thames Gateway.

### 5.3.2 Potential generic responses to ORQ#2 and ORH#1

**ORQ#2 - How well has risk, uncertainty and complexity been treated in the planning, appraisal and delivery of such projects?**

**ORH#3 - The level of competence in decision-making and planning in today's fast-changing world is best assessed by the adequacy of the treatment of risk, uncertainty and complexity and sensitivity to context – all of which are important demands on Strategic Planning.**

#### 5.3.2.1 Major sources of risk, uncertainty and complexity

Interviewee observations suggested that most significant sources of RUC originate from sources *external* to MUTP planning and delivery systems, and reflect the variable nature of the contexts into which they are placed. By contrast, many interviewees considered that *internal* project planning and delivery processes are rather more stable and can be successfully 'controlled' or mitigated against in most cases. Notwithstanding this, the respondent feedback on the JLE experience suggested that what was considered a poorly structured project delivery team were allowed to continue to operate right until external contexts made 'mitigation' critical.

This experience and others imply that the inability of MUTP stakeholders to clearly discern, analyse and pro-actively respond to the full range, nature and scale of potential project 'impacts' is *extremely* problematical and is a very significant source of RUC. OMEGA research findings suggest that this is compounded by the frequent fluid nature of MUTP context(s) during the planning, appraisal, and delivery periods, and often aggravated by the silo perceptions of many parts of project team. There is on this basis, a strong case to be made that MUTP planning and delivery agents need to be acutely aware of the shortcomings associated with many of the current perceptions and planning and appraisal methods/tools (a matter discussed in more detail in relation to ORH#1 below).

#### 5.3.2.2 Need for scanning and constantly monitoring of risk, uncertainty, complexity and context

**RUC and the pace of change in the 21st Century as context for MUTP planning and delivery**

CTRL and JLE interviewee responses confirm that the 21st Century is characterised by a faster pace of change, resulting in significantly greater RUC in the planning and delivery of MUTPs. Key contextual forces/influences that are seen to lead to this include (both locally and globally): the increase in unstable economic circumstances; the growing use of new technologies; climate change and energy concerns; the extended time increasingly required to complete MUTPs.

This increased RUC in the 21st Century is seen to require the following responses:

- enhanced competencies (see discussion below);
- better understanding of the influences associated with prevailing and emerging future contexts;
- identifying and planning for the contextual changes that may be brought about by MUTPs, backed up with effective monitoring and decision making;
- planning and implementation strategies and programmes that are robust but also capable of ready adaptation in the face of changing needs/demands and contextual items. The use of scenario building and testing within a wide range of stakeholder groups is seen as a key means to seek to discern future contextual influences on project planning and delivery;
- greater stakeholder involvement in the planning and delivery process and identification of prevailing and emerging/changing stakeholder motives and agendas.

**Strategic components (and impacts) are difficult to identify and quantify**

The changing circumstances (contexts) that surround the MUTP planning and delivery process, and the impacts this can have on moulding project approach/content, are difficult to identify (much less quantify), and are thus a source of RUC. This may mitigate against having very clear and well established objectives at the outset if systems/processes do not allow such objectives to be modified in response to changing contextual elements and emerging agendas. This was seemingly true of all three UK case study projects in that their fundamental roles and functions changed over time during the course of the project planning period.

**Project interfaces and risk, uncertainty, complexity and context**

Given the prevalence of RUC in the context of MUTP contexts there is a clear need for extensive and comprehensive strategic forward planning based on information available to take account of all relevant key stakeholder programmes that may impact on planning and

delivery. Failure to do this may excessively and unnecessarily expose MUTP planning and delivery to RUC. These strategic plans must, however, be backed up with monitoring frameworks to allow pro-active actions to be taken where necessary.

MUTP planning and delivery agents need to be aware of the potential shortcomings of current systems/mechanisms to assemble all relevant information regarding project interfaces at the planning stage - when the many, various and changing stakeholder agendas are frequently difficult to discern. There are also potential vulnerabilities when project objectives are passed over from the planning stages to the detailed design and implementation stages as objectives can be misinterpreted or vulnerable to 'scope creep'. These developments suggests the need to train and employ personnel with distinct context awareness skills needed most significantly at the planning stage (in particular) and interface with the design/implementation to assemble and constantly refresh such information.

**Context scanning**

Regular and sustained monitoring of contextual matters that are seen as likely to represent a significant source of RUC, and thereby influence project planning and delivery, is critical. This requires extensive oversight of all inter-related and inter-disciplinary matters associated with contextual influences and project impacts. This key activity may frequently take place through well established (informal) relationships and networks as part of consensus building. However, unexpected occurrences will almost always arise and some of these can become especially critical. This is most prevalent at the project planning and appraisal stage but can also impact on project implementation (as was the case for the M6 Toll Road, when an outbreak of 'foot and mouth disease' impacted on the project delivery programme).

### 5.3.2.3 Risk, uncertainty and complexity and the project lifecycle

**When should projects be frozen (locked in)?**

Careful thought needs to be given as to when a MUTP can be effectively 'frozen' as contextual change(s) thereafter, following locking-into its implementation phase, may be very difficult to accommodate, thus exacerbating project risks. This is especially pertinent in that many MUTPs evolve over time and it may be argued that such projects should *only* be frozen after (where possible) all contextual eventualities have been taken into account - this may mean that matters such as cost and programme control remain problematical for a considerable period of time. Thus, the prudent project planning and delivery agency will always ensure that project design/scope is capable of subsequent adjustment as far as possible - in terms of scalability, connectability and functionality.

In connection with this, it would seem that thought needs to be given to the amount of time (and other resources) that needs to be invested during the planning and appraisal stages as OMEGA research findings suggest an artificially compressed period may result in premature (and potentially high impact) decisions *without* fully exploring the benefits of alternative options with key stakeholders.

Once MUTPs have entered the implementation/construction stage they: often have to be modified to cope with unexpected conditions; and are notoriously difficult (costly) to change in terms of their fundamental design specification - this has implications for the use of innovative technology.

**Robustness and adaptability**

MUTPs that are subject to changing contextual influences may well need to be delivered through a flexible, evolving and responsive approach which is capable of addressing/accommodating such change. This appears not to have been the case for the M6 Toll Road once it entered the PFI stage - i.e. it is suggested that government had no back-up plan in the event that the PFI failed. For CTRL and JLE, it is doubtful whether there were overarching strategies that were robust and adaptable – rather, it would seem that new contextual items and ideas simply occurred in an ad hoc manner which ultimately served to mould the project.

As noted above, it is believed that there are moments in time that present ideal opportunities to take decisive action in pursuit of specific ideas, agendas and decisions. This suggests that planning and implementation strategies need to be sufficiently robust and adaptable to be able to respond rapidly to the opportunities afforded by such moments in time.

**Need for 'certainty', accuracy and realism**

'Certainty', 'realism' and the ability to enable the proper integration of actions and activities by all concerned key parties are seen as important aspects of project planning and implementation plans and programmes. *Certainty* is seen as particularly critical in terms of commitments to the delivery of key decisions, approvals and infrastructure components (by a specified time) on which parallel investment and funding decisions are to be based. The availability of high quality project information potentially assists in the ability to identify/anticipate moments in time in project planning and implementation when circumstances are ripe for key decisions to be made. Such opportunities are not always easy to perceive and require constant scanning of existing and emergent contextual elements.

Poor cross-functional sharing of appropriate information/data and ideas (silos) is seen as increasing RUC - this was identified both within and between organisations and networks in CTRL planning and delivery and certain stages during the development of JLE.

The collection and analysis of excessive amounts of data concerning forecast project performance can often obscure rather than enlighten. Such appraisal data is seen as no substitute for experience and expertise, especially in terms of risk mitigation and tactical awareness in regard to the handling of political influence (which is all pervasive in MUTP planning and delivery).

### 5.3.2.4 Political will and risk, uncertainty and complexity

Insufficient political will can often become a significant source of risk - again, primarily resulting from expediency/pragmatism brought about by short-term political horizons. For example, for the M6 Toll Road, key political influences included the decision to pursue the project as a PFI - which resulted in a rather opaque relationship between government and the concessionaire and the downplaying of project objectives relating to the relief of congestion on the M6 (the 'originally' proposed function of the project.

### 5.3.2.5 Skills, competencies and relationships

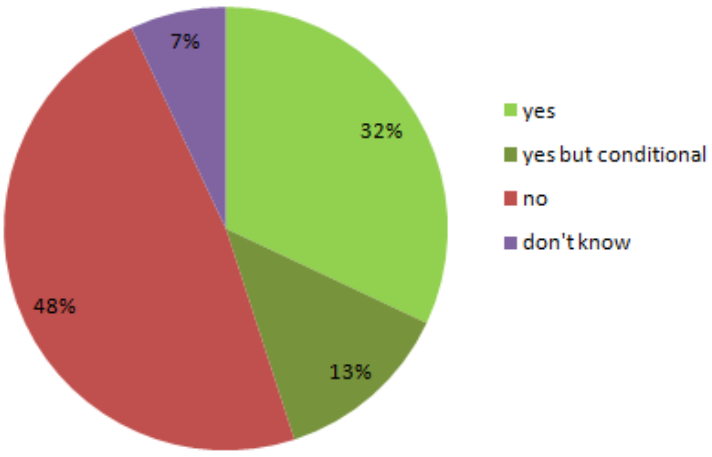
Interviewees suggested that the quality and appropriate skill-sets plus professional competencies in MUTP development, plus the nature and quality of the stakeholder relationships represent a *significant* source of, and means to mitigate, RUC. The following examples were highlighted in this connection:

- there is a need for managers and decision-makers who are able to see projects in their entirety (holistically) over the entire lifecycle;
- personality and personal relationships are vitally important at all levels, within and between organisations. Indeed, MUTP planning and delivery is fundamentally impacted by stakeholder personalities and personal relationships which need to be detected, fully comprehended and monitored over time;
- strong leadership can reduce uncertainty - the private sector has a requirement for strong leadership and the certainty that accompanies this;
- in order to mitigate risk, both public and private sectors need to have full understanding, based on the proper availability of information, of each party's constraints;
- co-operation and relationship building are seen as more fruitful than adversarial relationships. Networking and the establishment of a 'trust environment' are seen as vital by most stakeholders, particularly in regard to overcoming 'silo thinking';
- it is important to maintain consistency of personnel throughout the planning and delivery process - so as to maintain mutual understanding of negotiation positions;
- stakeholder competencies should match key MUTP roles – some interviewees suggested that even when visions and objectives are clearly articulated, project teams may lack the skills to satisfy them in a resource efficient manner: "So they had a huge, what I call, project implementation knowledge gap."

#### 5.3.2.6 'Time to breathe', and risk

45% of respondents agreed with the concept of a project needing 'time to breath' as shown in Figure 5.15 below. Giving projects 'time to breathe' is seen as a positive influence in planning and delivery (and means to mitigate risk) for those that are complex and (particularly) involve much broader objectives than the simple delivery of a piece of transport infrastructure – here, 'time to breathe' was seen in the context of CTRL as the process by which the project evolved over time in response to changing contexts. However, even for such complex projects, some see a time to breathe as rather problematical by virtue of prolonging planning, delivery and uncertainty.

**Figure 5.15: UK HLR interviewee responses to the premise that projects benefit from time to breathe**




By contrast, for projects that are considered to be relatively straightforward, the availability of a 'time to breathe' may not be seen as a beneficial means to mitigate risk. In the context of a relatively straightforward PFI project such as the M6 Toll Road a 'time to breathe' may be seen as potentially dangerous - most interviewees consider that project planning and implementation is already too time consuming, especially when there is a self-evident

problem to be addressed (as in the case of the M6 Toll Road). Prolonged planning and implementation processes are also considered as vulnerable to greater uncertainty due to the likelihood of contextual change.

#### 5.3.2.7 Best practice & institutional learning as a means to mitigate risk, uncertainty and complexity

Drawing on experience from other projects was seen by interviewees as a key means to mitigate risk. In the case of the CTRL learning from the high speed rail experiences in France was seen as especially beneficial. The frequent reference to 'best practice' in reported institutional learning efforts, however, raised concerns for the OMEGA Team (as earlier reported) given the emerging importance of the power of context and in this regard the potential for adopting an international template approach to solving MUTP challenges. OMEGA research suggests that 'best practice' infrequently contextually insensitive and, thus is an aspect that needs to be applied with great care. It can perhaps be applied with greater 'safety' once projects have been effectively locked-into for implementation– suggesting that this later stage of the MUTP development process is seen as less subject to changing contextual influences.

