Preparing to fail by failing to prepare: The Paradox of Relational Contracting in the Planning, Appraisal and Delivery of UK's Critical Infrastructure

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#### Outline

- The UK's critical infrastructure will be delivered over the coming decades through the vehicle of Major Programmes, (mega projects, giga projects, tera projects)
- They are equivalent in scale to the GDP of nations and matter strategically to countries as well as multi-national corporations
- However, they have the tendency to destroy economic value rather than create it, which demands that policy makers design a new paradigm for their appraisal, management and delivery





#### Major Infrastructure Programmes in Context

#### From 'Poster Boy' to 'Problem Child'

- Costs over-runs and benefits shortfalls are typical for major programmes and undermine viability
- Root causes of failure are often overlooked ignoring politics, power and the interaction of complex actor networks looking for more 'rational' explanations
- Major Programmes are "emergent" and unknowable and interact in unpredictable ways within their context, environment and social setting, placing significant challenges for their management

Project	Cost Overrun (%)
Suez Canal, Egypt	1,900
Scottish Parliament Building, Scotland	1,600
Sydney Opera House, Australia	1,400
Montreal Summer Olympics, Canada	1,300
Concorde Supersonic Aeroplane, UK, France	1,100
Troy and Greenfield Railroad, USA	900
Excalibur Smart Projectile, USA, Sweden	650
Canadian Firearms Registry, Canada	590
Lake Placid Winter Olympics, USA	560
Medicare transaction system, USA	560
Bank of Norway headquarters, Norway	440
Furka Base Tunnel, Switzerland	300
Verrazano Narrow Bridge, USA	280
Boston's Big Dig Artery / Tunnel project, USA	220
Denver International Airport, USA	200
Panama Canal, Panama	200
Minneapolis Hiawatha light rail line, USA	190
Humber Bridge, UK	180
Dublin Port Tunnel, Ireland	160
Montreal Metro Laval extension, Canada	160
Copenhagen Metro, Denmark	150
Boston - New York - Washington Railway, USA	130
Great Belt Rail Tunnel, Denmark	120
London Limehouse Road Tunnel, UK	110
Brooklyn Bridge, USA	100
Shinkansen Joetsu high-speed rail line, Japan	100
Channel Tunnel, UK. France	80
Karlsruhe - Bretten light rail, Germany	80
London Jubilee Line extension, UK	80
Bangkok Metro, Thailand	70
Mexico City Metroline, Mexico	60
High-speed Rail Line South, The Netherlands	60
Great Belt East Bridge Denmark	50

Large-scale programmes have a calamitous history of cost over-run (Flyvbjerg, 2014)



#### **Characteristics of Major Infrastructure Programmes**

- Major Programmes are typically massive indivisible artefacts with investment taking place in waves of many billions of pounds
- They exhibit risk because of their long planning and appraisal horizons and complexity induced by very large numbers of stakeholders, interfaces and non-aligned interests
- Major Programmes are hard to 'pin down' because innovations proliferate, group boundaries become uncertain and the range of entities to be managed fluctuates from phase to phase and cannot be limited in advance





#### **Characteristics of Major Infrastructure Programmes**

- Major Programmes are unique phenomenon and are <u>not</u> scaled up projects in 'controlled environments' (whatever lawyers may think)
- They exhibit unquantifiable risks, high emergence, fluid actor networks and uncertainty in unstable "open systems"
- To be successful they require co-operative and collaborative social behaviour supported by integrative management practices for the management of risk, uncertainty and emergence



Programme organisation in context showing stakeholder interchanges at 'open system' boundary inspired by "the integration of systems" (Davies & Hobday, 2005, p. 43 and author)



#### How are Major Programmes approached?

#### A view from the UK's National Audit Office

- Strong collaborative relationships go hand in hand with good programme performance"
- Government departments and industry should jointly consider the balance of contractual terms to underpin the behaviours likely to lead to successful programme outcomes"
- BS 11,000 (collaborative business relationships) supports this view stating benefits in time, cost and the management of risk





#### A sense of Déjà Vu

- Collaborative and relational methods were demanded twenty years ago, but have not been adopted – why?
  - Constructing the Team (Latham)
  - Trusting the Team (Bennett & Jayes)
  - Rethinking Construction (Egan)
  - Accelerating Change (Egan)
- Presently, less than 12% of programmes are based on truly relational methods despite the ubiquitous use of the New Engineering Contract (NEC3)
- The industry appears wedded to Classical Contract Law which seeks risk transfer rather than risk management





