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What Constitutes a successful Mega Transport Project?

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Decision-making in the Planning, Appraisal and Delivery of Mega Transport Projects (MTPs): Lessons for Decision-makers (OMEGA 2 Study).

- ❑ The OMEGA Centre at UCL was established amid concerns internationally about the capability of MTPs to be provided not only on time and within budget, but also to deliver the benefits they promise, especially given the significant scale of costs and uncertainties associated with their development.
- ❑ The fact that a transfer of management and financial risk from the public to private sector would introduce new disciplines and greater reliability for such projects has not been borne out on the scale expected has spawned additional concerns.

- ❑ The work of the CoE and its Academic International Partners sought to respond directly to these (and other) issues, albeit in the context of a research programme confined to the Developed World.
- ❑ The research was based on an international comparative study of 30 selected MTPs completed post-1990 in Europe, USA, Australia and the Asia-Pacific.
- ❑ The Study identified findings derived from both the written word and stakeholder narratives (300 key decision-makers and other deeply involved stakeholders) to establish the extent to which one set of findings reinforced/contradicted the other.
- ❑ The Final Report of this research programme was submitted to VREF on 1st October 2011

The overarching research question posed by the OMEGA 2 Study is: “what constitutes a ‘successful’ MTP in light of the aims of such projects and the anticipated challenges presented by the 21st Century.

- ❑ The OMEGA Centre contends that judgements of project ‘success’ goes well beyond the conventional project management concerns of completing such projects ‘on time, on budget and within prescribed specifications (often referred to as the ‘Iron Triangle’ considerations of project management) important though these remain.
- ❑ The OMEGA Centre contends that judgements of project ‘success’ *also* require consideration of a wider range of matters including:
 - the projects’ ability to meet objectives that emerge over time;
 - changing societal, political and environmental ‘visions’, values and priorities that evolve over time which further alter expectations of MUTPs;
 - different values, priorities and expectations prevalent in different development and cultural contexts.

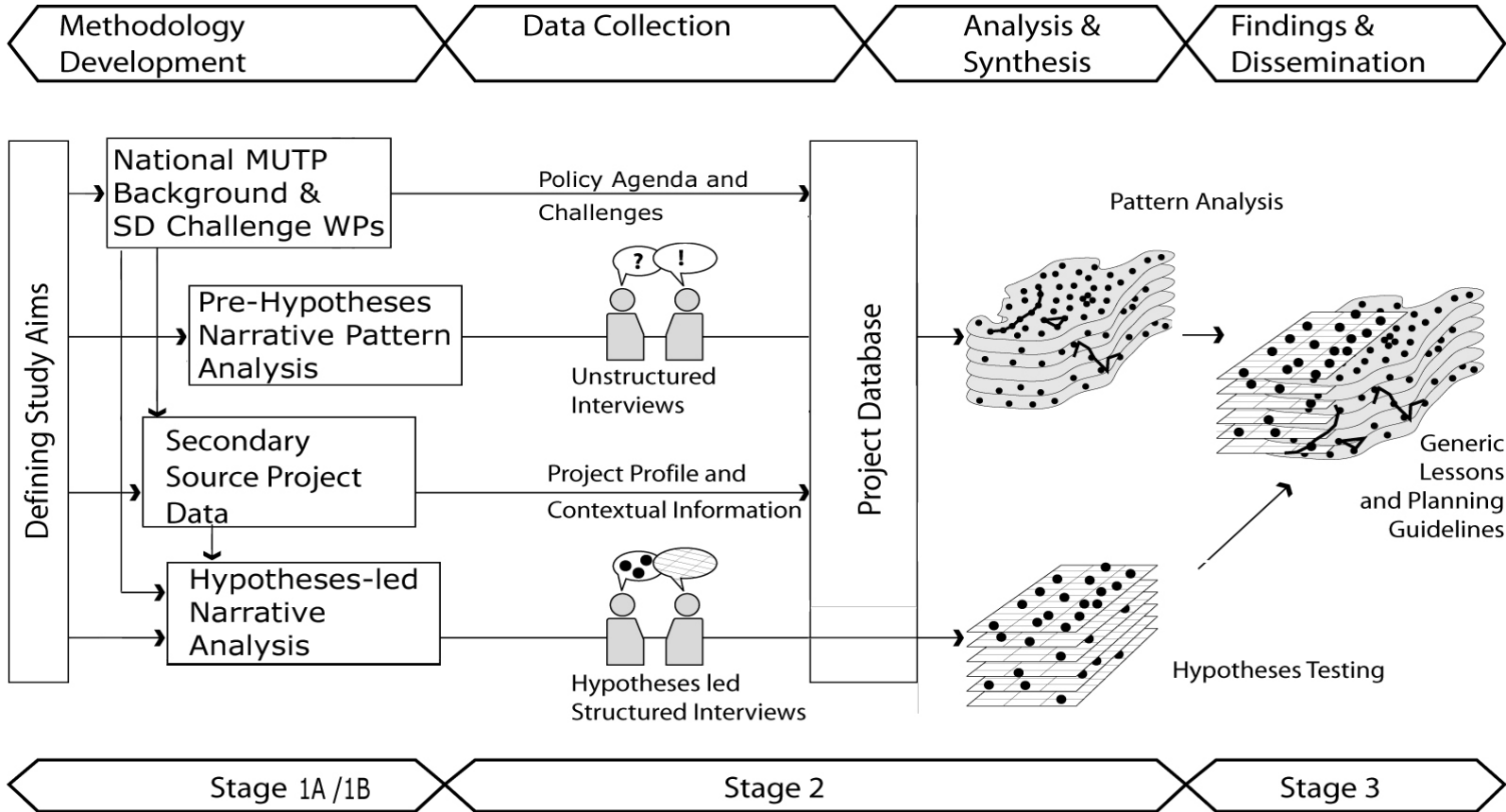
❑ Overall research questions (ORQs):