#### 5.3.2.8 Community engagement as a means to mitigate RUC

Full community engagement *from the outset* was seen by the majority of the interviewees as a means to mitigate downstream risks (and related uncertainties and complexities) associated with MUTP stakeholder relations. Indeed, past experience with Swedish Railway projects have suggested effective consultation with relevant stakeholders can enable the successful adjustment/revision of project objectives, the better management of project expectations and also help to speed-up the project delivery process. Such engagement, however, is less effective if undertaken once MUTP objectives have been firmed-up - and can actually increase levels of confrontation. There is also general consensus regarding the need to work more closely/build trust with stakeholders to keep them fully informed throughout the project - so as to identify/anticipate potential issues going forward that could otherwise jeopardize the planning and delivery process.

Determining stakeholder motives and legitimacy in community engagement is often extremely difficult and may require specifically targeted outreach exercises. That said, successful MUTP planning and delivery agents are likely to be those who are characterised by a strong intuitive sense of the nature and agendas of stakeholder groups and networks - and the likelihood that these will change over time.

### 5.3.3 Potential generic responses to ORQ#3

**ORQ#3 - How important is context in making judgements regarding Overall Research Questions 1 and 2?**

#### 5.3.3.1 Discerning and understanding context is critical

Changing contextual elements result in the evolving nature of MUTPs (as was especially evident in the case of the CTRL and JLE projects) in that the planning, appraisal and delivery processes frequently respond to the moulding influence of changing contextual elements over time. Thus, context awareness on the part of MUTP planning and delivery bodies is especially significant if 'success' is to be achieved. Moreover, as noted elsewhere: 'project success' can *only* realistically be judged in light of sound knowledge of the context that prevailed at the time the project was conceived, planned, appraised and implemented; successful projects are likely to be characterised by planning and delivery agents that

possess acute awareness of the importance of context *throughout* the project lifecycle; projects can mould themselves to contexts either through pro-active or reactive action, and regular project context monitoring is required to ensure the project is fully and constantly 'context appropriate'.

Interviewees suggest there are different professional perspectives on the influence/importance of context. Interviewee responses suggested MUTP planners and politicians are more contextually aware of the forces that impact MUTP developments than project managers who were seen to be more driven by day-to-day critical aspects of project delivery and implementation according rigidly interpreted programmes and budgets.

#### 5.3.3.2 The need for context scanning

Procedures need to be put in place to ensure that contextual change is constantly monitored, enabling MUTP strategies, plans and programmes to be adjusted in light of early warnings of the need for corrective action resulting from such monitoring. For all UK case studies there was little evidence to suggest that there were *explicit* mechanisms and procedures in place for identifying and monitoring contextual forces impacting MUTPs. However, the many references to the importance of stakeholder relationships and consensus building on the part of key MUTP decision-makers suggests a considerable degree of 'informal' context awareness and scanning taking place by different parties. Moreover, since both CTRL and JLE clearly responded to manifold contextual changes as it evolved over time, context awareness and resultant action clearly occurred – although in a somewhat ad hoc manner. It was noted that as contextual changes occurred and it became self-evident that the project would then have to also change in some way to address the new context that emerged – responses were made. This is especially true of the pivotal decisions that shaped these projects if one examines the story-line analysis and history of pivotal decisions.

#### 5.3.3.3 Context and the project lifecycle

Although mammoth tasks, the 'project delivery phase' of MUTPs is seen as less contextually sensitive than other phases, essentially, as already explained, because of the project has been locked-into a finally decided plan, programme, design and budget that has to be kept to in order for construction to take place. This 'freezing' of the project, so to speak, explains, at least in part, why project managers are believed to be less sensitive to external contextual forces that other MUTP professionals.

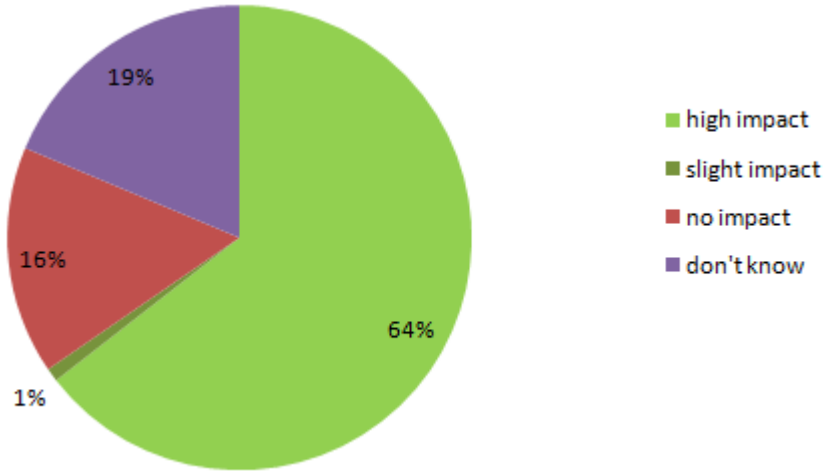
Given that many/most MUTPs are necessarily 'evolutionary' in nature, it may be argued that such projects should *only* be frozen after all contextual eventualities have been taken into account which may mean that matters such as cost and programme control remain problematical for a considerable period of time. What is also clear is that contextual influences *never* remain static. This suggests that experience and sound judgement based on extensive stakeholder consultation may be the only realistic means of determining when to freeze a project for the purposes of implementation.

#### 5.3.3.4 Mega events as contextual items - CTRL & JLE

64% of interviewees felt Mega Events could have a high impact on the project case study as shown in Figure 5.16 below. As noted above, mega events may have both a positive and negative impact on MUTP planning and delivery. For example, the London Olympics is seen as an important contextual influence on CTRL but is considered to be both beneficial and problematic in terms of RUC: fixed deadlines associated with mega events, without doubt

'focus the mind' and help reduce risk, however the downside is seen in terms of the diversion of attention/oversight and resources away from other important projects, thus increasing risk.

**Figure 5.16: UK HLR interviewee responses to question - "What was the impact of mega events on the case study project?"**




### 5.3.4 Potential generic responses to ORH#1

**ORH#1 - Traditional criteria relating to cost overruns, completion dates, generation of travel time savings for users and rates of returns to investors are inadequate measures of success in the 21st Century as sustainable development concerns become increasingly critical both globally and locally.**

#### 5.3.4.1 Project appraisal processes and criteria

Sustainable development visions were largely deemed by interviewees as failing to present a suitable framework for judging the success or otherwise of MUTPs. As earlier conveyed, this is especially on account of the perceived difficulties in defining 'sustainability' in an operationally assessable manner. Moreover, it was considered by some that the UK has undeveloped methodologies for valuing externalities associated with major infrastructure projects - including factors such as regeneration, agglomeration effects, innovation impacts, enhancing skills/knowledge etc..

For all three UK case studies it was acknowledged by a majority of interviewees that the traditional 'iron triangle' criteria of project management associated with (especially) project delivery time, cost, value for money and quality remain of critical importance - particularly when such criteria are embodied in a project's fundamental objectives. However, the broader criteria of MUTP developments – including agent of change aims of as the fostering economic growth, contributing to sustainable development, promoting environmental improvements and contributing to social equity in appraising MUTP achievements have overarching importance even though many aspects of these broader objectives are rather difficult to operationalise and 'measure' successfully, especially within the confines of 'traditional' appraisal methods. These efforts it was noted are made particularly difficult where the impacts of MUTPs fall outside the sphere of the responsibility of agencies (primarily government) which are perceived to be outside the project delivery process.

### 5.3.4.2 Appraisal and forecasting tools/techniques/models

Interviewee responses suggested that the shortcomings of current MUTP project appraisal and forecasting tools, techniques and models (including the manner in which they are utilised) are frequently *not* fully understood by those that are expected to most often make use of them (namely, the politicians and policy makers). It is furthermore believed that there is a reluctance amongst specialists to acknowledge such shortcomings exist on any significant scale, except insofar as these may be improved upon by perhaps employing more 'sophisticated' techniques/enhancements.

In parallel to the above, and in light of the interviewee responses, the OMEGA Team conclude that there is a need to 'place' many of the traditional appraisal techniques employed by MUTPs (such as CBA) into a much broader decision-making and appraisal framework, and for forecasting exercises to engage more actively in contextual scenario analysis within this same framework. This can be achieved by employing a policy-led multi-criteria framework of the kind recommended by the OMEGA Centre to the UK Institution of Civil Engineers and Actuarial Profession for inclusion in their revised RAMP Handbook for the risk assessment of major infrastructure projects (see OMEGA Centre, 2010). A framework of this kind- enables the findings of the more traditional appraisal and forecasting techniques to be confined to the areas they are most suited to rather than have them over-extended into arenas for which they were not originally designed/intended. This is envisaged to allow the trade-off of costs and benefits of MUTPs across a broader set of MUTP objectives under different scenarios and policies for different stages of the project cycle. In this manner the strengths and weaknesses of different alternatives and their outcomes may be appraised and weighted in accordance with different stakeholder perspectives in a much more transparent manner, explaining better how/when/why political influences can/will often override outputs from the use of traditional appraisal tools/techniques and forecasting models. An approach of this kind can also contribute toward the building of more suitable sustainable development frameworks for judging the success or otherwise of MUTPs which to date are frequently perceived to pose difficulties in defining 'sustainability' in an operationally assessable manner.

## 5.3.5 Potential Generic Responses to ORH#2

**ORH#2 - The new emerging international and local agenda related to vision(s) of sustainable development is multi-dimensional and goes beyond notions of environmental sustainability, as critical as this may be, in that it also concerns inter-related concepts of economic sustainability, social sustainability and institutional sustainability.**

### 5.3.5.1 The role of sustainability in MUTP planning and delivery

Commenting on the role of sustainability in the planning, appraisal and delivery of MUTPs interviewees observed that too often specialist professional silos and currently entrenched project management thinking posed major barriers to the introduction of a more holistic view of SDVs as a framework for MUTP developments. They also noted that he multi-dimensional nature of 'sustainability' demands an holistic view of the complexities associated with MUTPs and the developments/initiatives with which they are associated and that the capacities to deal with these – both in the public and private sectors were in need of further development. It was also observed, in the case of the CTRL and JLE that 'sustainability' aims were more likely to be seen in terms of their delivery of related regeneration benefits (especially at their major transport hubs) than in relation to the line-haul rail/metro services themselves.

Given that interviewees conceded the need for a broader range of criteria that emphasise 'sustainability 'it is it is suggested that SDV frameworks for MUTPs need to be:

- clear, consistent and applicable to all key parties in MUTP planning and delivery (making clear all respective roles and responsibilities);
- capable of being operationalised by MUTP planning and delivery agents so as to influence decision-making more directly; and
- supported by a sustainable institutional framework given that it is questionable whether SDVs can expect to be delivered in the absence of institutions with a well developed 'institutional memory' in light of the fact that they require long-term evaluation cycles.

Sustainability appraisals furthermore, it is advocated, should become an integral key part of the initial project conception and traced through subsequent planning and appraisal processes. This should be done to determine the need and justification for the project, and; to determine alignments, associated developments and technical specifications etc. that will enhance the sustainability profile of the MUTP and the areas on which it impacts. Most importantly, unlike CTRL, such appraisals should not simply be used as a means to appraise the performance of different pre-determined options and should, by virtue of their size, cost and potential impact, be the subject of scrutiny by parliament.

#### 5.3.5.2 MUTPs and sustainable development/regeneration

Unless carefully planned as part of an overall framework as advocated above, where SDVs become part of the central focus of a project, MUTPs may simply facilitate ever more travel (both long distance and commuting) which is contrary to the concept of sustainability. the essentially low density nature of much of the development at Ebbsfleet, for example, adds further doubt about the sustainability credentials of CTRL, whereas the JLE did much to consolidate urban development in East London. There was very little evidence forthcoming to suggest that the M6 Toll Road did much at all to contribute to sustainability aims. What was noted is that the ability of MUTPs *alone* (especially rail projects) to catalyse sustainable development and regeneration appears unproven. What the findings of the interviewee responses instead suggest is that MUTPs typically require parallel public sector intervention in the form of policy enablement measures and regulations that support MUTP investment in order to achieve the full suite of potential sustainability benefits, and that these need to be more carefully analysed in the planning and appraisal stages

### 5.4 Potential context-specific lessons

### 5.4.1 Introduction

This part of the Final Report presents potential lessons of a context-specific nature that are seen as capable of enhancing the performance of existing *and* new MUTPs, taking particular account of the outcomes of the '4 Tests' concerning project objectives, sustainable development challenges and the treatment of risk, uncertainty and complexity (RUC), as well as the power of context in decision-making.

In examining these lessons the OMEGA Team contend that it is important to acknowledge perceived key typological contexts of projects which are seen to be associated with the lessons put forward below - based on previously undertaken analyses of individual case studies. These key contexts are believed to comprise:

- country/regional contexts;
- financing contexts;
- project typology contexts, disaggregated by:
    - project typology #1: infrastructure type (i.e., road/rail - subterranean, at-grade and/or elevated);

    - project typology #2: complex or straightforward projects
- stakeholder type contexts,
- economic contexts;
- institutional contexts;
- legal and legislative contexts; and
- project lifecycle phase context.

