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The Leadership and Governance of Megaprojects

CID Technical Report No. 3/2012

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April 2012

Executive Summary

This report consolidates the insights from two events – a discussion dinner and a half-day workshop - organized by the Centre for Infrastructure Development (CID) in London. The motivation for producing these events stems from a recognition that engagement between management and organization scholars and industry in the broad arena of new infrastructure development has been sorely lacking, and in particular there has been a lack of engagement between the two communities on the issues of leadership and governance for megaprojects.[1]

The events brought together academics and practitioners, including senior leaders from the public sector, public and private-led mega project organizations, and construction industry suppliers. With respect to governance, the debates focused on four of its key functions: 1. help define who the ultimate client of the megaproject is and who has decision-making authority on behalf of that client; 2. empower and help the megaproject executive team whilst asking them to explain the rationale for their actions in order to sustain the sponsors' trust and confidence; 3. make executives accountable for their decisions; and 4. enable funders and other key stakeholders to exercise control and oversight over the executives. Crucially, unlike corporate governance, megaproject governance appears reluctant to delegate decision-making autonomy to executive leaders. This insight matters as it suggests that models of leadership and governance for megaproject delivery should depart from a notion that leadership is shared between the principal(s) that governs and the executive agent that commands delivery.

The two key leadership themes that emerged were the successful traits of leadership teams with emphasis on openness, sincerity, consistency, and communication; and critical leadership practices with emphasis on a willingness and determination to engage with key stakeholders at the first available opportunity in the development lifecycle, as well as keenness to celebrate and recognize the successes and achievements of the delivery teams.

As a backdrop to this expert-led discussion, the CID research team presented preliminary insights from its own in-depth empirical study into megaprojects. This discussion focused on reframing the megaproject debate away from the current negative rhetoric of strategic misrepresentation, technical incompetence, and optimistic bias by examining the longitudinal processes involved in bringing a megaproject through to fruition. The core lessons from the research thus far have been that, first, the megaproject leadership function is fundamentally different from the megaproject management function; and second, that megaprojects rely on different leadership teams, each with a different combination of skills and capabilities tailored to their task, at different periods of the infrastructure development lifecycle. The challenges that have emerged from the CID's research thus far are: 1. understanding how best to handle the succession between the leadership teams such that the right people are in place at the right time to meet the needs of the megaproject; and 2. understanding how the governance can help the executive leaders deliver high-performing projects. Importantly, discussions around high-performance megaprojects can only be meaningful if they are grounded on a comprehensive definition of performance - another challenge in its own right that requires combining the quality of delivery with that of operations, the ultimate legacy.

[1] A capital programme comprising a number of interrelated projects delivered with some degree of concurrency

The Leadership and Governance of Megaprojects

1 Introduction

This technical report summarises key insights that emerged from two interrelated and expert-driven events organised by the Centre for Infrastructure Development (CID) in March 2012:

a) A discussion dinner *on The Governance and Leadership of Megaprojects* with invited guest speaker Sir John Armitt, Chairman of the Olympic Delivery Authority (ODA). The dinner brought together a diverse group of around 20 people including executive directors from construction industry suppliers; leaders of public sector organisations including Crossrail, ODA, the non-executive Chairman of Infrastructure UK, and the Government Chief Construction Advisor; the MBS Dean and CID Academic Director; and the chairman and chief executive of Constructing Excellence. The dinner was hosted by Pinsent Masons at its London headquarters on March 27 (details in annex).

b) A half-day workshop on *The Governance and Leadership of Megaprojects* that brought together academics and practitioners. The workshop opened with a keynote speech from Sir John Armitt. This was followed by Professor Nuno Gil introducing CID's on-going research stream *Mega Projects: The Relay Race Challenge*, and a thematic discussion led by speakers with leadership functions across three current megaprojects: Martin Buck, Commercial Director of Crossrail Ltd; Howard Shiplee, former Construction Director at the Olympic Delivery Authority; and Julian Foster, BAA Heathrow Eastern Campus Programme Director.

2 Background: Leading and Governing Megaprojects

Sir John Armitt opened the two events by imparting some key lessons drawn from across his prestigious career working on megaprojects, *which we define as a capital programme comprising various interrelated projects delivered with some degree of concurrency*, during which he assumed various leadership roles both in client organisations, e.g., chief executive of Network Rail, ODA chairman, and in suppliers, e.g., chief executive of the Costain Group.

On governance, Sir John started by mentioning the old adage that *to govern is to choose*, pointing that the role of any megaproject governance is primarily to exercise oversight and control over key choices that invariably face the project executive team over time. More specifically, John argues effective governance requires addressing three fundamental points:

- First, whilst arguably running a mega project is less difficult than running a mega business as one expects the goals to have been identified a priori, one cannot take this for granted. Rather, at the front-end, project executives working on behalf of the ultimate client(s) together with the client(s) need to collectively discuss and agree what really matters and what the key issues or decisions are. To this purpose, the project leaders also need to involve the key stakeholders upfront, e.g., future operators, local authorities, customers, and work with them to jointly establish the prime objectives and define a strategy, or put differently, to ask the necessary 'what, how, and why' questions, and

challenge the responses. Critically, these key questions may differ across projects. For London2012, for example, the first key issue was to get the timing right; for a nuclear programme, it might be to get planning consent and political support. Early stakeholder engagement, of course, creates tensions between the parties involved as it is unlikely all the stakeholders' interests are aligned upfront. But this conflict needs to be framed as healthy and essential to challenge dominant thinking, uncover hidden assumptions, and prompt serious consideration of the ultimate legacy that the megaproject should leave.