- Establish *what constitutes a 'successful' mega urban transport project (MUTP)*
- Ascertain how well *risk, uncertainty and complexity have been treated in the planning, appraisal and delivery of such projects*
- Establish the *importance of context* in making judgements regarding above

❑ Clarification questions:

- Decide what constitutes a MUTP - what are its boundaries and typologies?
- Establish which stakeholder perspectives are to be investigated & how
- Ascertain how one identifies generic & context-specific judgements of success and the lessons that can be drawn from this.

- ❑ Appreciation of extent to which case study MUTPs meet planned objectives and contribute to sustainable development visions
- ❑ Provision of generic and context-specific insights into how and why these MUTPs perform as they do
- ❑ Offer insights into the treatment of risk, uncertainty, complexity and power of context in policy-making, planning and management of MUTPs - and how these differ from one regional or national context to another
- ❑ Provision of insights into whether current planning, appraisal and evaluation methods in MUTP studies are suited to the demands of the 21st century
- ❑ Establish principal lessons' for key project stakeholders – with particular emphasis on decision-makers responsible for MUTP planning, appraisal and delivery.



□ Consistently applied to 30 MUTP case studies:

- **18 in Europe** - 3 each in France, Germany, Greece, Holland, Sweden, UK (undertaken with the assistance of: Ecole Nationales Ponts et Chaussees, Free University of Berlin, University of Thessaly, University of Amsterdam, Lund University & UCL);
- **6 in Asia** - 3 each in Japan and Hong Kong (undertaken with the assistance of Tokyo Institute of Technology & University of Hong Kong);
- **3 in Australia** (undertaken with assistance of University of Melbourne); and
- **3 in USA** (undertaken with assistance of New York University).

| Country | Mega Transport Project | Project Type |
|--------------------|---|--------------------------------|
| UK | Channel Tunnel Rail Link (CTRL) | High speed rail |
| | Jubilee Line Extension | Metro rail (subway) |
| | M6 Toll Road | Inter-urban toll motorway |
| France | Météor Rail: Saint Lazare – Olympiades, Paris | Metro rail (subway) |
| | TGV Med: Valence – Marseille | High speed rail |
| | Millau Viaduct: Millau, South France | Road bridge (on motorway) |
| Greece | Rion-Antirion Bridge: Rion – Antirion | Road bridge |
| | Athens Metro: Sepolia – Dafni & Monastiraki – Ethniki Amaryna, Athens | Metro rail (subway) |
| | Attiki Odos, Athens | Inter-urban toll motorway |
| Germany | Neubaustrecke: Cologne-Rhine/Main | High speed rail |
| | Tiergarten Tunnel: Berlin | Urban motorway and rail tunnel |
| | BAB20 Motorway: Brandenburg, to Schleswig-Holstein | Motorway |
| Netherlands | HSL Zuid | High speed rail |
| | Randstadrail | Light rail and bus |
| | Beneluxlijn | Metro rail (subway) |