Of these contextual typologies, the following are believed to be *common* to all three UK case studies - thus, individual lessons are *not* 'tagged' according to these typologies:

- **Country context**: clearly, all are UK-based;
- **Regional context**: While there are distinct differences in the locational characteristics of the case studies, these are *not* (at this stage) considered to be sufficiently influential as to require separate lessons:
    - both CTRL and JLE are *essentially* London-centric projects, with the former also having a significant broader role in the economy and movement patterns of South-east England and providing strategic links to Europe. As reflected in the individual case study reports, both of these projects have much to do with supporting London's role as *the* pre-eminent global financial centre; and
    - the M6 Toll Road is West Midlands-based, but its implementation was primarily driven by the need to improve links between the North-west and South-east rather than any perceived local movement patterns. In this sense, its regional context is perhaps less significant as a grounding for the presentation of lessons.
- **Project typology context #1: infrastructure type**: Again, there is insufficient evidence to suggest here that individual lessons should be applied to the different infrastructure types associated with all the three UK case studies:
    - CTRL - high speed heavy rail link;
    - JLE - metro/underground section of the London Underground; and
    - M6 Toll Road - tolled part of the national motorway system.
- **Project typology context #2: complex v straightforward**: Here the typology (from straightforward to complex) may be seen to be a continuum in so far as a project can commence as a straightforward MUTP and later mutate over time into a complex MUTP, as in the case of the CTRL and JLE. For the purposes of this exercise, however:
    - The CTRL project is considered a *complex* MUTP with very significant agglomeration objectives associated with territorial restructuring, economic growth and urban regeneration in the Thames Gateway;
    - The JLE project is similarly considered a *complex* MUTP with very significant agglomeration objectives associated with economic growth and regeneration in East London, particularly East London;
    - M6 Toll Road project is considered a *relatively straightforward* tolled motorway project with no agglomeration objectives.
- **Financing context**: All three projects were undertaken under the umbrella of the PPP/PFI arrangements, albeit with varying degrees of public sector financial assistance. Such assistance was:
    - minimal in the case of the M6 Toll Road,
    - very extensive in the case of CTRL (requiring the provision of both government guarantees and the 'donation' of former railway property to the project), and
    - a significant factor in the finances of the JLE (although ultimately the NPV private sector contribution was approximately 5% of the final cost)

  Notwithstanding the above, it is suggested that the lessons outlined below may well *not* be sufficiently 'sensitive' to the different amounts of public sector financial support to justify further sub-division - except where noted.

In contrast to the above, the following stakeholder typologies *are* considered to be sensitive to the lessons put forward below. Each category of typology here is consequently broken down into sub-categories for the purposes of identifying the degree to which each lesson is likely to resonate with that category (see 'dentifiers' listed in the tables below). It should also be readily appreciated that lessons *may* resonate across multiple individual typologies. To assist the analysis of the resonance of lessons, codes RC-RS (for project typology #2) have been assigned to differentiate between the relatively complex, and relatively straightforward MUTPs, respectively.

- **Stakeholder typology context**: Lessons are presented below according to the perceived influence that each MUTP stakeholder type is likely to exert at each stage in the project lifecycle. These have been assembled against the background of (particularly) outputs from the case study project profile work, the Pre-hypothesis and Hypothesis Research plus the Hypothesis-led Research analyses (for the CTRL, JLE and M6 Toll Road). Since there are clearly many different types of stakeholder groups involved at each stage in the project lifecycle (and that these groups form both loose and fluid alliances/networks at different times) it is simply *not* possible to provide bespoke lessons for each individual 'group' or network of groups. The OMEGA Team has thus derived a simplified stakeholder matrix (see Table 5.3) which is somewhat 'coarse-grained' but is hopefully robust enough to be applicable to multiple project typologies/contexts. In so doing, to assist the analysis of the resonance of lessons, codes (S1-S9) have been assigned to each stakeholder type.

- **Project lifecycle phase context:** as noted above, the nature and applicability of project lessons varies according to the stage in the project lifecycle to which they refer. For the purposes of this summary , based on the definitions used in respect of the VREF Smaller Project, the project lifecycle is broken down as shown in Table # … To assist the analysis of the resonance of lessons, codes (LP1-LP6) have been assigned to each project cycle lifecycle phase.
    - **Phase 1: Project Conception** – This is the period/point when the apparent need or desire for the MUTP is first considered by the sponsoring agent. This may be in response to a particular problem (e.g. traffic congestion) or where a project is considered to be a potentially significant instrument of public policy (e.g. as a catalyst for achieving spatial planning aims or economic restructuring). At this stage the MUTP remains largely as a 'concept' and lacks fine detail about the project's scope.

**Table 5.3: Resonance of lesson identifiers - Stakeholder type**

<table>
<tr><th colspan="9">Stakeholder Type</th></tr>
<tr><td colspan="4">Public Sector</td><td colspan="2">Private Sector</td><td colspan="2">Community Members, Community Groups & Lobby Groups</td><td>Other</td></tr>
<tr><td colspan="2">Politician</td><td colspan="2">Government Administration</td><td>PFI/PPP Projects</td><td>PFI/PPP & Public Sector Projects</td><td rowspan="2">Local/ Impacted Community</td><td rowspan="2">Lobby Group/ Action Group</td><td rowspan="2"></td></tr>
<tr><td>Central</td><td>Local/ Regional</td><td>Central</td><td>Local/ Regional</td><td>PFI/PPP Entity or Consortium</td><td>Consultant/ Advisor</td></tr>
<tr><td>S1</td><td>S2</td><td>S3</td><td>S4</td><td>S5</td><td>S6</td><td>S7</td><td>S8</td><td>S9</td></tr>
</table>

- **Phase 2: Project Planning** – This is the period when action is taken to determine the scope, nature and cost of the MUTP (including its key specifications, routing options, probable approach to funding and so on).
- **Phase 3: Project Appraisal** – This is the period in which more detailed financial viability , feasibility and impact assessments are undertaken and recommendations are made and agreed about how the MUTP is to be implemented. This phase may include sustainability impact studies and various forms of public consultation or participation.
- **Phase 4: Project Implementation** – This is the period when the project deliverers (e.g. consortium/joint venture, public sector works organisations etc.) are appointed, any necessary land acquisition takes place, construction work is undertaken, mitigation measures are put in place and the operability of the MUTP is tested and commissioned.

**Table 5.4: Resonance of lesson identifiers - Project lifecycle phase**

| **Project Lifecycle Phase** | | | | | |
|---|---|---|---|---|---|
| Project Conception | Project Planning | Project Appraisal | Project Implementation | Project Operation | Project Evaluation and Monitoring |
| **LP1** | **LP2** | **LP3** | **LP4** | **LP5** | **LP6** |

- **Phase 5: Project Operation** – This is when the project is brought into full use and operation.
- **Phase 6: Project Evaluation and Monitoring** – This is when post-project assessments are made either as 'one-off' exercises and/or as part of on-going monitoring of performance. This may include value-for-money assessments, audits and due diligence, ongoing impact assessments, ongoing monitoring of traffic flows etc.

### 5.4.2 Lessons concerning project objectives

#### 5.4.2.1 The nature and clarity of project objectives

Published MUTP objectives *do not* always clearly define the precise composition and expectations of such projects. Project appraisal and evaluation can as a result become difficult even problematic. Published project objectives are furthermore often insufficiently developed at the outset in terms of reflecting the degree of interaction/impact that MUTPs are anticipated/expected to have with the areas they traverse and impact upon. This would seem to be especially important for those projects that are expected to function as key ‘agents of change’ with the result that the development of agglomeration objectives should be accompanied by clear policy statements indicating the scope and nature of the desired 'change impacts'. The box below provides a commentary of how this lesson resonates with the three UK case studies.

**Supporting evidence**

- **both JLE and CTRL** represent transit-oriented programme bundles of projects. Published objectives include references to 'regeneration and economic growth and

restructuring.' Anticipated benefits are cited at different stages, reflecting in a way their expected additional function as key 'agents of change';
- **the M6 Toll Road** represents a relatively 'simple' piece of new motorway infrastructure with *no* associated development proposals. The resultant published project objectives were accordingly quite clear. Nevertheless, a number of stakeholders remained unclear about the project's status as a 'free flow alternative to the M6' for which tolls could be set by the concessionaire; and
- **in the case of JLE** the objectives of the original Canary Wharf-South London link was perceived as separate to the London Underground with no wider network distribution benefits. London Underground's insistence to make the link part of the JLE enforced upon it a wider set of functions beyond Canary Wharf, and in this regard had new multiple 'agent of change' functions.

**Typological Resonance:** RC, RS, S1-S8, LP1-LP3, LP6

For reasons of equity and transparency in MUTP planning and appraisal, it is most helpful to clearly identify, at the outset, MUTP objectives that are considered as:

- core/essential, and represent the fundamental reason why the project is being implemented, and; less certain but nevertheless desirable project outcomes differentiating between the project's ability to deliver a transport service primarily determined by market imperatives or as part of wider public welfare service' thereby requiring some kind of public support. .

The box below provides a commentary of resonance with the three UK case studies.

**Supporting evidence**

- **for CTRL,** the less certain but nevertheless 'emergent' desirable project objectives associated with regeneration, economic growth and restructuring ultimately proved to represent powerful justifications for public sector financial support (despite early Treasury reluctance to place a value on such matters as agglomeration benefits) when the project was in financial difficulty;
- **for the M6 Toll Road** project objectives were straightforward from the outset and emphasised the core/essential reasons why the project was to be constructed; and
- **for the JLE,** as in the case of the CTRL, the 'emergent' objectives became more important than those originally; the project however became afflicted by project management implementation issues related to new signaling technology, architecture and safety standards.

**Typological Resonance:** RC, RS, S1-S8, LP1-LP3, LP6

MUTP objectives relating to time/cost/quality ('iron triangle' project management core concerns) are likely to remain important *but* should not represent the sole yardsticks for the assessment of project 'success'. Expectations in this regard need to be both clear and consistent so as to facilitate transparent monitoring and evaluation. They furthermore should:

- enable a more consistent approach to project appraisal,
- provide for establishment of measurements and systems/processes (where applicable) that enable clear and transparent appraisal and post-project evaluation,
- be capable of being operationalised in such a way as to be meaningful to all stakeholders - objectives associated with 'regeneration' and 'sustainability' are seen as *incapable* of implementation in a direct and practical sense, and
- acknowledge that the benefits/costs/impacts associated with MUTPs are: often very difficult to discern at the outset; often only realised in the long-term; often unexpected.

The box below provides a commentary of how this lesson resonates with the three UK case studies.

**Supporting evidence**

- **for the JLE** the interviewees were anxious for appraisal techniques which allow more long term benefits to be included in appraisal, and for project beneficiaries to contribute to the cost of MUTPs in a more formal way;
- **for M6 Toll Road**, interviewees were not overly concerned about taking a longer term and broader perspective in light of the perceived 'simplicity' of the project;
- **for M6 Toll Road and JLE,** time/cost/quality project management objectives were core concerns. It has, however, proved extremely difficult to determine their precise nature at the time the project was given the go-ahead - ostensibly for reasons of commercial confidentiality; and
- **for the JLE**, the time/cost objectives at the time it was given the green light included various requirements imposed by legislation, regulation or fitness for purpose. However quality objectives were *not* well defined and developed considerably over the project implementation period.

**Typological Resonance**: RC, RS, S1-S8, LP1-LP3, LP6

It is especially important to define clear objectives for *private sector-funded* MUTPs so as to ensure that the desired 'product' (and outcomes) is understood and ultimately delivered. This may require the establishment of parallel (and wherever possible joint) public and private sector project objectives. In regard to risk-share, it is likely to be essential to ensure that an audit trail is established which is capable of tracking transactions that might otherwise become opaque as a result of so-called 'commercial sensitivity'. The box below provides a commentary of how this lesson resonates with the three UK case studies.

**Supporting evidence**

- **for all three case studies,** a number of interviewees pointed out that the private sector will establish its own set of objectives for PFI/PPP projects and that these do *not* necessarily reflect the broader aspirations for the project.;
- **for M6 Toll Road** project objectives appear to have been favourable to the concessionaire - enabling the positioning of the project as a profit-making making venture but at a 'cost' to the utility of the project in terms of discrimination against HGVs;
- **for the CTRL,** project objectives for the (partially) privately funded CTRL appear to have been clear. Nevertheless, the project had to be rescued by government when it found itself in financial difficulty;
- **for the JLE,** project objectives were consistent with those of the private sector re: the need to attract a private sector contribution. The mechanics/contracts surrounding this risk-share, however were *not* widely publicized and included penalty clauses to compensate the private sector for delays/reduced train capacity which was called on by the private sector; and
- **in regard to CTRL,** there remains a lack of clarity regarding the full cost of the project in relation to the value of Railway Lands at King's Cross *and* Stratford and post-1997/98 government guarantees.