- Second, governance needs to resolve the question "who is the ultimate client?" If left unresolved, the project is likely to fail. Whilst this is far from being a trivial question, John argues those who finance the project are the *ultimate client*; where the money comes from ultimately drives project governance; or put differently "who pays calls the tune".

- And third, John argued governance is about resolving "who has authority on behalf of that body [client]?" This can be a thorny issue whenever the client is a multi-headed organization because the different clients may feel entitled to be in control and jealous of one another, and governance is bound to become very difficult if they all insist in control.

Turning to leadership, Sir John emphasised some of the traits of megaproject leadership needed to face up the challenge of managing a large group of mutually-dependent parties including the different levels of the delivery agent, delivery partners, suppliers, funders, regulators, operators, and public. John singled out managing design change as perhaps the most difficult leadership task in that it requires articulating a vision, and then converting it into a design definition, and making everyone stick to it unless there are compelling reasons to change. Whilst admitting being unclear as to how important an individual's personality is to become an effective leader, he confided relating to the idea that a good leader is someone people barely knows s/he is there ('silent leadership'). More broadly, John highlighted the importance of *sincerity, consistency, and transparency*. In his view, these behavioural traits are needed both in articulating the project vision and aims, as well as in communicating them effectively to the key stakeholders. He concluded by offering some recommendations:

- *Demonstrate sincerity*, which may require sometimes being almost brutal. and acknowledging the leader may not have all the answers, and thereby needs to observe and ask questions
- *Be open*, which requires publishing clear short- and long-term aim and objectives regularly
- *Celebrate success* by recognizing achievements in order to make people feel involved
- *Make a major effort to listen*; "we've two ears and one mouth - use them in that proportion", John quipped; listening is necessary to tailor responses and make them relevant to the audience in question. Leaders that are effective listeners can create an environment of empathy in which all parties have mutual respect and understanding.
- *Delegate whilst creating accountability*. There is no way the chief executive can be effective unless tasks and decision-making power are delegated both upstream to the chairman and downstream to the executive team without diluting accountability.

3 CID Research: Megaprojects as Relay Races

The contemporaneous discourse surrounding megaproject cost escalation, of both the media, policy makers and some lead scholars, is mired with suspicions of technical and managerial incompetence - or worse still - foul play. Supporters of this rhetoric posit that the scheme promoter has incentives to strategically misrepresent the true cost of project delivery as it helps to maximize chances to win endorsement from potential funders. Other extant explanations are no less depressing, including the suggestions that megaproject leaders are either incompetent, suffer from chronic optimism bias, or are victims of the sunk cost fallacy.

This negative rhetoric has motivated a research team comprised of Professor Nuno Gil, CID's academic director, and Colm Lundrigan, PhD student, to undertake a deep empirical investigation of the governance and leadership of three current mega infrastructure projects - London's Crossrail, London 2012 Olympic Park, and BAA's Heathrow Terminal 2 - all of which seem to suffer from the same ill-fate in terms of cost escalation on a cursory analysis. The ultimate aim of the study is to uncover managerial and organizational insights for enabling high-performing megaproject development and delivery. Data collection has included over 60 in-depth interviews (with the senior megaproject leaders, client project managers, and representatives of delivery partners, designers, and constructors), site visits, and a wide range of archival data. By playing the empirical insights against extant literature in megaprojects and theory in emergent organizations and strategy, the research team is currently building an original conceptual model of the lifecycle of a mega infrastructure project. The longitudinal model, well-grounded on the analysis of the three cases, aims to illuminate the drivers for project cost escalation as well as to address key managerial challenges facing megaproject leadership teams and governance structures over project time.

Preliminary results of this research suggest that megaprojects can be better understood if framed as 'relay races' in which the control of the megaproject passes like a baton between leadership teams, each one exhibiting a particular set of competences and skills. Figure 1 illustrates a four-phase development lifecycle: inception, gestation, delivery, and operations.