#### Sir John Egan



#### Contract Strategy and the Front End Phase

- Contract strategy and approach significantly impacts how risk is managed, particularly at the front end phase of Major Programmes
- The front end phase is widely acknowledged to be the most important time for a Major Programme. How this phase is managed is of critical importance for the ultimate delivery of the planned outcomes
- The impact of the contract strategy on benefits realisation is overlooked due to an undue (or even singular) focus on risk transfer at the expense of the management of complexity, emergence and risk





#### Contingent issues pertaining to contract strategy

- Contract strategy should be contingent upon risk relative to characteristics and context
- If this were truly the case, one may expect to see a greater representation of Relational Contracting to support collaboration, but this is not the case
- The industry needs a better appreciation and understanding of Relational Contracting as part of the solution for the management of complexity, emergence and risk





#### The Relational Theory of Contract

- The term was first coined by Ian Macneil who argued the shortcoming of Classical Contract Law's ability to bound bargains of great uncertainty and complexity over long horizons
- Such contracts can only ever be performed if the parties co-operate
- Contracts for Major Programmes therefore should be far more concerned with the encouragement of co-operative social and political behaviour than transferring a risk that cannot be transferred





## The limitations of Classical Contract Law for Major Programmes

- To ensure the delivery of the planned outcomes, emergence and uncertainty needs managing
- The delivery of the planned outcomes is more probable if organisational stability is achieved, as the actor networks are often dynamic and unstable
- However, Classical Contract Law cannot fully describe what is unknowable and therefore cannot possibly be fully contingent for Major Programmes





#### The Classical, Relational continuum

- For Major Programmes, joint performance is the emergent outcome of multiple agent interaction which is difficult for classical contracts to describe
- Major Programmes are impossible to describe 'upfront' and so requirements elicitation is emergent, forced by collaboration not suited to "pre-designed" governance or standard contract types
- The contracting approach has to be sufficiently flexible to support an "ongoing bargain" and handle asymmetrics of power to ensure that front end value creation is not eroded through execution



Shenhar and Divir's 'Diamond Model' modified for characteristics of contract type (Shenhar & Dvir, 2007 and author)



#### Mitigating sources of entropy

- Classical Contract Law is based on the premise of self interest and individual utility maximisation and opportunism
- Major Programmes take place over too long a time horizon for this to be a rational response
- Whereas relational exchange creates circumstances where the long run individual economic interests of each party <u>conflict</u> with any short run desire to maximise individual utility

"...somewhere along the line of increasing duration and complexity, trying to force changes into a pattern of original consent becomes too difficult and too unrewarding to justify the effort and the contractual relation escapes the bounds of the classical system toward what can be achieved through the political and social processes in the relation, internal and external" (Macneil)



# Why has Relational Contracting not diffused given so much historic and more recent policy intent?

- Diffusion of Innovation Theory may help support an understanding of why Relational Contracting has not become ubiquitous
- Top down policy intent into a fragmented mis-aligned industry has not had the intended impact
- As a result, Major Programmes continue to take place amidst a fragmented, adversarial industry culture that perpetuates a flawed and failing model



Variables determining the rate of adoption of innovations (Rogers, 2005, p. 222)



#### How can we recognise the interdependencies?





#### Introducing the research to understand <u>why</u> Relational Contracting is not diffusing

- Seventeen leading figures were interviewed
- The participants represented:
  - The practioner community
  - Lawyers
  - Financiers
  - Policy makers
  - Sponsors
  - Procurement professionals

Interviewee Reference	Organisation	Seniority	Professional Group	Major Programmes Experience
Participant 01	Programme Management Consultancy	Partner	Major Programme Practitioner	Yes
Participant 02	Large International Law Firm	Partner	Construction Lawyer	Yes
Participant 03	Programme Management Consultancy	Partner	Major Programme Practitioner	Yes
Participant 04	Programme Management Consultancy	Partner	Major Programme Practitioner	Yes
Participant 05	Programme Management Consultancy	Partner	Major Programme Practitioner	Yes
Participant 06	Programme Management Consultancy	Partner	Procurement Professional	No
Participant 07	Programme Management Consultancy	Partner	Procurement Professional	No
Participant 08	Aviation Body	Director	Client	Yes
Participant 09	Fund	Director	Major Programme Financier	Yes
Participant 10	Fund	Director	Major Programme Financier	No
Participant 11	Programme Management Consultancy	Partner	Major Programme Practitioner	Yes
Participant 12	Central Government Department	Director	Central Government Representative	Yes
Participant 13	Programme Management Consultancy	Director	Major Programme Practitioner	Yes
Participant 14	Train Operating Company	Managing Director	Client	Yes
Participant 15	Underground Metro Body	Director	Client	Yes
Participant 16	Leading Construction Chambers	Queens Council	Construction Lawyer	Yes
Participant 17	Leading Construction Chambers	Barrister	Construction Lawyer	No