**Typological Resonance**: RC, RS, S1-S6, LP1-LP4, LP6

MUTP objectives are *not* always stated sufficiently clearly to enable them to be operationalised in a way that is meaningful to all stakeholders. Project objectives associated with both 'regeneration' and 'sustainability' is frequently considered meaningless as a result of being incapable of implementation/operationalisation in a direct and practical sense. The box below provides a commentary of how this lesson resonates with the three UK case studies.

**Supporting evidence**

- **for the CTRL,** interviewees expressed concern that project objectives associated with both 'regeneration' and 'sustainability' were frequently meaningless as a result of being incapable of implementation in a practical sense.
- **for JLE,** once the route was finalised, the uncertainty in the timing of the delivery of the project was more detrimental for regeneration prospects than the lack of clarity of intentions. However, interviewees suggested some project objectives may have benefited from a multi-stakeholder 'stress test' in relation to technical feasibility prior to implementation.
- **for the M6 Toll Road** project objectives were essentially confined to time/cost/quality considerations.

**Typological Resonance**: RC, S1-S8, LP1-3, LP6

MUTPs that have wider 'agent of change' objectives – and which have aspirations of enhancing public welfare goals rather than providing transport services that pay their way from fare-box revenues supported by real estate developments are likely to require a commitment of significant public sector resources that require debate and scrutiny at the highest political level and at the earliest of stages. This should be particularly taken into account in setting MUTP programme objectives. The box below provides a commentary of how this lesson resonates with the three UK case studies.

**Supporting evidence**

- **both CTRL and JLE** attracted broader regeneration, economic growth and restructuring objectives as a consequence of political intervention. Arguably, this was of significant in terms of the leveraging of benefits from these projects but may impact on aspirations for rapid delivery;
- **in the case of JLE,** the agglomeration/urban regeneration aims in Canary Wharf were presented by the private sector as one of the principle strengths of the project, however, the project's potential for wider impacts was significantly strengthened by public sector planning intervention which, among other things, led to the route extension to Stratford;
- **for the JLE** the detailed design and early delivery of the JLE was impacted by project management confusion over the line's role being seen more as a transport services whose efficiency was merely determined by patronage figures and fare-box returns; and
- **for M6 Toll Road**, by contrast, project objectives here could not have been more clear in terms of its intention to charge for the privilege of utilising a much less congested route. to have been less exposed to such debate.

Typological Resonance: RC, S1, S3, LP1-LP3

### 5.4.2.2 Project achievements relative to project objectives

To make a sound judgement about a MUTP's success/failure it is vitally important to have a clear sense of the overriding context that prevailed at the time it was conceived, planned and implemented since this will have impacted on:

- the fundamental raison d'etre of the project;
- any revisions that were made to project objectives during the planning, appraisal and delivery period - often to reflect 'bolt-on' needs/desires associated with such matters as

territorial restructuring, regeneration - frequently as a reflection of political imperatives or visions.

The box below provides a commentary of how this lesson resonates with the three UK case studies.

| **Supporting evidence** |
|---|
| • **for both CTRL and JLE**, project objectives evolved over a period of time as a result of the interplay between many different stakeholder agendas which encompassed much broader expectations of these projects than was originally envisaged which set the scene(s) for their development;<br>• **for M6 Toll Road,** a 'core' project objective also changed fundamentally (but subtly) over time as a result of it becoming a PFI-led 'toll road' rather than a public sector 'relief road' – was *not* clear to all affected stakeholders, however, the fact that this happened was an outcome of the political mantra of the time by central government that spawned a context in which PPPs/PFIs were positively welcomed; and<br>• there are two related points to make: the UK is seen as having rather immature methodologies for appraising the agglomeration and other impacts/benefits associated with MUTPs, and; this is hardly surprising given that such impacts/benefits are *not* only difficult to discern and appraise with accuracy but may only arise well after the project has been completed - as in the case of CTRL and JLE. |
| **Typological Resonance**: RC, RS, S1-S8, LP6 |

### 5.4.2.3 Stakeholder appreciation/perception of objectives

Despite the publication of 'official' project objectives by government/sponsors of MUTPs, different stakeholders/stakeholder groups frequently continue to have fundamentally *different* expectations of projects during the planning and appraisal processes. The box below provides a commentary of how this lesson resonates with the three UK case studies.

| **Supporting evidence** |
|---|
| • **for CTRL**, whilst the core objectives were ostensibly firmed-up by 1990, there was continued lobbying for refinements in relation to rail service patterns, the establishment of stations and the form/content of associated development/regeneration initiatives on which the project was financially dependent<br>• **similarly in the case of JLE,** work on this project was frozen between 1991-1993 due to defaulting of payment by the private sector. The delays relating to the choice of 'overcomplicated' or 'unnecessary' engineering/architectural/technical details provided for continuing frustration and uncertainty for the private sector; and<br>• **for M6 Toll Road**, even after the second Public Inquiry, many project stakeholders continued to believe that its principal function was to relieve congestion on the parallel motorway network. |
| **Typological Resonance**: RC, RS, S1-S8, LP1-LP3, LP5, LP6 |

MUTP objectives are often *not* made sufficiently clear at the outset to all concerned key stakeholders. This failing can prolong debate and confusion about the project's key functions, leading to delays and 'scope creep' when the objectives are operationalized. Equally, any subsequent modifications to project objectives also need to be disseminated in an effective manner to *all* key stakeholders so as to enable proper

monitoring and provide transparency. The box below provides a commentary of how this lesson resonates with the three UK case studies.

**Supporting evidence**

- **for both CTRL and JLE,** interviewees indicated that 'emergent' objectives, especially agglomeration objectives, were *not* made clear to key public and private stakeholders - including local authorities and developers.
- **for JLE**, respondents indicated that the overall project objectives were disseminated clearly, and monitoring did indeed take place (which, incidentally, highlighted some key subsequent project delays/cost over-runs). There were, however, negative comments made about the less than adequate transparency with regard to the detailed negotiations for the private sector contribution to the project and the events leading to appointment of Bechtel to take over JLE project management in 1998.

**Typological Resonance:** RC, RS, S1-S8, LP1-LP3

Achieving widespread agreement on MUTP objectives *can* prove extremely difficult to achieve, especially when dealing with a fragmented institutional framework and manifold (often conflicting) stakeholder agendas. This suggests two things need for the involvement of key stakeholders in the setting of project objectives (rather than being consulted 'after the fact') and the employment of skilled consensus-builders who are able to exploit and influence well established social/political/business networks. The box below provides a commentary of how this lesson resonates with the three UK case studies.

**Supporting evidence**

- **regarding CTRL** interviewee responses revealed that the promotion and development of project objectives required considerable political skill on the part of key champions such as Michael Heseltine (CTRL and regeneration/restructuring) and John Prescott (financial rescue) at key stages of the project's development, particularly with regard to addressing 'agent of change' objectives and financial restructuring issues.
- **for M6 Toll Road**, according to interviewee reports, many project objectives appear to have been latterly the product of much 'closed door' negotiations between the concessionaire and central government which raised some concerns in certain quarters. .
- **for JLE project,** there was considerable evidence to suggest that project objectives (post abandonment of the Greenwich - Waterloo Line option) were developed in partnership between the public and private sectors, although as the project proceeded some interviewees suggested that the private sector became increasingly excluded.

**Typological Resonance**: RC, RS, S1-S8, LP1-LP3

MUTPs *may* be pursued for reasons other than those stated as published objectives. Certain key interviewees suggested that there was, for example, an intentional strategy *not* to excessively highlight the underlying broader 'agent of change' (*grande project*) vision for fear this may be maliciously discredited by the media and other parties and thereby undermine the support for the rail link. The box below provides a commentary of how this lesson resonates with the three UK case studies.

**Supporting evidence**

- **for CTRL,** some interviewees suggested that the project was used as a means to promote local political agendas (e.g. by the encouragement of the regeneration of areas in East London controlled by the chief opposition party at the time) and was also impacted by concerns about national prestige given that the French high-speed railways on the other side of the Channel Tunnel had such a positive international high profile.
- **for M6 Toll Road,** the situation was much more clear cut in that this project represented the delivery of a significant piece of national road infrastructure ostensibly at little/no cost to the public purse with the toll road arrangements possibly being a precursor to a national programme of toll road charging for motorways.
- **in the case of JLE,** interviewees suggested that this project was initially very much driven by aspirations to fulfill Conservative Party political goals to encourage private sector financing of infrastructure, and regenerate areas of London held by an opposition party, whilst simultaneously reinforcing London's global financial dominance.

**Typological Resonance**: RC, RS, S1-S8, LP1-LP3

### 5.4.2.4 The evolving nature of project objectives

MUTP planners and delivery agents need to take account of the likelihood that new objectives will 'emerge' over the course of the project's planning and appraisal periods as a result, among other things, of changing contextual elements (including emerging/changing stakeholder agendas). Large/complex MUTPs, in particular, *often* experience periods when project objectives need to evolve (over both very long and very short periods of time) in response to changing political and other contextual elements. Longer planning periods can be of positive benefit *if* it is judged that a large, costly, and complex project with potentially far-reaching impacts needs to be more exposed to the manifold stakeholders that are affected over a lengthy (but defined) period. Equally, it has to be accepted that this evolutionary period *can* be too lengthy and will at some stage need curtailment in order to facilitate a timely decision as to whether a project goes ahead, with winners and losers emerging from such a decision. The box below provides a commentary of how this lesson resonates with the three UK case studies.

**Supporting evidence**

- **for CTRL**, it's objectives clearly evolved over a considerable period of time - from being a simple/least-cost rail link from the Channel Tunnel to London using existing infrastructure, to the provision of a high-speed service on a dedicated line that was also inextricably linked with regeneration and economic growth initiatives and property development;
- **for M6 Toll Road**, the project's objectives changed subtly over time - from a free at the point of use relief road, to a private sector toll road offering a free flow alternative to the heavily congested parallel motorway. This change of status primarily involved only government and the concessionaire and was a decision arrived at with limited public consultation at the time.
- **for JLE**, its objectives expanded considerably in the run-up to Royal Assent, from a standalone line between Greenwich and Waterloo to an extension of the JL running from Green Park to Stratford. The project's broader objectives were effectively 'put on hold' around 1993 until 1996/7 when the JLE was heavily influenced by the Labour Party's agenda to showcase ''New Britain'' with the Millennium Celebrations and Blair's statement 'What we have promised to do, we will do'. The net result of this was that there was considerable central government intervention in the project management of

the closing years of the implementation of the project to ensure the project's completion in time for the new millennium in time for the opening of Millennium Dome.

**Typological Resonance**: RC, S1-S4, LP1-LP3

While it is important to acknowledge and accept the importance of 'emergent objectives' in the planning, appraisal and delivery of MUTPs, it is also important that such projects are assigned objectives (including those associated with project and agency roles/functions and performance indicators) that are clearly set from the outset. Paradoxically, having clear and consistent objectives at the outset may in fact also be positively harmful to a project in not allowing it sufficient time to respond to changing stakeholder agendas and other contextual influences. The box below provides a commentary of how this lesson resonates with the three UK case studies.

**Supporting evidence**

- **for CTRL**, 'emergent objectives' were considered by many interviewees as no bad thing in that they ultimately helped shape the MUTP to better suit its contextual influences than earlier proposals that were essentially limited to a 'least cost' solution for upgrading existing facilities. In this sense, the project also benefited from the 'time to breathe' it was given.
- **for JLE**, project objectives were reasonably constant from Royal Assent onwards but these same objectives contributed to the development of implementation problems which were only remedied by the introduction of new objectives in 1996/7. Some respondents contend that had the project objectives been more precisely defined and rigidly applied from the outset (in the Canary Wharf proposal for the Waterloo to Greenwich (direct) Line), the project would have been undoubtedly limited with regard to its broader success. The JLE experience points towards the early formation of project objectives which are flexible and responsive to contextual change.

**Typological Resonance**: RC, S1-S4, LP1-LP3

The extended up-front planning periods for some MUTPs and the resulting changing/evolving nature of project objectives may mean that the original reasons why the project is being built can become less critical in terms of their ultimate justification. The box below provides a commentary of how this lesson resonates with the three UK case studies.

**Supporting evidence**

- **for CTRL,** the planning period was arguably more than 25 years. Interviewees suggested that ultimately CTRL was justified not only in terms of its core objectives but also on the strength of its ability to stimulate the regeneration of areas in London and the Thames Gateway;
- for JLE the planning period was *almost* 50 years; and,
- **for the M6 Toll Road**, the planning period was almost 20 years;

**Typological Resonance**: RC, RS, S1-S8, LP1-LP3, LP6

### 5.4.3 Lessons concerning sustainable development visions and challenges

#### 5.4.3.1 SDVs as frameworks for the planning and appraisal of MUTPs

SDVs have the *potential* to provide a significantly better framework for judging the 'success' of MUTPs but require significant attention to ensure that 'sustainability' is defined in terms that are meaningful in an operational sense - and are consequently clear and unambiguous to all stakeholders. However, at present SDVs are insufficiently developed as operationalised guidance to offer such a framework. Therefore, SDV frameworks for MUTPs need to be developed further so as to provide guidance that is:

- clear, consistent and applicable to all parties in MUTP planning and delivery (making clear all respective roles and responsibilities);
- capable of being operationalised by MUTP planning and delivery agents so as to influence decision-making more directly;
- able to strike an appropriate balance between local, global and intermediate issues: for example considering the spatial scope of the appraisal, not just local community impacts).