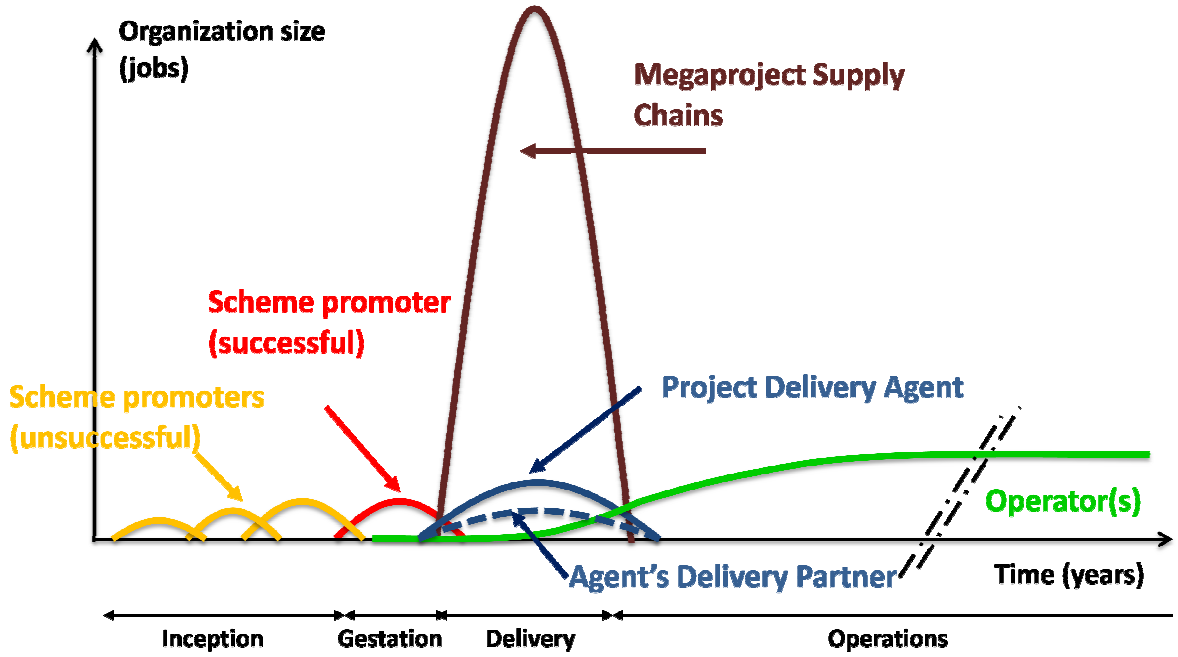

Figure 1 – A conceptual model of the lifecycle of a mega infrastructure development

***Inception*:** During the inception phase, an incipient idea to develop a megaproject, perhaps initially bounced off amongst a restricted number of public and private organizations acting as lobbyists, succeeds to gain momentum inside a potential sponsor organization (the 'principal') to the extent the sponsor (or group of sponsors) will agree to create a scheme promoter. The promoter organization will be in charge of furthering the idea, developing it into a comprehensive scheme, and seek endorsement for the scheme from sponsors, planning authorities, and relevant regulatory authorities. Typically, the scheme promoter begins life as an emergent organization unit within a permanent sponsor organization, with limited technical and commercial capabilities in-house, opting instead to buy them from specialized firms. The sponsor entity needs to allocate a budget to fund the promoter's core activities including articulating the scheme's business case, defining the design requirements, developing a conceptual design, estimating a project delivery budget and timescale, and defining a funding strategy. The ultimate goal of the inception stage is to build a compelling narrative that succeeds in gaining both the sponsor's financial commitment that capital will be made available to deliver the project in a future budget, as well as in gaining outline planning permission. To this purpose, the promoter needs to lobby for and negotiate the scheme, including the outline definition, project budget, and delivery plan with a complex ecology of actors, including the future sponsors, key stakeholders, and the public in general. Unsurprisingly, in the pursuit of this goal, the design concept and delivery plan will evolve significantly both organically and strategically as trade-offs are sought and multiple deals are hammered out to get the scheme approved and secure the promise of committing capital for delivery. A recurring characteristic of this stage, demarking it from the follow-up stage (gestation), is that inception schemes invariably fail to gain sufficient political and/or financial support leading the sponsor to terminate the venture. An inception scheme may lie

dormant for years until eventually it reemerges under new leadership and in a different form; and still without any guarantee of success in gaining endorsement and in securing the capital.

***Gestation*:** In marked contrast to the inception phase, the scheme promoter leading the inception stage will succeed to craft and flesh out a 'narrative' for the scheme encompassing all the key structural elements (concept design, funding scheme, project delivery timescale and budget, delivery plan, cost-benefit analysis, planning permission) that will succeed to gain endorsement by the key relevant stakeholders including the funding bodies, relevant government agencies, local authorities, and future operators. In a democratic regime, decisions to give the go-ahead to a mega project can be expected to be mired in controversy centered on disagreements about how to best quantify costs and benefits. Disagreements can be expected to be sharp as different groups will tend to operate under fundamentally different beliefs, planning horizons, and hidden assumptions, which make decisions to go ahead largely the outcome of judgment calls by those that hold the power to sanction the scheme, e.g., elected politicians, company board. Technically, the gestation process is not dissimilar from the inception development processes, but the outcome is the opposite. Success in getting the sponsor to commit capital to project delivery does not necessarily mean that the promoter's strategy at gestation was in some way 'superior' to that adopted previously during the inception stage. But rather that the gestation strategy was an appropriate one in that given time and in that given context, although the context may have changed radically since the inception stage. Crucially, the promoter-led early negotiations at gestation with relevant stakeholders, and which are instrumental to gain political and financial endorsement for the scheme and support judgment calls, will frame the future institutional and organizational context under which the megaproject will be delivered, governed, and eventually operated.