# Participants were well distributed across professional groups and market segments

Cases: Professional Group – Nodes by Attribute Value (author)

Cases: Organisation – Nodes by Attribute Value (author)



#### CASES : PROFESSIONAL GROUP - NODES BY ATTRIBUTE VALUE







The characteristics of Relational Contracting support collaborative approaches for better management of complexity, emergence and risk



Relational Contracting is perceived by industry as too complex



Relational Contracting's weak adoption is self perpetuating



Power matters! Lawyers, financiers and procurement professionals have the greatest influence on contract strategy, yet no delivery accountability



Sponsors (encouraged by their primary advisers) avoid risk management preferring risk transfer (even though impossible to achieve for Major Programmes)



The lack of trust inhibits the adoption of relational methods – who do I blame?



Short term decisions in support of profit taking by project finance, supply chain shareholders and others mitigates against long term incentives



3 Relational Contracting's lack of a quantified benefits case will impede its adoption speed



Relational Contracting is inconsistent with an industry culture conditioned by selfinterest and short termism



The low volume of Relational Contracting inhibits investment in new capability which in turn perpetuates weak adoption





Promotional policy efforts will repeatedly fail to hasten the speed of adoption of Relational Contracting until the industry's custom and practice is challenged



Partnering and Alliancing methods lack a theoretical basis or any established "practices" for their management and control



#### ATTITUDES TO RISK TRANSFER AND EMERGENCE IN MAJOR UK INFRASTRUCTURE PROGRAMMES (CONSTRUCT TABLE WITH BLENDED TEXT DESCRIPTIONS, INSPIRED BY GRAEBNER, 2004)

Cases: Professional Group	Accountability for delivery of outcomes	Impact on contract strategy	Is the phenomena of emergence recognised?	Can risk be transferred?	Potential consequences for major programmes
Major Programme Practitioner	YES	LOW	YES "Any major programme is going to have those 'progressive fixity' elements to it which make it difficult to baseline." (P.3)	NO "No client can ever transfer a risk ultimately. Its just naive to think so." (P.1)	Active management of risk and uncertainty delivers positive outcomes.
Client	YES (DEVOLVED)	MODERATE	NO "We always take the attitude that variations / changes are bad." (P.14)	YES "We drive out risk through contracts." (P.14)	Claims and litigation.
Construction Lawyer	NO	HIGH	NO "We need to understand the rights and obligations of the parties." (P.16)	YES "A tightened contract can ensure that very little risk passes back to the employer." (P2)	Claims and litigation.
Procurement Professional	NO	HIGH	<b>NO</b> "Notwithstanding there may be an emergent element, there are always going to be parts of what you contract that would be fairly certain." (P.6)	YES "Compliance and governance should not be transgressed." (P6)	Benefits not realised if process dominates outcomes. Opportunity for introduction of appropriate risk management is missed.
Major Programme Financier	NO	HIGH	NO "Investors are looking for certainty." P.10 "No Bank in the UK was ever going to touch that (a major programme), the size, complexity and commercial risk." (P.10)	YES "I'm not sure we've found the right contractual framework to collaborate." (P.10)	Introduction of international investors and foreign owned (state) banks with less aversion to risk.
Central Government Representative	NO	HIGH	YES "Success for a government project is delivery of policy intent. That's why we do it. Ninety per cent of government policy is delivered by projects."	YES "There is a fear of the media." (P.12) "Industry was raping government." (P.12)	Lack of trust inhibits formation of the temporary organisation as a high performing team as the temporary organisation is actually only a series of "arms length" transactions.

Attitudes to risk transfer and emergence – Construct table with blended text descriptions inspired by Graebner, 2004 (author)



#### **Summary and Conclusion**

- Relational Contracting will not diffuse until Major Programmes are recognised as unique phenomenon <u>not</u> as "scaled up" projects in controlled environments
- Classical Contract Law cannot capture a Major Programme's unquantifiable risks, high emergence and fluid actor networks
- The UK infrastructure and construction industry is slow to innovate in many areas of practice and is highly fragmented making any effort to modernise very difficult

"...we cannot prepare to fail by failing to prepare and the paradox of Relational Contracting should be tackled with some urgency by policy makers in order to grasp the opportunity the present wave of infrastructure in the UK presents"



#### Appendix 1

Influence Diagram



#### Appendix 2

References

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