**Commentary:**

- interviewees suggested that whilst SDVs are a potentially very important means of judging project success, the lack of workable, operationalised definitions of the various dimensions of sustainability and the consequent unavailability of associated evaluative criteria means that they are incapable of meaningful application at present in the context of day-to-day decision-making associated with objective setting, appraisal and evaluation. Interviewees cited both technical and institutional problems limiting the use of SDV in appraisal.
- however, interviewees noted the clear need for a broader range of criteria that emphasise the various different dimensions of 'sustainability' - incorporating environmental sustainability, economic sustainability, social sustainability and institutional sustainability.
- this broader approach must properly reflect the many different agendas/needs/ concerns and timescales associated with different stakeholders/stakeholder groups.
- the relationship between CTRL/JLE and 'sustainability' is seen more in terms of the delivery of regeneration benefits at development hubs than in relation to the rail services themselves.
- concern is expressed that projects such as CTRL simply facilitate ever more travel, both long distance and commuting, which is in itself unsustainable. Arguably the essentially low density nature of development at Ebbsfleet adds further doubt about the sustainability credentials of CTRL.
- both OMEGA interviewees and reports compiled for the CTRL project suggest a degree of scepticism about the ability of major rail projects to catalyse regeneration. Indeed, some saw CTRL as effectively blighting King's Cross as a result of the lengthy planning period for the project.
- similarly, evidence from the TGV experience in France, to date, and the less directly comparable experience of the rapid rail transit systems in the UK, Germany and North America, suggests that rail investment itself is unlikely to stimulate economic development, but it may be a catalyst in the process if other favourable conditions exist: that is, rail investment will not itself spark a substantial process of economic development, but it can be used as an instrument to exploit development potential.
- there appears to be a distinct lack of clarity on the part of stakeholders as to how MUTPs and the development/regeneration projects they spawn might be planned and/or retrofitted so as to achieve key sustainability objectives.
- interviewees concede the need for a broader range of criteria that emphasise 'sustainability'. In this regard, SDV frameworks for MUTPs need to be:

- clear, consistent and applicable to *all* parties in MUTP planning, appraisal and delivery (making clear all respective roles and responsibilities);
- capable of being operationalised by MUTP planning, appraisal and delivery agents so as to influence decision-making more directly;
- supported by a sustainable institutional frameworks. It is questionable whether SDVs can expect to be delivered in the absence of institutions with a well developed 'institutional memory' and vision in light of the fact that they require long-term evaluation cycles.

- sustainability appraisals should a key part of the initial project conception, planning and appraisal process - i.e.:
  - to determine the need and justification for the project
  - to determine alignments, associated developments and technical specifications etc. that will enhance the sustainability profile of the project and the areas on which it impacts
- most importantly, unlike CTRL, such appraisals should *not* simply be used as a means to appraise the performance of different pre-determined options and should, by virtue of their size, cost and potential impact, be the subject of scrutiny by parliament.

**Typological Resonance**: RC, RS, S1-S4, S7-S8, LP1-LP3

There would seem to be a distinct lack of clarity on the part of stakeholders as to how MUTPs and the development/regeneration projects they spawn might be planned and/or retrofitted so as to better achieve key sustainability objectives.

**Commentary:**
- CTRL, M6 Toll Road and JLE interviewees all acknowledge that the retrofitting of MUTPs and the planning/development initiatives with which they are associated has rarely been considered in depth, and often the retrofit options for MUTP infrastructure, especially the line haul, is limited.
- despite this, researchers see the planning/retrofitting of MUTPs and associated developments as one of the major emerging issues for the 21st Century.

**Typological Resonance**: RC, RS, S1-S4, S7-S8, LP1-LP3

SDVs require long-term evaluation cycles which must be supported by a sustainable institutional framework (it is questionable whether SDVs can expect to be delivered in the absence of such institutions).

**Commentary:**
- point raised by JLE and CTRL interviewees.

**Typological Resonance**: RC, S1-S4, S7-S8, LP1-LP6

Other barriers to the application of SDVs as planning and appraisal tools include:
- the fragmented nature of the institutional framework charged with the pursuit of sustainability at the local/regional level through major projects, policies, plans and programmes - in particular, the different aspects/dimensions of sustainability are currently being treated in isolation (and divorced from policy and spatial planning);
- professional silos and currently entrenched project management thinking - the multi-dimensional nature of 'sustainability' demands an holistic view of the complexities associated with MUTPs and the developments/initiatives with which they are associated

- the 'culture' of certain central government ministries which do not see themselves as formulating or supporting visions.

**Commentary:**
- point raised by JLE and CTRL interviewees.

**Typological Resonance**: RC, RS, S1-S4, S7-S8, LP1-LP6

Sustainability appraisals should a key part of the project conception, planning and appraisal process - i.e.:
- to determine the need and justification for the project
- to determine alignments, associated developments and technical specifications etc. that will enhance the sustainability profile of the project and the areas on which it impacts

Most importantly, such appraisals should not simply be used as a means to appraise the performance of different pre-determined options.

**Commentary:**
- interviewees point out that, unlike the EIA process undertaken for the three UK case study projects, sustainability concerns should be input at the outset of the planning and appraisal process - not as a means to determine the relative performance of pre-determined project options
- this may call into question the fundamental raison d'etre of the project - in this context it is interesting to note interviewee concerns that MUTPs such as CTRL and M6 Toll Road which encourage ever more (long distance) travel are themselves essentially unsustainable
- according to interviewee responses, the relationship between CTRL and 'sustainability' is seen most frequently in terms of the delivery of regeneration benefits
- for the M6 Toll Road, the sustainability benefit most frequently quoted by interviewees is the ability to offer a free flow/uncongested route that enables vehicles to operate at maximum efficiency
- for JLE, most commentary on sustainability and appraisal centred around regeneration benefits and (to a lesser extent), decongestion of the tube network and reduction in car travel/parking requirements at the Docklands
- for CTRL and JLE, the decision to go-ahead was more political than techno-rational
- for all three UK case studies, the appraisals that took place were too narrow and transport focused without taking wider sustainability issues into account.
- CTRL, JLE and M6 Toll Road interviewees all considered that the key characteristics of MUTPs (size, cost, impact etc.) suggest they need to be considered as 'national assets' and should therefore be fully debated and scrutinised by parliament. This is also relevant in respect of the transparency associated with the financing of MUTPs.

**Typological Resonance**: RC, RS, S1-S4, LP1-LP3

Sustainability appraisals for MUTPs should, by virtue of their size, cost and potential impact, be the subject of scrutiny by parliament.

MUTPs that spawn significant new suburban development may not be a positive influence on social cohesion - though community building could never be justifiably a realistic objective for MUTPs.

**Commentary:**
- point raised by JLE and CTRL interviewees.

**Typological Resonance:** RC, RS, S1-S4, LP1-LP3

### 5.4.4 Lessons concerning the treatment of risk, uncertainty complexity and context in decision-making

#### 5.4.4.1 Critical sources/elements of RUC

Critical sources/elements of RUC cited by OMEGA interviewees:

- most significant sources of RUC originate from **external sources** – they reflect the variable nature of the contexts into which MUTPs are placed. But, interviewees suggest *internal* project planning and delivery processes are more stable and can be successfully 'controlled' or mitigated;
- the **lengthy planning and implementation period** for UK MUTPs was most frequently cited as *the* major source of risk and uncertainty - having particularly serious knock-on effects for private sector investors.
- key issues were the **fluidity of contextual elements** - especially the changing nature of stakeholder agendas during the project planning and appraisal period. Essentially, project planning agents look for 'certainty' and are therefore uncomfortable with the evolutionary nature of many large/complex MUTPs.
- the inability of **current tools/methods** to clearly discern and analyze the full range, nature and scale of potential project 'impacts' is extremely problematical and is a significant source of RUC. This is compounded by changing contextual elements during the planning and appraisal period.

#### 5.4.4.2 Context – understanding the context is critical

It is of critical importance that all stakeholders both seek to identify and understand the way in which 'context' is likely to impact on the MUTP planning and delivery (and the way in which such influences change over time) since this will almost inevitably have a very significant bearing on pivotal decisions.

**Commentary:**
- CTRL responded to changing contextual influences in terms of:
  - original decision to purse the project through private financing - product of the Thatcher Govt but sustained by subsequent governments;
  - decision to pursue dedicated high speed line - response to issues of national prestige and the notion that CTRL could be used to promote regeneration;
  - arrival of new political champion (Heseltine) & associated Thames Gateway vision
- The M6 Toll Road responded to contextual influences in terms of:
  - government policy in relation to key economic drivers such as improved connectivity between regions represented a favourable context for project launch;
  - general appetite for large projects, often driven by 'big ideas';
  - nature of the stakeholder environment – seen as 'simple' (few competing stakeholder agendas to grapple with);
- The JLE responded to changing contextual influences in terms of:
  - Conservative government's policy related to visions for the Docklands (via LDDC) and private sector contributions to public projects
  - the health and safety legislative impacts from the 1987 Kings Cross disaster
  - the early 1990s Global recession and the key private sector contributor going into

liquidation, thereby violating one of the government's key policies supporting the project
    - LUL's desire to have a technological showcase
    - the Labour government's Millennium Dome celebrations
- For UK projects, key contextual considerations were identified as:
    - the tensions between short-term political horizons and the need for long-term planning
    - the need for 'vision' to supplant an over-dependence upon rationalist forecasting
    - the current state of public sector finances, which encourage governments to pursue the PFI approach
    - the currently poor institutional context for MUTP planning, appraisal & delivery - '.....especially the need for joined up approach in terms of consultation and decision-making'
- The inability of forecasting methodologies to take sufficient account of all contextual elements.

**Typological Resonance**: RC, RS, S1-S8, LP1-LP6

Changing contextual elements result in the evolving nature of projects such as CTRL - the planning and delivery process responds to the moulding influence of changing contextual elements over time. Thus, context awareness on the part of MUTP planning and delivery bodies is especially significant if 'success' is to be achieved.

Moreover (as noted above):

- 'project success' can only realistically be judged in light of sound knowledge of the context that prevailed at the time the project was conceived, planned, appraised and implemented;
- successful projects are likely to be characterised by planning and delivery agents that possess acute awareness of the importance of context *throughout* the project lifecycle.

**Commentary:**

- changing contextual elements contribute to the evolving nature of MUTPs. In particular (for the M6 Toll Road), the planning process may become subject to fundamental shifts in the raison d'etre for the project as a result of contextual change brought about by political mantras/policy (such as that associated with the pursuit of the PFI approach).
- this makes context awareness and context sensitivity especially significant if 'successful' projects are to be delivered.
- the ability to proactively or reactively respond to changing contexts is also critical. Often delivery agents are aware of contextual forces, but are unable to react due to the reluctance to jeopardize rigid project objectives.
- project success can ultimately only be judged against the background of sound knowledge of the context that prevailed during project planning, appraisal and delivery.
- political influence is frequently seen as the most powerful force in regard to the project planning and appraisal process.
- contextual change brought about by short-term political horizons/cycles frequently constrains the ability of sponsors and delivery agencies to implement MUTPs and their attendant plans and programmes, especially when these have a necessarily long-term perspective due to lengthy project lifecycles. The tendency towards 'short-termism' on the part of politicians and civil servants suggests both an inability and lack of desire to effectively scan existing and future context – rather, the focus is on defining what is practical and achievable in the short run.

- the most significant *generic* contextual elements for UK MUTPs according to interviewees are:
  - stakeholder perspectives/motives/agendas
  - political context
  - financial context
  - economic contexts
- MUTPs as agents of significant contextual change.

**Typological Resonance**: RC, RS, S1-S8, LP6

Procedures need to be put in place to ensure that contextual change is constantly monitored, enabling strategies, plans and programmes to be adjusted in light of early warnings of the need for corrective action resulting from such monitoring.

**Commentary:**

- for all UK case studies there is little evidence to suggest that there were *explicit* mechanisms and procedures for identifying and monitoring contextual forces. The JLE high risk signaling system was subject to progress reviews and a fixed date for cancellation in the event of unsatisfactory progress – however this system was overrode my management. Also many references to relationship and consensus building on the part of key decision-makers suggests a considerable degree of 'informal' context awareness and scanning - politicians are seen to be especially sensitive to (changing) context.