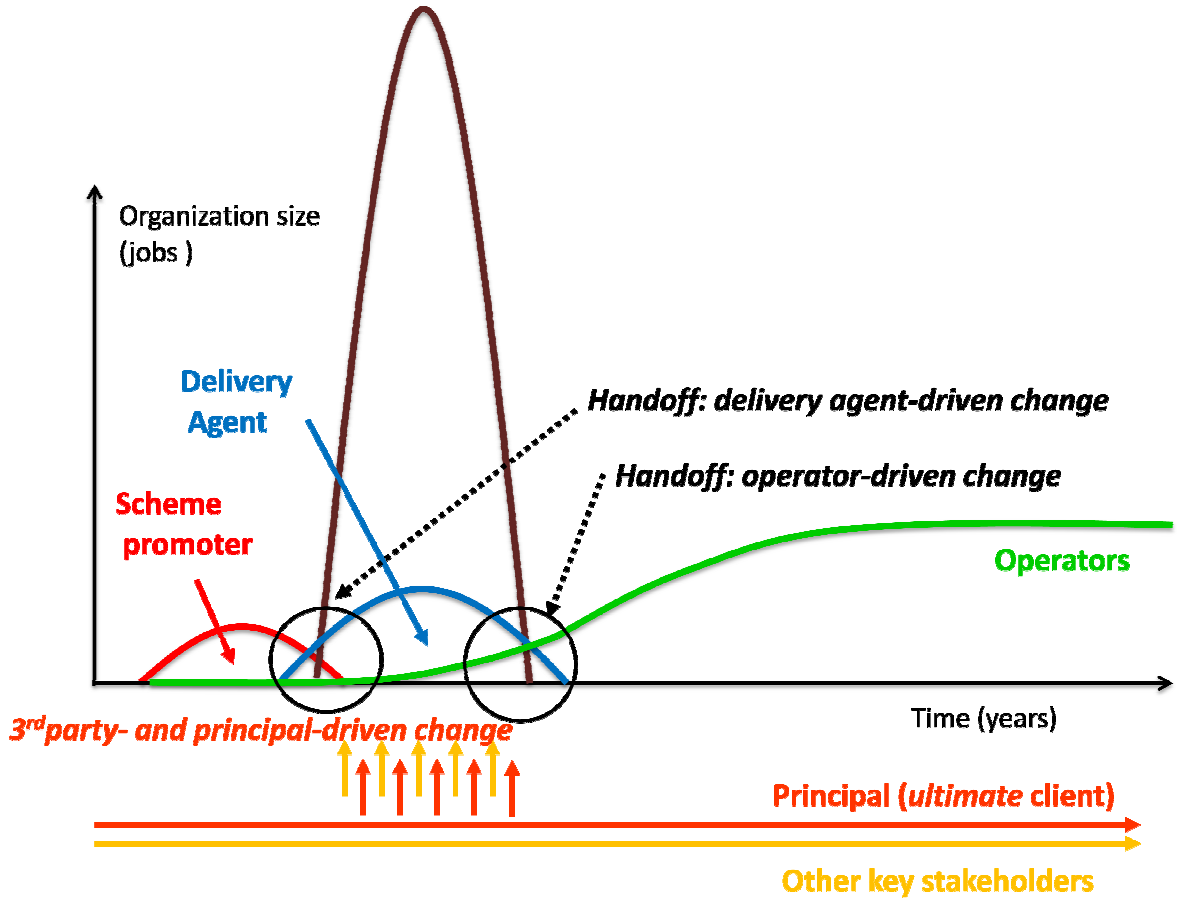

Figure 2- Understanding Change over a the Infrastructure Development Life-cycle

***Delivery*:** Having gained financial commitment from the project sponsor(s), and endorsement for the outline concept from relevant parties, the scheme promoter (e.g., the London2012 bid team, the Crossrail team pursuing Royal asset, the BAA team negotiating the capital investment for the next quinquennium) typically must cede control over the megaproject to a delivery agent (albeit seen as the 'client' by the supply chain firms). This agent needs to have the capabilities to manage both the principal or ultimate client (the permanent organizations funding the project), third-parties in a position of power and legitimacy to influence the project strategy and implementation plan, as well as the fragmented supply chains that will ultimately design and build the megaproject output. However, as Figure 2 illustrates, much can change during this critical handover between gestation and delivery. The delivery agent, who is an expert in its domain and may have had limited if any involvement in gestation, often wishes to renegotiate elements of the original strategy - crafted in gestation and imprinted into delivery by the 'founders' - in light of the new information the agent brings to the table and environmental changes that may have meanwhile occurred. In the process of 'selling' the scheme through the ecology, the promoter may have changed the scope and hammered out various other deals that increased delivery costs significantly, or that invalidated assumptions made at the early stages but were not factored in across all scheme structural elements. The delivery agent may also have different perceptions of risks of overruns, and as a result may want to renegotiate contingency provisions in time or in cost, or

change the scope. In the case of public-led megaprojects in the UK, Treasury policy will require to add a huge contingency (so-called 'optimism bias' factor) at this stage to create a buffer to accommodate late change and shield politicians from potentially embarrassing situations created by budget overruns. Hence, during handover between promoter and delivery agent, the delivery agent needs to exhibit strong leadership - and be empowered to exercise it by governance - to take ownership of the megaproject's strategic direction, and renegotiate a strategy that can enable a successful project delivery. This entails:

1. Renegotiating a realistic delivery timescale and budget aligned with a redefined scope.

2. Designing an effective governance structure that strikes a right balance between exercising control and oversight over the project executive's actions and letting the executive do the job

3. Communicating the raison-d'être for strategic changes and their impact to relevant parties.

Furthermore, as design detailing and construction progresses, the delivery agent will require strong leadership skills and an effective governance structure to deal with pressure to make strategic changes to the scope, timescale, or budget of the megaproject. The sources of change can be many: change can be driven by local authorities' late demands in exchange to give consent for detailed planning permissions; by unexpected ground conditions or technical problems; by significant economic or technological change in the environment that may have made obsolete the original strategy; and of course, another major source of change will be the gradual involvement of the future operator in design decision-making as explained next.