| Country | Mega Transport Project | Project Type |
|-----------|---|--|
| Sweden | Oresund Road, Rail, Bridge/Tunnel Link: Malmo-Copenhagen | Road and rail, bridge and tunnel |
| | Sodra Lanken Road Tunnel: Stockholm | Urban motorway tunnel |
| | Arlanda Rail Link: Stockholm Airport to Stockholm | Airport express rail link |
| USA | Airtrain: JFK Airport: New York City | Light rail airport link |
| | Alameda Rail Link: Los Angeles (Port – downtown) | Freight rail line |
| | Big Dig Road and Tunnel Links: Boston | Urban road tunnel and bridges |
| Australia | City Link, Melbourne | Urban toll motorway (with tunnels and elevated sections) |
| | Metro Rail, Perth | Inter-urban rail line |
| | Cross City Tunnel, Sydney | Tolled urban road tunnel |
| Hong Kong | Western Harbour Crossing: Hong Kong Island – Kowloon | Tolled urban road tunnel |
| | Airport Rail Links: HK Central – Chek Lap Kok Airport | Airport express rail link |
| | KCRC West Rail Link: Tsuen Wan – Yeung Long | Urban rail line |
| Japan | Metropolitan Expressway: Nishishinjuku Junction – Kumanochi Junction, Tokyo | Tolled urban road tunnel |
| | Shinkansen High Speed Rail Link: Kagoshima - Chuo – Nakata | High speed rail |
| | Oedo Metro: Hokomae – Hikarigaoka, Tokyo | Metro rail (subway) |

- ❑ In response to the above key research questions and hypotheses, the OMEGA 2 Study yielded a number of significant contributions to the field of MTP development
- ❑ These contributions take the form of lessons and suggested stakeholder actions, which help better define arenas of MTP activity. The UCL OMEGA Team consider that these lessons and actions should be placed at the heart of future decision-making *if* projects are to meet the growing and changing aspirations for achieving future sustainable economic, social, environmental and institutional development.

Critical lessons and observations on project planning, appraisal and delivery covering different perspectives concerning:

- ❑ MTP 'success and failure',
- ❑ the need for strategy,
- ❑ engagement with project stakeholders,
- ❑ the treatment of trust and transparency,
- ❑ access to relevant information,
- ❑ approaches and techniques for appraisal,
- ❑ appropriate governance and regulatory frameworks,
- ❑ the power of 'context' and why context matters,
- ❑ the treatment of risk, uncertainty and complexity in decision-making, and
- ❑ sustainability concerns for MTP planning, appraisal and delivery, and
- ❑ importance of/ need for lesson-learning and sharing.

A series of recommended responses to these lessons and observations by key stakeholders and other MTP practitioners, covering such matters as why/how MTPs should:

- be treated as 'agents of change',
- be seen as 'open systems',
- be considered as 'organic phenomena',
- be properly framed,
- have their planning, appraisal and delivery made to be context-sensitive,
- be made sustainable,
- engage with a whole variety of project stakeholders,
- employ proper institutional, policy and regulative support, and
- actively pursue lesson-learning and sharing.

- the simple question of “what constitutes a ‘successful’ MTP” demands many varied and interrelated responses. These particularly include taking a view on: understanding how well risk, uncertainty and complexity have been treated in decision-making and acknowledging the importance of context, most particularly, in making (sometimes changing) judgements about ‘success.’
- The OMEGA research programme most importantly concludes that to perpetuate the practice of planning, appraisal and delivery of MTPs principally around traditional project management concerns as a basis for judging ‘success’ is not only highly misleading but also promotes additional major risks and uncertainties to the sustainability of such investments.

- The research findings suggest that the perpetuation of restrictive 'business case' judgements regarding the 'success' of MTPs that essentially de-emphasise 'non-business case' considerations and achievements, devalues the contributions of planners, project managers and engineers who seek to take a more holistic approach to decision-making.
- This in turn, it is argued, deprives civil society of many opportunities to use such projects to transform the economies, territories and cities they serve in line with more sustainable outcomes. Conversely, the perpetuation of excessively narrow planning, appraisal and delivery practices can also hide the broader and long-term damage created by MTPs by excluding parameters not considered within the scope of 'iron triangle' concerns.

- The justification for the adoption of a wider and more strategic stance to MTP decision-making rests in part on the basis that many MTPs are in fact not projects at all but programmes of projects (sometimes programmes of MTPs) that become very significant 'agents of change'. This is deemed especially pertinent for very complex projects/ programmes that are intended to have strategic national and trans-national development functions.