**Typological Resonance**: RC, RS, S1-S6, LP1-LP5

### 5.4.4.3 Context - political influence/support as a key contextual element

Political influence/support is seen as *the* critical contextual factor in all aspects of MUTP planning and delivery and a clear pre-requisite to the successful launch of a project - somewhat inevitable given that MUTPs are usually costly, require some form of government backing, are potentially controversial and have wide ranging impacts over a broad area.

Political patronage in the form of a well respected and influential champion/guardian is also seen as a key asset for MUTP project sponsors, planners and delivery agents. Champions fulfill and number of important roles as foci – including clarifying/setting/adjusting project objectives, establishing project credibility and mandate for project teams, consensus building and networking.

**Commentary:**

- especially critical in relation to CTRL (Heseltine's vision to link CTRL with regeneration and restructuring) and JLE (government's policy of encouraging private sector investment and free enterprise coupled with an aim to regenerate inner city areas) but less critical in relation to the M6 Toll Road.

**Typological Resonance**: RC, RS, S1-S8, LP1-LP3

It is essential for both champions, project sponsors and planning & delivery team leadership to display acute awareness of the subtleties associated with fluid political contexts.

The tendency towards 'short-termism' on the part of politicians and civil servants suggests both an inability and lack of desire to effectively scan existing and future context – rather, the focus is on defining what is practical and achievable in the short run. Indeed, political pragmatism is often seen as the enemy of strategic thinking and strategy formulation/implementation. Politicians are generally risk adverse when backing projects.

MUTP planning and delivery agents need to be aware that there frequently exists significant tension between 'vision' and political practice/pragmatism - politicians are rather uncomfortable with overtly backing a 'vision' as this may backfire on them.

**Commentary:**
- especially critical in relation to CTRL (Heseltine's vision to link CTRL with regeneration and restructuring) and JLE (government's policy of encouraging private sector investment and free enterprise coupled with an aim to regenerate inner city areas) but less critical in relation to the M6 Toll Road.

**Typological Resonance**: RC, RS, S1-S8, LP1-LP3

### 5.4.4.4 Context - perception of context

There appear to be different professional perspectives on the influence/importance of context - lanners/politicians and private sector promoters are seen as more contextually aware than 'traditional' project managers driven by day-to-day aspects of project delivery according rigidly interpreted programmes.

**Commentary:**
- general observation by OMEGA interviewees.

**Typological Resonance**: RC, RS, S1-S6, LP1-LP6

There occur moments in time (contexts) when circumstances are ripe for decision-makers to 'seize the moment' - suggesting that successful project planners and delivery agents are indeed very aware of both 'context' and its changing nature (perhaps in an instinctual rather than formal way).

**Commentary:**
- supported by almost all OMEGA interviewees.
- for example, it would seem that MEL took advantage of political and economic circumstances to wrest a 50+ year concession on favourable terms.
- Arup took advantage of the arrival of M. Heseltine at DoE to launch their alternative route for CTRL.
- the two moments of time which resonate most for JLE were the context elements coming together to enable the project to be successfully promoted by the private sector in 1998, and the period between the deposition of the Parliamentary Bill and the end of the18 month moratorium of 1992 which allowed LUL to propose grand architectural plans for the stations.

**Typological Resonance**: RC, RS, S1-S8, LP1-LP6

Astute stakeholders may be able to 'mould' context so as to ensure that circumstances are ripe for 'seizing the day' - especially true of political decision-makers, who are seen to be highly context-aware.

| **Commentary:**<br>• general observation by OMEGA interviewees. |
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| **Typological Resonance**: RC, RS, S1-S6, LP1-LP5 |

### 5.4.4.5 Context - the project lifecycle

The 'project delivery phase' is seen as less contextually sensitive than other phases because of the perception that the project is 'frozen' – this explains, at least in part, why project managers are believed to be less contextually sensitive.

MUTP planning and delivery is especially vulnerable to RUC because of the lengthy processing and appraisal periods, that are also overly complex.

| Commentary:<br>• general observation by OMEGA interviewees. |
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| **Typological Resonance**: RC, RS, S1-S6, LP1-LP4 |

### 5.4.4.6 Context - RUC and the pace of change in the 21st Century as context for MUTP planning and delivery

The 21st Century is seen as being characterised by a faster pace of change, resulting in significantly greater RUC in the planning and delivery of MUTPs.

| **Commentary:**<br>• key contextual forces/influences that are seen by interviewees to lead to greater RUC in the 21st Century include:<br>  ○ unstable economic circumstances;<br>  ○ the use of new technology and rapid technological breakthroughs which quickly render technology obsolete;<br>  ○ climate change;<br>  ○ energy concerns;<br>  ○ the extended time required in completing MUTP planning and development processes. |
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| **Typological Resonance**: RC, RS, S1-S8, LP1-LP5 |

This increased RUC in the 21st Century is seen to require a series of important functional responses and competencies, including:

- enhanced competencies - especially, the need for a broader holistic view of project planning and delivery processes and enhanced political/tactical awareness of the influences on such processes;
- reduction of barriers (in-fighting) between departments responsible for project planning and implementation;

- better understanding of the influences associated with prevailing and emerging future contexts;
- the need to identify and plan for the contextual changes that may be brought about by MUTPs;
- the need for planning and implementation strategies and programmes that are robust but also capable of ready adaptation in the face of changing needs/demands and contextual items. The use of scenario building and testing is seen as a key means to seek to discern future contextual influences on project planning and delivery;
- the need for greater stakeholder involvement in the planning and delivery process and identification of prevailing and emerging/changing stakeholder motives and agendas.

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| Commentary:<br>• general observation by OMEGA interviewees |
| **Typological Resonance**: RC, RS, S1-S6, LP1-LP5 |

### 5.4.4.7 Context - institutional support and RUC

An institutional framework needs to be established which is able to address the multiplicity of expectations that MUTPs inevitably engender.

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| **Commentary:**<br>• little thought appears to have been given to the *institutional context* into which the case study projects were placed - no evidence of the establishment of an institutional framework capable of dealing with the multiplicity of contextual elements (especially stakeholder contexts) so as to maximise the potential benefits of the projects. |
| **Typological Resonance**: RC, S1, S3, LP1-LP5 |

### 5.4.4.8 Context - mega events as significant contextual influences on MUTPs

MUTP planning and delivery agents need to acknowledge that 'mega events' may have both a positive and negative impact on RUC.

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| **Commentary:**<br>• positive: fixed deadlines associated with MEs 'focus the mind,' provide certainty and help reduce risk by enabling broad consensus on the need for/commitment to action to be reached quickly and for related infrastructure to be fast-tracked in light of such matters as national/political prestige;<br>• negative: the diversion of attention/oversight and resources away from other important projects, thus increasing risk; the tendency to adjust/downgrade certain project elements and/or increase spending so as to ensure that imposed deadlines are met.<br>• respondents noted mega events could include any event with a high impact on the project (both directly or knock-on) such as new regulations (e.g. the Financial Deregulation of 1988), rapidly changing economic circumstances (e.g. the early 1990s global recession) and political change.<br>• in this sense, mega events did not impact significantly on the M6 Toll Road. |
| **Typological Resonance**: RC, RS, S1-S8, LP1-LP5 |

### 5.4.4.9 Strategy - impact of visions/objectives on risk

Clear visions at the commencement of project planning and delivery may *not* be a means to mitigate risk - primarily due to the influence of changing contexts resulting from new stakeholder agendas. Indeed, having firmly fixed visions/objectives may well serve to increase risk by reducing the ability to respond to these fluid agendas.

**Commentary:**

- in the case of CTRL interviewees suggest that clearer project visions/objectives would have had minimum impact on CTRL which 'needed' to experience the normal organic evolution of a large MUTP in the UK. It was also suggested that it is impossible to identify every facet of the project that needs to be reflected in overarching vision and strategy at the outset.
- but, having a shared vision about project objectives and deliverables can become a unifying element within and between actors that helps to address issues of uncertainty - inasmuch as this can become the basis for commitments by parties responsible for delivering key parts of the project/programme.
- in regard to the M6 Toll Road, perceived as being a straightforward project, firmly established project objectives enabled clarity to be established.
- interviewees suggest that project visions/objectives should be manifestly clear and should be fully explained to all stakeholders.
- JLE interviewees stressed the importance of maintaining flexibility - becoming locked into the delivery of precisely defined objectives may be problematical when change/adjustment is clearly necessary.

**Typological Resonance**: RC, S1-S4, LP1-LP3

### 5.4.4.10 Strategy – the need for robustness and adaptability

Since most MUTPs are subject to changing contextual influences, such projects may well need to be delivered through a flexible, evolving and responsive approach which is capable of addressing/accommodating such change.

**Commentary:**

- whilst interviewees suggest that CTRL was delivered through (variously) a flexible, evolving and responsive approach which needed to address/accommodate the complexity of the project and its ever-changing context, it is doubtful that government *deliberately* adopted a strategy that was 'flexible, adjustable and robust, paying attention to short, medium and long term consequences simultaneously' - rather, it would seem that new contextual items and ideas simply occurred in an ad hoc manner which ultimately served to mould the project.
- it is noted that for the M6 Toll Road (once it entered the PFI stage), government had no back-up plan in the event that the PFI failed.
- JLE respondents report that a project which has been 15 years in the planning can arrive at Royal Assent without being fully defined, and despite this, is often subject to budget constraints which were not readily foreseeable during the planning process – forcing critical decisions to be made at the 11$^{th}$ hour prior to implementation.

**Typological Resonance**: RC, RS, S3-S6, LP1-LP4

### 5.4.4.11 Strategy – project 'freezing'

Careful thought needs to be given as to when a project can be effectively frozen - for both public and private sector projects - as contextual change thereafter may be very difficult to accommodate. This is especially pertinent in that many MUTPs evolve over time and it may be argued that such projects should *only* be frozen after all contextual eventualities have been taken into account - this may mean that matters such as cost and programme control remain problematical for a considerable period of time.

Thus, the prudent project planning and delivery agency will always ensure that project design/scope is capable of subsequent adjustment as far as possible - in terms of scalability, connectability and functionality.

**Commentary:**

- given the acknowledgement by stakeholders that many MUTPs are largely 'evolutionary' in nature, it may be argued that such projects should *only* be frozen after all contextual eventualities have been taken into account - this may mean that matters such as cost and programme control remain problematical for a considerable period of time.
- what is also clear is that contextual influences *never* remain static. This suggests that experience and sound judgement based on extensive stakeholder consultation may be the only realistic means of determining when to freeze a project for the purposes of implementation.
- however, the prudent project planning and delivery agency will always ensure that project design/scope is capable of subsequent adjustment as far as possible - in terms of scalability, connectability and functionality.

**Typological Resonance**: RC, RS, S2-S6, LP4

Once projects have entered the implementation/construction stage they:

- often have to be modified to cope with unexpected conditions;
- but, are notoriously difficult (costly) to change in terms of their fundamental design specification - this has implications for decisions to use innovative technology.

**Commentary:**

- general observation by OMEGA interviewees.

**Typological Resonance**: RC, RS, S2-S6, LP4

### 5.4.4.12 Strategy – strategic components (and impacts) are difficult to identify and quantify

The changing circumstances (contexts) that surround the MUTP planning and delivery process and the impacts this can have on moulding project approach/content is difficult to identify (much less quantify).

This may mitigate against having very clear and well established objectives at the outset if systems/processes do not allow such objectives to be modified in response to changing contextual elements and emerging agendas.

**Commentary:**
- general observation by OMEGA interviewees

**Typological Resonance**: RC, RS, S1-S8, LP1-LP5

### 5.4.4.13 Projects as open/closed systems

The relative complexity associated with individual MUTPs should be taken into account in their treatment as open and closed systems at different stages in the project lifecycle.

In particular, it is suggested that:
- a closed system approach may be more justifiable for those projects that are: relatively simple/straightforward; subject to the PFI mechanism where financial imperatives tend to overshadow most other concerns;
- more complex projects with wider 'agent of change' objectives and associated plans/programmes need to be treated as fully open during the planning and appraisal process so as to allow for the playing out of stakeholder agendas and other contextual forces.

**Commentary:**
- MUTPs may be treated as both 'open' and 'closed' at different stages, and for different reasons.
  - CTRL was *initially* treated as a closed ('frozen') system in terms of financial (demand) modelling and appraisal as part of the business case assembly. It was *subsequently* treated as an open system in terms of accommodating broader elements that were ultimately a major part of the justification of the project.
  - the M6 Toll Road was treated as a discrete closed system for which demand and supply could be accurately forecast. This not seen as problematical, but rather a necessary process to support the framing of the project as a PFI.
  - JLE was originally treated as a closed system - led by the private sector, its integration with the Underground made it part of a larger closed system for demand modeling, but an open system for the consideration of wider benefits. During the construction phase the project was a closed system but continually impacted by external contextual influences.
- for both complex and relatively straightforward projects, the implementation/delivery stage will normally be treated as 'closed'.