***Operations*:** Whilst the beginning of operations is normally associated to a pre-determined project handover date, e.g., the infamous opening date of Heathrow T5 on 30th March 2008, delivery and operations stages overlap over a period (so-called operational readiness in practice) during which the delivery teams gradually 'pass the baton' or asset ownership to the operators who will operate the assets over the decades to come. Because of the extraordinary long timescales and general uncertainty characterizing the gestation and delivery of megaprojects, it is unlikely the operator may have been fully involved in the early stages when fundamental design decisions had to be made; in some cases, the operator organization may not even exist until mid-delivery. Hence, in gestation and in the early stages of delivery, the delivery agent may have to resort to some sort of 'surrogate' responsible for writing out the requirements of the future operator until the latter gets in post and finally has the opportunity to sanction these requirements. It is not unusual to find delivery agents complaining about a lack of operator engagement during the design process particularly in its early stages when, paradoxically, the operator would be arguably best placed to dovetail design and the business case. More commonly, the future operator lies dormant until relatively close to the project handover date when adaptation costs may have become very high. To overcome this challenge, an empowered delivery agent needs on one hand to insist with the operator to gain 'skin in the game' and become involved in and accountable to design decision-making as early as possible to the extent the delivery agent may almost feel it is bullying the operator to do so. The lever that the delivery agent can use in this conversation is the well-known limited ability of the operator to drive change in the late stages of delivery

due to the high risks involved in late amendments to the design. On the other hand, the delivery agent needs to either design a delivery plan that allows for delaying particular design decisions to a later stage when it is reasonable to expect the operator to be fully in post; or alternatively ask designers to produce flexible designs that can cope economically with late change. Likewise, the challenge for the eventual leaders of the operating organization is to engage in dialogue as soon as feasible with the delivery agent in order to communicate the requirements for the desired operational legacy of the megaproject, and help reduce the totality of capital and operational expenditure. Without this operator's early engagement, megaprojects run either the risk of failing to deliver assets which maximize business returns over the operating lifecycle, or the risk of overrunning their original project delivery budget and schedule due to late adaptation of the design to meet the evolving needs of the operators.

All in all, a common theme in discussions with leaders of megaproject delivery organizations is the challenge of balancing two forces: 1. the capital cost of building in design flexibility upfront to cope economically with foreseeable uncertainties in design requirements associated to evolutions in the environment and in the needs of the future operators; and 2. the calculated risk -- if flexibility is not built in upfront -- of either costly late adaptation in delivery, or delivering suboptimal outputs if the delivery agent manages to push back operator-driven late requests to change the design. But equally, leaders need to know when, and critically how, to turn down late change requests which on balance would most likely bring limited long-term operational benefits vis-à-vis increasing significantly the downside risks of harming the delivery goals. Whilst the right balance is difficult to achieve, by building early on and sustaining lasting relationships with key stakeholder groups, the leaders of the delivery agent, and importantly of the governance overseeing executive leadership and sharing decision-making power, will be better able to gain the legitimacy that is necessary to support the difficult judgment calls associated to whether to instruct or not late strategic design changes based on balancing both emerging opportunities and downside risks.

To conclude, by framing megaprojects as relay races between fundamentally different decision-making groups, the research team is aiming to bring to the fore a previously overlooked challenge for megaproject leadership - the passage of the baton from a successful 'bid' team to a paired team comprised of a delivery agent and the principal(s) represented through a governance structure, and finally to the future operators. It is during these handoff periods that strategic change – and equally important, resistance to strategic change - is most likely to occur driven by a number of different actors. Arguably, early engagement of leading representatives from each of these lifecycle phases, particularly the operator who often either shies away from getting involved early on, is not invited, or simply is not yet in post when critical design decisions (which may be hard to delay without delaying the whole project delivery) need to be made, may conduct to a more effective and efficient project delivery.

What is most clear from the research thus far is, first, the need to urgently move beyond the current negative rhetoric which hinders effective handovers by sowing a seed of mistrust into the infrastructure development process. And second, the need to demarcate the project management function -- valuable as it is-- from the megaproject leadership function. Clearly, the events' speakers- the chairman and the construction director of ODA, the commercial

director of Crossrail, or the Heathrow East programme director - *are not* project managers. Rather, their roles imbue the megaproject (which by definition is a capital programme that comprises various capital projects, physically intertwined, and delivered with some degree of concurrency) with much needed strategic capabilities for steering and coordinating the project management teams. Because of the collective size and manpower required to deliver a megaproject, both project management and leadership functions co-exist[2]. But whilst research on project management is mature, we still know little about what exactly the megaproject leadership function entails, how its competences and skills need to evolve over the infrastructure development life-cycle, and how to ensure effective megaproject governance.

4.1 The Case of Crossrail

The Crossrail project is currently Europe's largest construction project and aims to deliver an urban high-capacity metro railway connecting the East and West parts of the London metropolitan area. It will dramatically increase the capacity of London's transport network by the end of 2019. The inception phase of the Crossrail project lasted several decades culminating with a vigorous attempt in the early 1990s that albeit gaining an initial momentum, it failed in the end to gain sufficient support in Parliament- at a time when interestingly, Paris, a capital city in perennial economic competition with London, already boasted a RER network of five similar railway lines connecting the centre to the suburbs.

Crossrail's gestation can be traced to the beginning of the 21st century when a new scheme promoter successfully negotiated a new narrative across the House of Commons and the House of Lords. The result of this negotiation was the scheme receiving Royal Assent in 2008, which created the Crossrail Act. The Act gave planning powers to a delivery agent, the newly formed Crossrail Ltd., to commence detailed design and construction on behalf of the two sponsors, Transport for London, an organization reporting to the Mayor of London, and the Department of Transport reporting to the central government.