**Typological Resonance**: RC, RS, S3-S6, LP1-LP3

### 5.4.4.14 Regulatory frameworks and governance - statutory processes

MUTP planning and delivery agents need to be aware that statutory processes can *both* increase and decrease levels of RUC.

**Commentary:**
- the Hybrid Bill process for CTRL was seen to reduce the risk of delays (rigorous and fast legal procedures were adopted). The Hybrid Bill may have been adopted following parliamentary experiences of the JLE Bill which dedicated significant parliamentary time to the project. The JLE Parliamentary Bill was threatened by a political campaign (for two Southbank stations).
- the Public Inquiry system for major projects such as MUTPs is seen as flawed by stakeholders and/or a 'necessary evil' by promoters and delivery agents in terms of

prolonging the period of RUC.

- this suggests a need to re-think the manner in which stakeholders are enabled to engage with MUTPs at the planning and appraisal stage. Interviewees consider that stakeholder engagement can have a very positive impact on planning and delivery, provided this is undertaken in a transparent manner, at an early stage in the project lifecycle and that informed contact is maintained throughout.

**Typological Resonance**: RC, RS, S1-S6, LP2-LP3

### 5.4.4.15 Regulatory frameworks and governance - extracting benefits from MUTPs

MUTP planning and delivery agents need to be aware of the potential for political processes to create conditions that are favourable to the success of a PFI, and that this may mean that other potentially beneficial project impacts become more difficult to achieve.

Risk and uncertainty may arise as a result of inadequate bargaining skills on the part of the public sector to determine and extract an 'appropriate' amount of benefit from MUTPs - seen as especially significant in relation to PFI projects.

**Commentary:**

- considerable RUC observed by interviewees regarding the extraction of benefits through the planning system due to (for example) the perceived lack of flexibility and consistency in applying planning regulations and political interference.
- but, planning instruments/processes are seen to be more-or-less adequate. The most critical factor is the bargaining skills of public sector representatives.

**Typological Resonance**: RC, RS, S1-S6, LP1-LP3

### 5.4.4.16 Regulatory frameworks and governance – national policy frameworks

National policy frameworks offer a potentially valuable basis on which to prioritise and plan MUTPs as such frameworks are seen to facilitate equity in public sector resource allocation and also clearly demonstrate the contribution such projects can make to the nation's well-being.

**Commentary:**

- interviewees observed that National planning frameworks (NPFs) potentially represent a positive background against which MUTPs can and should be planned and delivered - especially in terms of establishing relative priorities for MUTP delivery and obtaining political and financial commitments.

**Typological Resonance:** RC, RS, S1, S3, LP1-LP3

However, there remains concern about the practical application of such frameworks in the context of controversial projects and in relation to the ability of politicians to exert undue influence - especially given the tensions between long-term strategic planning and short-term political horizons.

**Commentary:**

- interviewees observed the following potential problems associated with NPFs:
  - NPFs becoming a hostage to political expediency
  - the need to acknowledge that NPFs should represent a framework rather than a rigid, inflexible plan and will need constant monitoring and updating
  - NPFs would need to be all-embracing in regard to the prioritisation of manifold stakeholder agendas and sectoral issues and also balance national needs with regional/local concerns
- UK (including the civil service) has no track record in the sort of strategic thinking that should accompany the establishment of NPFs.

**Typological Resonance**: RC, RS, S1, S3, LP1-LP3

### 5.4.4.17 Regulatory frameworks and governance – political will and risk, uncertainty and complexity

MUTP planning and delivery agents should be aware that insufficient political will can often become a significant source of risk - again, primarily resulting from expediency/pragmatism brought about by short-term political horizons.

**Commentary:**

- while political influence/agendas had a significant impact on the planning and delivery of CTRL, there were no formal monitoring mechanisms in place to assess the RUCs stemming from insufficient political will, inappropriate governance and regulation. Whatever was done in this regard, took place on an informal basis using well established business/government networks.
- the JLE 18 month moratorium was created by the political will to collect the private sector contribution (NPV value representing 5% of final JLE cost).
- for the M6 Toll Road key political influences included the decision to pursue the project as a PFI - which resulted in a rather opaque relationship between government and the concessionaire and the downplaying of project objectives relating to the relief of congestion on the M6 (the 'originally' proposed function of the project.

**Typological Resonance:** RC, RS, S1-S6, LP1-LP3

### 5.4.4.18 Relevant project information - need for 'certainty', accuracy and realism

Project planning and implementation plans/programmes need to be 'certain', 'realistic' and enable the proper integration of actions and activities by all concerned parties.

*Certainty* is seen as particularly critical in terms of commitments to the delivery of key decisions, approvals and infrastructure components (by a specified time) on which parallel investment and funding decisions are to be based.

The availability of high quality project information potentially assists in the ability to identify/anticipate moments in time in project planning and implementation when circumstances are ripe for key decisions to be made (often referred to as points in time when 'the planets are correctly aligned'). Such opportunities are not always easy to perceive and require constant scanning of existing and emergent contextual elements.

The collection and analysis of excessive amounts of data concerning forecast project performance can often obscure rather than enlighten. Such appraisal data is seen as no substitute for experience and expertise, especially in terms of risk mitigation and tactical awareness in regard to the handling of political influence (which is all pervasive in MUTP planning and delivery).

**Commentary:**

- these observations were variously drawn from interviewee comments of a largely general nature.
- poor cross-functional sharing of appropriate information/data and ideas (silos) was identified both within and between organizations and networks in CTRL planning and delivery.
- JLE interviewees suggested that information concerning political motives and policies is critical to the success of early planning stages, and ultimately the proposals passage through parliament. However, gaining the required information is not easy as government policy can be somewhat nebulous requiring direct political assistance to identify key points
- some respondents recounted stories of various situations where JLE lost the trust of private sector stakeholders, for example uncertainty surrounding payment of contracts during implementation was partially responsible for the poor performance of contractors.

**Typological Resonance**: RC, RS, S3-S6, LP1-LP5

### 5.4.4.19 Relevant project information – risk monitoring

Regular and sustained monitoring of contextual matters that are likely to influence project planning and delivery is critical. This requires extensive oversight of all inter-related and inter-disciplinary matters associated with contextual influences and project impacts. Monitoring must be coupled with a will to act. Delivery agents are often reluctant to adjust or abandon project objectives in the face of conflicting contexts.

Project planners and delivery agents need to be aware that informal monitoring of contextual matters (notably politics) is often a key activity that takes place through well established (informal) relationships and networks as part of consensus building.

Project planners and delivery agents also need to be aware that unexpected occurrences will almost always arise and that some of these can become especially critical. This is most prevalent at the project planning and appraisal stage but can also impact on project implementation.. Thus, prudent agencies will always constantly monitor prevailing contexts and build-in adequate contingency periods to project programmes.

MUTP planning and delivery agents need to be aware of risks posed by the potential shortcomings of current systems/mechanisms to assemble all relevant information regarding project interfaces at the planning stage - when the many, various and changing stakeholder agendas are frequently difficult to discern, suggests the need to employ personnel with distinct context awareness skills at the planning stage (in particular) to assemble and constantly refresh such information.

**Commentary**:
- general observation by OMEGA interviewees.

**Typological Resonance**: RC, RS, S1-S6, LP1-LP5

### 5.4.4.20 Tools/techniques for coping with risk, uncertainty and complexity - models and analytical tools

Current project appraisal and evaluation tools, methods and processes (especially the manner in which such tools and methods are utilised), are perceived to be *fundamentally flawed*. Therefore, dependence upon these tools, methods and processes *alone* is unlikely to deliver a successful MUTP.

In light of the above there is a need to *enhance* current tools, techniques and processes by, for example, making use of a wider multi criteria approach that takes full account of future contextual conditions.

**Commentary:**
- key issues/problems associated with the current appraisal and evaluation 'toolbox' are:
  - the inability to identify, quantify and 'weight' all relevant factors that determine/influence project outcomes with any real degree of precision;
  - the lack of attention to future contextual elements/conditions;
  - the need to understand that (particularly) political influence is likely to override the outputs from the use of traditional tools, methods and processes;
  - the perception that decision-makers are often told 'what they want to hear';
  - the shortcomings associated with the current toolbox are not adequately explained to decision-makers;
- the inconsistent treatment, mainly by sponsors/proponents of MUTPs such as CTRL, and JLE as projects that are both 'open and closed systems' and as both 'commodities and services' at different stages in their lifecycle - initially as closed systems and commodities so as to facilitate demand modelling and business case assembly and later as open systems and services when there is a need to include broader objectives capable of adequately justifying the project when faced with apparent criticism that demand forecasts ultimately prove to be incorrect.

**Typological Resonance**: RC, RS, S1-S8, LP2-LP3

The shortcomings of current project appraisal and evaluation tools, methods and processes (including the manner in which they are utilised) are frequently not fully understood by those that most often make use of them. It is believed that there is consequently a professional reluctance to acknowledge such shortcomings, except insofar as these can be improved upon by employing ever more 'sophisticated' techniques/enhancements. MUTP planning and decision-makers should therefore be very aware that there is a marked reluctance on the part of some professional groups to challenge the status quo in respect of project appraisal and evaluation.

**Commentary:**
- interviewees generally acknowledge that current appraisal and evaluation tools and techniques are incapable of getting to grips with all relevant contextual influences that are likely to affect project outcomes - not least because many of these contextual influences are extremely difficult to discern and are, in any case, subject to change over time.
- during the appraisal of the JLE the Treasury were reluctant to give any sort of recognition to regeneration benefits as appraisal criteria, however an informal project

evaluation saw the Treasury agree to wider benefits of the JLE had been considerable, perhaps equivalent to a CBA of 1:2.

- thus, there is a vital need for all appraisal and evaluation methodologies (including all inputs and assumptions) to be made abundantly clear to key decision-makers and other affected stakeholders - so that judgements about 'performance levels' can be made in an open and transparent manner, having regard to many different stakeholder perspectives on what constitutes 'success/failure'.
- in parallel, MUTP planning and delivery agencies need to 'place' techniques such as CBA and traffic modelling into a broader decision-making framework that enables their strengths and weaknesses to be taken fully into account - and weighted in accordance with different stakeholder perspectives. For example, there is a clear need for MUTP planning and delivery agents to appreciate that political influence will often override outputs from the use of traditional tools, methods and processes.

**Typological Resonance**: RC, RS, S1-S4, LP2-LP3

SDVs are not presently seen as a suitable framework for judging the success or otherwise of MUTPs due to perceived difficulties in defining 'sustainability' in an operationally assessable manner. It is suggested that much work is needed to turn SDVs into realistic, comprehensible and measurable project objectives

Indeed, the UK has very immature methodologies for valuing externalities associated with major infrastructure projects - including factors such as regeneration, innovation, enhancing skills/knowledge etc.

**Commentary:**

- see remarks above regarding SDVs.

**Typological Resonance**: RC, S1-S4, LP1-LP3

### 5.4.4.21 Tools/techniques for coping with risk, uncertainty and complexity - political will/influence and the traditional toolbox

Political will/imperative/pragmatism frequently overrides outputs from appraisal methodologies that apply such tools/methods and criteria.

Key decision-makers frequently do not rely on modelling exercises alone. In particular, (financial) model outputs are often seen as a means to post-rationalise decisions and/or legitimise previously held positions.

*Judgement and gut feeling* guided by policy is seen as significant in determining whether (and in what form) a project should proceed as more formal appraisal methods.

Having powerful political champions represents a means to reduce risk through increased certainty that the project is likely to proceed in a prescribed form.

**Commentary:**

- many key decisions that shape MUTPs are taken at the highest political level. This may well be somewhat inevitable given their size/complexity/cost/potential impact and the fact that national prestige is frequently a significant factor - also, to overcome perceived/actual professional/departmental silos within government.
- such decisions are taken after only after substantial political manoeuvring and

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| consensus building to ensure that projects achieve sufficient momentum to enable its implementation in a prescribed manner. |
| **Typological Resonance**: RC, RS, S1-S6, LP1-LP3 |

### 5.4.4.22 Tools/techniques for coping with risk, uncertainty and complexity – best practice

'Best practice' is seen as frequently being contextually insensitive and consequently needs to be applied with great care.

'Best practice' may be applied with greater 'safety' once projects have been effectively 'frozen' – suggesting that this later stage is seen as less subject to changing contextual influences.

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| **Commentary:**<br>• reliance on 'best practice' was not perceived to be a significant feature of the UK case studies *planning* process. However, drawing on experience from other projects was seen as a key means to mitigate risk - institutional learning from other projects (e.g. high speed rail in France) was positively beneficial to CTRL.<br>• 'best practice' was a significant feature of the JLE, but more in the detailed design and implementation than during the *planning* process. It is unclear whether learning from other projects (e.g. Hong Kong's MTR) was on balance positive or negative for the JLE. |
| **Typological Resonance**: RC, RS, S1-S6, LP1-LP5 |

### 5.4.4.23 Tools/techniques for coping with risk, uncertainty and complexity – skills and competencies to mitigate risk, uncertainty and complexity

MUTP planning and delivery is fundamentally impacted by stakeholder personalities and personal relationships which need to be detected, fully comprehended and monitored over time.

Maintaining continuity amongst key stakeholder staff involved in project planning, appraisal delivery is seen as essential if progress is to be maintained and a clear understanding of each parties' perspectives is to be gained. Maintaining appropriate levels of continuity throughout the project may be a significant challenge as respondents suggest different stages of the MUTP project lifecycle may require different types of leaders with different skill sets.

Strong leadership can reduce uncertainty - the private sector have a requirement for strong leadership and the associated certainty.

Both public and private sectors need to have full understanding, based on the proper availability of information, of each parties' constraints. Co-operation and relationship building is thus seen as more fruitful than an adversarial relationship.

**Commentary:**
- general observation by OMEGA interviewees.

**Typological Resonance**: RC, RS, S1-S8, LP1-LP5

### 5.4.4.24 Tools/techniques for coping with risk, uncertainty and complexity – risk management & project funding

Reliance on the private sector alone to mitigate risk is unrealistic in today's climate.

**Commentary:**
- for CTRL, government believed they could transfer risk to the private sector who themselves saw the CTRL as a potential money-spinner. Media and consultant stakeholders claim that the key point for private sector bidders for the project was to win it first and then re-negotiate terms because it was clear that Government could not afford to abandon the project once the contract had been signed. Funding arrangements made CTRL vulnerable to RUC from the outset - RUC was introduced into the project from the word go by the decision to finance the project using private money. "No one having seen what happened to the Channel Tunnel was going to put their money into it, and particularly not a project that actually depended upon the same revenue earning factors that affect the Channel Tunnel."
- funding arrangements made JLE vulnerable to RUC from the outset due to the importance placed by government on the requirement for a private sector contribution - effectively exposing the project to broader economic risks which can be particularly acute in the real estate sector, whilst the contribution was relatively small at 5% of the JLE outturn cost.
- interviewees identified a variety of sources of risk, associated predominantly with cost:
  - the project concessionaire may have to bear the costs and risks associated with the planning process which contained many unknowns and uncertainties;
  - risk associated with the expense of submitting bids for a concession;
  - the risk of cost overruns and ability to source funding;
- important mitigation measures were seen to include: internal - personnel matters (maintaining the continuity of experienced staff, proper levels of accountability and the establishment of systems to enable speedy decision-making; external - the use of marketing and discounted toll levels to secure high levels of use and extensive behavioural surveys in connection with the forecasting of toll levels.

**Typological Resonance**: RC, RS, S1-S6, LP1-LP5

There is a need to combine long-term planning frameworks for MUTPs with the delivery mechanisms (especially for PPP/PFI projects where risk is carried by the private sector.

New funding mechanisms need to be considered (including the ability to raise funds at the regional level, and the use of bonds underpinned by property values to allow a market to be created in major projects) so that schemes are assessed not only in terms of their likely returns, but also the credit worthiness of the developer/backer.

Real estate associated with MUTPs is broadly seen as a suitable means of funding – i.e. a potential element in project 'success' – in that the line haul and hubs are mutually sustaining. Despite this, responses suggest a generally ambivalent view of the importance of frequent, high quality train services to the associated hub developments. However, concern was expressed at the potential risk levels involved in using real estate (exposure to market

fluctuations and heavy up-front expenditure coupled with lengthy carrying periods before revenues are forthcoming) and, in consequence some interviewees suggest that the public sector is better able to carry project funding risk, including real estate-related risk.

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| **Commentary:**<br>• general observation by OMEGA interviewees. |
| **Typological Resonance**: RC, RS, S1-S6, LP1-LP3 |

#### 5.4.4.25 Tools/techniques for coping with risk, uncertainty and complexity – risk sharing

Determining an appropriate degree of risk-sharing between the public and private sector remains problematical and will often depend upon prevailing context and the bargaining skills of key players. In particular:

- transferring risk to the private sector carries with it the risk that the project scope/nature may change from that originally conceived – as a result of re-negotiation of terms and/or the private sector delivering the project it can best 'afford;
- risk management is an imprecise 'art' that requires the type of expertise that is not presently available in the public sector;
- balancing risk management between the public and private sectors is difficult when gains may only be realised in the long-term, while political horizons are typically short-term;
- the private sector will usually have a limit to their ability to successfully mitigate financial risk which is much lower than that of the public sector, resulting in the public sector ultimately inheriting all risk in the case of large risk events.

The long project planning, delivery and operation stages make projects vulnerable to changing economic contexts, and private sector stakeholders are challenged to adapt their business models accordingly to provide longer term risk mitigation.

In practice it is only in the long-term and/or when problems arise that clarity over appropriate risk share can be obtained. Specific risk-share issues were perceived to include:

- transferring risk to the private sector may result in a significant change to project scope/nature (compared with that originally conceived);
- balancing risk management between the public and private sectors is difficult when gains may only be realised in the long-term, while political horizons are typically short-term.

PPP/PFI arrangements pose a level of private sector risk exposure that is under appreciated by the public sector - e.g. where projects require heavy up-front expenditure in return for proceeds that may not be fully realised for a considerable period of time. With this in mind, some interviewees consider that government should absorb such risk in light of its ability to raise 'cheap' finance.

The public sector (including politicians) is generally not seen as being sufficiently skilled in negotiations with the private sector.

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| **Commentary:**<br>• these observations were variously drawn from interviewee comments of a largely general nature.<br>• Government failed to take full account of the risks associated with undertaking CTRL as a PPP/PFI project - in the event the project appraisal process failed to anticipate the |

impact of low cost airlines and were consequently manifestly optimistic, resulting in the need (in 1997/98) for government to shoulder much of the risk burden. Indeed, it would seem that successive governments viewed the PPP/PFI approach as the 'only game in town' that was likely to be politically acceptable.
- transferring risk to the private sector via a PFI (as in the case of the M6 Toll Road) carries with it the risk that the project scope/nature may change from that originally conceived – the private sector may well only be concerned with delivering the project it wants, not the project the public sector originally thought it was getting.
- for JLE, significant risk was transferred to the public sector due to contractual conditions included with the private sector contribution from Canary Wharf.

**Typological Resonance**: RC, RS, S1-S6, LP1-LP5

### 5.4.4.26 Project stakeholders - engagement & scanning

Effective consultation with relevant stakeholders can enable the successful adjustment/revision of project objectives, management of project expectations and help to speed up the delivery process. However, such engagement is less effective if undertaken once project objectives have been firmed-up - and can actually increase confrontation.

Determining stakeholder motives and legitimacy is often extremely difficult and may require specifically targeted outreach exercises. That said, successful MUTP planning and delivery agents are likely to be those that are characterised by a strong intuitive sense of the nature and agendas of stakeholder groups and networks - and the likelihood that these will change over time - where no formal stakeholder scanning mechanisms exist.

Stakeholder engagement presents opportunities to:
- identify those potential objections that can actually lead to improvements in project concept and design;
- produce decisions that are ".....fast, transparent, inclusive, robust and defensible and of a high quality."

There is general consensus regarding the need to work more closely/build trust with stakeholders to keep them fully informed throughout the project - so as to identify/anticipate potential issues going forward that could otherwise jeopardize the planning and delivery process.

**Commentary:**
- observations raised in the context of all three case studies.

**Typological Resonance**: RC, RS, S3-S8, LP1-LP5

### 5.4.4.27 Project stakeholders – winners and losers

It is frequently difficult to determine an appropriate balance between winners and losers - or even to fully appreciate both who are the winners and losers and the extent to which they have 'won' or lost'.

Methodologies for addressing such issues remain somewhat immature and/or are overly dependent upon rather coarse-grained and contextually insensitive mechanisms such as CBA. This would seem to suggest the need for an approach based on MCA.

The identification of winners/losers may remain uncertain for some considerable period (many costs/benefits will only emerge later) and will ultimately depend upon individual stakeholder's perspective.

Gains/losses are difficult to identify and quantify with any degree of precision.

| **Commentary:**<br>• observations raised in the context of all three case studies. |
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| **Typological Resonance**: RC, RS, S1-S6, LP1-LP6 |

### 5.4.4.28 Trust, consensus-building, co-operation and lobbying

The apparent levels of 'trust and transparency' present in regard to significant project dealings between key players will often be viewed differently by different stakeholder groups - who themselves are frequently suspicious negotiations that take place behind closed doors 'for commercial reasons'. Stakeholder trust is perhaps most often lost when changes in project objectives or its fundamental raison d'etre are not made clear. Such changes may be abrupt or even subtle but will still require full explanation to all affected stakeholders.

Stakeholders see consensus-building amongst key political and other influential decision-makers as critically important, especially at the project conception, planning and appraisal stages - i.e. before the project has gathered sufficient 'momentum' to have a life of its own. Thereafter, consensus building may become less significant when the project moves into its implementation stages. However, even at these later stages in the project lifecycle, consensus-building can assume significance when new initiatives or other important changes to the overall specification or objectives of the project are being contemplated.

| Commentary:<br>• interviewees observe that:<br>  ○ MUTPs require faith and political commitment, which needs to be sustained throughout their planning period in a consistent manner<br>  ○ the economic quantification of all benefits is impossible, which is why strong political vision and commitment is needed<br>  ○ there is a need to build up trust and confidence between the promoters, public bodies and the public through honesty and transparency. |
|---|
| **Typological Resonance**: RC, RS, S1-S8, LP1-LP5 |

### 5.4.4.29 Project lesson learning/sharing - institutional learning

Despite there being little evidence of institutional learning on the part of promoters and other stakeholders (notwithstanding the apparent abundance of relevant knowledge and experience amongst international consultants and responsible organisations overseas), interviewees noted the critical need for such learning – always provided it is applied in a context sensitive manner.

Professional silos and current project management thinking represent effective barriers to the introduction of a more holistic view of SD in project planning and delivery.

**Commentary:**

- there is no evidence to suggest that systems and processes have been established to disseminate post-project institutional learning from the UK case studies in any formal sense.
- however, interviewees indicate that such learning is disseminated in an informal manner as personnel move from project to project - the availability of relevant project-based experience by individuals is seen to be critically important.
- the need for institutional learning is well understood by interviewees, as is the need to apply knowledge obtained from this in a context sensitive manner. Experience levels are seen as critically important in this respect - i.e. the ability to correctly 'sense' what lessons/experiences drawn from past projects might be utilised in particular contexts.

**Typological Resonance**: RC, RS, S1-S6, LP1-5

## Glossary of Acronyms

| | |
|---|---|
| AoS | Assessment of Sustainability |
| BNRR | Birmingham Northern Relief Road |
| BR | British Rail |
| CBA | Cost Benefit Analysis |
| CBR | Cost Benefit Ratio |
| CoE | Centre of Excellence |
| CTRL | Channel Tunnel Rail Link |
| CW | Canary Wharf |
| DLR | Docklands Light Railway |
| DoE | Department of the Environment |
| DoT | Department of Transport (later, Department for Transport) |
| E&M | Electrical and Mechanical |
| EIA | Environmental Impact Assessment |
| EMS | Environmental Management System |
| EU | European Union |
| FoE | Friends of the Earth |
| H&SE | Health and Safety Executive |
| HLR | Hypothesis-Led Research |
| HMRI | Her Majesty's Railway Inspectorate |
| HST | High Speed Train |
| ICE | Institute of Civil Engineers |
| JL | Jubilee Line |
| JLE | Jubilee Line |
| LA | Local Authority |
| LCR | London and Continental Railways |
| LDDC | London Docklands Development Corporation |
| LRT | London Regional Transport |
| LT | London Transport |
| LUL | London Underground Limited |
| MBS | Moving Block System |
| MEL | Midland Expressway Limited |
| MTR | Mass Transit Railway (Hong Kong) |
| MUTP | Mega-Urban Transport Project |
| NAO | National Audit Office |
| NATM | New Austrian Tunnelling Method |
| NGO | Non-Government Organisation |
| Nimby | 'Not-in-my-back-yard' |
| NL | Northern Line |
| NPF | National Planning Framework |
| NPS | National Planning Statement |
| NVivo | A type of computer software |
| O&Y | Olympia and York |
| ORH | Original Research Hypothesis |
| ORQ | Original Research Question |
| PFI | Private Finance Initiative |
| PI | Public Inquiry |
| PPG | Planning Policy Guidance |
| PPH | Passengers per Hour |
| PPP | Public-Private Partnership |
| PHR | Pre-Hypothesis Research |
| RAMP | Risk Analysis and Management for Proejcts |
| RTPI | Royal Town Planning Institute |

| | |
|---|---|
| RUC | Risk, Uncertainty and Complexity |
| RUCC | Risk, Uncertainty, Complexity and Context |
| SEA | Strategic Environmental Assessment |
| SMI | Sense-Making Information |
| SDV | Sustainable Development Visions |
| TfL | Transport for London |
| WP | Working Paper |