Martin Buck, Commercial Director of Crossrail Ltd., spoke first about the difficulties in developing the Crossrail scheme through gestation. Crossrail was, for a time, unable to garner sufficient financial backing. But rather than misrepresent the true cost of the delivery project to gain support, the Crossrail 'bid' team were clear about the need for more capital and worked to create a compelling case for joint funding from private organizations (BAA, Canary Wharf, Berkeley Holmes), London business community (through new levies), and the government- 'We did not fib', quipped Martin. Rather, the scheme promoter insisted that Crossrail would require £15-16bn when only around £2.5bn had already been secured.

Discussing the project delivery stage, Martin stated that maintaining openness with the two key sponsors has been a key value in Crossrail Ltd.'s governance which is constantly trying to balance the ability to let the project executive (Crossrail Ltd.) get the job done whilst ensuring it provides transparency needed for the key stakeholders to exercise control and oversight. This balancing act is complicated, first, because of a lack of understanding in the early days about who the ultimate client was, DfT or the Mayor of London?; and second,

[2] Of course project managers also need leadership qualities, but we argue the makeup of the megaproject leadership function is different.

because delivering Crossrail requires working with a large number of delivery partners including London Underground, Network Rail, DLR, Canary Wharf Group and Berkeley Homes. To operate in such a complex environment, the current governance structure frames Crossrail Ltd as the single point of responsibility, responsible for overseeing the performance of its delivery partners. Crossrail executives report regularly to an independent board as typical in corporate environments, as well as to a joint sponsors' board who keeps a representative (project rep) on the project. But whilst Crossrail Ltd places an emphasis on creating and maintaining a world-class management team, the sponsors have designed four control points that have significantly limited the executive' decision-making autonomy in the first years. Only recently, and when almost all major contracts have been let out, has Crossrail Ltd. passed the fourth review point and gained more decision-making autonomy. The sponsors have also spelled out in the Crossrail's Project Development Agreement (PDA) a number of criteria for intervention based on the extent Crossrail Ltd. is achieving its performance objectives in terms of programme, earned value, risk mitigation, reporting, and meeting the assurances and undertakings that are part of the Crossrail Act; the PDA even includes a non-relief clause, which dictates that Crossrail Ltd. must bear all future risks with no additional sponsors' support, something deemed too harsh from a private sector perspective, but a necessity in a public-led megaproject during an economic downturn. Whilst Martin acknowledges that Crossrail's governance is very heavy and has limited the executive decision-making power, he recognizes Crossrail is a massive public-led investment in extraordinary recessionary times, and it is critical to justify all decisions in the public eye.

4.2 The Case of London 2012

The gestation of the 2012 London Olympic Park delivery project can be traced to 2002 when the government commissioned a cost-benefit analysis to Arup, the UK's leading engineering consultant. Arup's report was based on a 'specimen' plan for the games centred on the need to acquire land and build five new sporting venues, a project scope that was not dissimilar to that of the project undertaken to prepare the city of Manchester to host the Common Wealth games held in that year. In the years that followed, the London2012 bid team morphed this specimen plan into a major urban regeneration project for East London, one of the most deprived areas in London, with a Games overlay to host the sporting event. The Olympic Delivery Authority (ODA), the megaproject delivery agent appointed by the government in 2006, has since then regenerated 2.5sq kilometres of industrial land into a high-quality public space including parkland supporting rare wildlife, major sport venues, over 2000 apartments many of which will become affordable social housing, an education campus for 3-19 year olds, and the transport and utility infrastructure to tie all the assets together.

Howard Shiplee, former Construction director at the ODA, discussed the need to 'precondition [megaprojects] for success'. In order to build a project environment for success, Howard argues, it is important in the early stages, when the delivery agent gets in post, to recruit the right people with the right attitude. From a leadership perspective, part of what amounted to the right attitude for the ODA was valuing openness and honesty characterised

by being public about setting targets and, when necessary, admitting failures. Admittedly, Howard pointed, it was not all 'motherhood and apple-pie'. Rather, they succeeded because they all wanted to survive to the end, and in light of self-interest, they decided they needed to stay together. Unarguably, Howard recognizes, the Olympics immovable date was a major strategic lever that ODA used repeatedly in order to get people to do what needed to be done.

In discussing the ODA's approach to leadership, Howard reinforced the importance that the delivery agent plays in creating a successful environment through their engagement with key stakeholders. He also explained that the ODA decided to embrace the notion that the megaproject 'baton' must be passed from design to infrastructure to construction teams, each of which having the specialist capabilities to do their part. In a venture as time critical as the Olympic Games, the ODA played a key role in orchestrating this passage of control guided by three principles: listening, learning, and liaising with all the relevant stakeholders.

From a governance perspective, ODA had a multi-headed governance involving different government departments and various influential third parties, to which Sir John Armit's first reaction was to think 'politically correctness had gone mad'. But this plurality of voices at board level was instrumental to sustain political alignment across government departments, and between the government and the opposition, and ultimately avoid the project being used as a political football[3]. Part of John Armitt's role as ODA chairman was precisely to keep the opposition abreast of project progress; as he put it, "I would tell them 95% of what I was telling the ministers to have everyone on the same page and preempt political games." Notwithstanding this, John reckons that the ODA probably finished with more formal assurances than it would have been necessary: external and internal audits, project risk controls, London 2012 controls, overall 10 levels of assurance. This could be frustrating, but John argues it ultimately helped to create a high level of transparency which in turn created confidence in the politicians to trust on the work that the ODA was doing.

Whilst both John and Howard would agree that framing the London2012 project as a urban regeneration scheme with a games overlay had been the right thing to do, they recognized that only time will tell whether the legacy will succeed. The ODA can be understood as having put the skeleton, but challenging questions remain: will there be financial support to maintain the park, the first in London in the last 150 years? (the aquatics centre, for sure, is going to be expensive to maintain). Thus legacy will depend on the willingness of politicians and Londoners to give financial support to ongoing development and maintenance of the Olympic park, and if they do, the megaproject can then be judged to have been successful.

That being said, other participants argued that the London2012 legacy goes beyond bricks and mortar. Representatives of the supply chain pointed to a legacy in terms of UK plc. in the sense ODA found better ways to do things, do more for less, which helped to give the construction industry confidence on its capability to bid for megaprojects, export its capabilities, lever the experience into international markets, thereby opening a lifecycle of business opportunity; or as one participant put it, the Olympics project has become a piece of

[3] Or as a presenter facetiously remarked, 'better to have them [stakeholders] inside the tent pissing out than outside pissing in'

history that gave the industry confidence and created a massive opportunity to help the industry reconstruct a skills base. On the domestic front, however, attendants noted that British politicians need to focus on the value of infrastructure if they are serious about exploiting this new skills base to reconstruct the UK's outdated infrastructure network. The key issue is articulating what infrastructure can do for a congested country like the UK, so one can have MPs, government, and overall political commitment to do megaprojects.

Related to this, another critical issue is accepting that the amount of public investment in mega infrastructure projects in the UK will diminish over time. Whilst the good news is the evidence that outside investors want to invest in UK infrastructure, the question for industry leaders and politicians is how to get that private money when it is recognized that investors may consider facing the short-term construction risk, but will tend to shy away from the long-term planning risks. In this regard, someone noted that the cultural make up of pension funds in Europe (in contrast to those in Canada or in Australia) does not have the set of skills to make them confident to invest in mega infrastructure projects, which suggests that the private sector investment in UK infrastructure development is going to be a slow process.

4.3 The Case of Heathrow's Terminal 2

Julian Foster walked the audience through the challenge of rebuilding the Eastern Terminal campus for 30m passengers a year in the middle of one of the world's busiest airports. He argued that the conflation of many challenges faced by this project could be compared to a perfect storm: a challenging budget and timescale, the need to coordinate multiple design-build consortiums, the need to keep the large number of airlines forming the STAR alliance happy and engaged albeit ongoing changes in the makeup of this Alliance (most recently, BMI, the second largest domestic carrier at Heathrow and the largest member of the STAR Alliance at Heathrow is in the process of being sold to British Airways who occupies the Western part of the Heathrow airport), the paramount issues of ensuring safety and security, the perception, right or wrong, by the new owners of BAA that the commercial strategy the company had used to deliver T5 turned out to be a very expensive way to deliver an airport terminal and should not be repeated; and last but not least, the need to avoid another botched opening after the debacle which was the opening of the Heathrow's terminal 5 in 2008 when thousands of fights had to be cancelled due to numerous operational issues.

To face up this storm, BAA has coined and invested in developing the notion of *Intelligent Client* since 2009. This notion encapsulates ten operational principles or commandments: 1. Define the need; 2. Specify the requirement; 3. Chunk the work into optimum blocks; 4. Competitively select ideal sources; 5.Devise an aligning contract with constructive incentives; 6.Clear out obstacles and support contractors; 7. Enforce contract up, down, sideways; 8. Integrate Products; 9.Commission; and 10.Assess Effectiveness. Strategically, the notion of an intelligent client means BAA as a company is not interested in investing capital resources to deliver and manage the delivery of individual projects, but rather the airport operator is interested in identifying strategic development options each one corresponding to a capital programme (a set of interrelated projects) as well as identifying strategic options embedded in each programme. Hence, for each potential capital programme, the company is interested in assessing how the investment can realise commercial benefits

and meet business objectives. Based on this assessment, BAA can then develop a portfolio of programmes and structure them in a way so they can be delivered on time and within budget by design-build consortiums appointed competitively, with BAA retaining the role of systems integrator across programmes, and between the programmes and the existing assets and operations at Heathrow airport. To realise its intelligent client model, BAA has been focused on developing the procedures and standards that the design-build consortiums need to follow.

From a governance perspective, Julian explained BAA's approach is anchored on the principle of involving the firm's senior executive team – the team that reports directly to the BAA board of shareholders- in capital programme decision-making. Hence, each programme has a programme sponsoring group which acts as a forum where the top management team can resolve major design and delivery issues and manage the key stakeholders. In addition to sitting on the programme sponsoring groups, BAA executive directors sit on functional executive boards to which all programmes must report, e.g., performance review executive, construction Health and Safety executive, or supplier engagement executive.

From a leadership perspective, Julian's comments were aligned with John Armitt's comments, and also emphasised the traits of leadership in particular in terms of expressing passion and energy for the work. Julian also mentioned the importance of gaining visibility and ensuring consistency of approach which gets translated in applying the same standards in terms of quality, health and safety, or site cleanliness to all programmes. Leadership should also be about encouraging innovation, celebrating success, and scouting options ahead. Julian wrapped up his presentation by quoting a remark made by Nelson Mandela: "A great leader is like a shepherd. He stays behind the flock, letting the most nimble go ahead, whereupon the others follow, not realising that all along they are being directed from behind."

4.4 Final Comments

The workshop revealed the need for more fundamental research on the issues of leadership and governance in mega projects, as well as for investigating how the industry can: 1. take on board the emergent insights, 2. understand what their implications might be, and 3. apply the insights to practice. The discussion seemed to suggest a first step for researchers and practitioners might be to undertake work that clarifies the key roles and functions in mega projects. For example, the delivery agent plays a key role, but whilst the suppliers perceive this organization to be the client, the ultimate project client is in fact not the supplier's client, but rather a multi-headed principal that sits on the governance structure and exercises control and oversight over the delivery agent's actions and decisions. Because of the size of the capital investment underpinning any megaproject, it is inevitable the governance structures in public-led projects will lean towards cumbersome bureaucracies that significantly constrain and slow down the delivery agent's decision-making capability. Rather than resist to this, the delivery agent wants to use it to its advantage as a means to create transparency in decision-making and build the principal's confidence and trust on its actions.

It was heartening to realize that the analogy of megaprojects as relay races involving tricky baton handoffs played well with a practitioners' audience, which intuitively related to the figurative challenge of passing the baton without letting it fall off to the ground, as well as to the need to shift the rhetoric on megaproject cost escalation from negative to positive ideas. This was so to the extent the CID team was encouraged to talk to Infrastructure UK and other

government client bodies about its ideas. And some people overall felt the Major Projects Authority and Academy as well as the Government's Gate Review process would benefit from an engagement with the CID team.

From a leadership perspective, the discussion was characterized by two main aspects. On the one hand, there was a discussion centered on the traits of leadership, and on the other hand a discussion centered on leadership as a practice where the fundamental question was 'what do leaders do?' On the former, consensus seems to have emerged that megaproject leadership (from a delivery agent executive and principal perspectives) requires some fundamental traits including sincerity, empathy, openness, effective communication, and ability to simplify. But people also acknowledged these traits can be realized through different leadership styles. On leadership as practice, the audience agreed that what leaders do can be fundamentally different along the infrastructure development lifecycle stages. But there was a consensus that leaders need to engage with key stakeholders as early as possible in the delivery process.

1. Appendix I – Discussion dinner: Leadership and governance of megaprojects, March 27, London

List of Attendees:

Mike Saunders, President, Power & Process Europe, Amec
John Oliver, Head of Project Management, BG Group
Ian Reeves CBE, Chairman Constructing Excellence
Don Ward, Chief Executive Constructing Excellence/MBS
Andrew Wolstenholme OBE, Chief Executive Crossrail
Martin Buck Commercial Director Crossrail
Malcolm Bairstow, Global Head of Infrastructure, Ernst & Young
Paul Morrell OBE, Government Chief Construction Advisor
HMG, Paul Skinner, Non-executive Chairman Infrastructure UK
Geoff French, Vice-President Institution of Civil Engineers
Howard Shiplee CBE, Executive Director Laing O'Rourke
Professor Michael Luger Dean Manchester Business School
Professor Nuno Gil, Academic Director, Centre for Infrastructure Development, Manchester Business School
Anthony Oliver, Editor New Civil Engineer
Simon Kirby, Managing Director, Infrastructure Projects, Network Rail
Sir John Armitt, Chairman Olympic Delivery Authority (ODA) and 'provocateur'
Richard Laudy, Partner Pinsent Masons
Fraser McMillan, Partner and Head of Scotland, Pinsent Masons
Graham Robinson, Consultant, Pinsent Masons
Alastair Morrison, Partner and Head of Client Strategy, Pinsent Masons
Lance Taylor, Chief Executive Rider Levett Bucknall,
Murray Rowden, Head of Infrastructure, Turner & Townsend

2. Appendix II – Workshop invitation: The leadership and governance of mega-projects

A half-day workshop organised by the Centre for Infrastructure Development (CID), a partnership between Manchester Business School and Constructing Excellence

Date/time: March 28 2012, 9am for 9.30 to 1.30pm

Venue: London

Price: Free of charge to attend for up to two representatives each of members of CID and Constructing Excellence; £250/head for non-members

Invited attendance
Industry leaders and senior managers seeking to understand what it takes to lead mega-projects from the early planning stages through design development and construction to handover to operations

Aim and Context
This ground breaking workshop aims to spearhead a well-grounded discussion on models of leadership and governance for mega infrastructure projects. These projects involve massive funding, many stakeholders, and long planning and delivery timescales. Common to these projects is also that design and construction processes are beset by change in response to broader changes. For high-performance project development and execution, world-class leadership and governance is paramount. Leadership is needed to create environments that enhance the ability to pay for new projects, that make it possible to design assets adaptable to change, and that enable delivery teams to succeed, deliver efficiently, and handover high-quality assets on time, within budget. Governance is essential to empower and help leaders to make the best decisions with the right information when the decisions need to be made, as well as to make them accountable for those decisions.

To provoke discussion about leadership and governance in mega projects, we are inviting leaders of Crossrail, London Olympic Park, and Heathrow airport T2/T5 to present their views grounded on their own contexts. Preliminary insights from an in-depth comparative and scholarly study of these projects will also be shared. In a roundtable format, the presenters will field questions from the audience, and participants will be invited to share their own experiences and views. The workshop will be relevant to any professional involved or with the aspiration to get involved in mega project development and delivery, and looking for an opportunity to reflect and learn on the challenges that these projects pose, and how different institutional contexts may require different models of leadership and governance.

Workshop speakers

Keynote speaker: Sir John Armitt: Chairman of the Olympic Delivery Authority
Professor Nuno Gil, Manchester Business School, Developing Mega Projects: The Relay races challenge
Martin Buck, Crossrail Commercial director: The case of Crossrail
Julian Foster, BAA Eastern Campus programme director: The case of Heathrow Terminal 2
Howard Shiplee, former ODA Director of Construction: The case of the Olympic Delivery Authority

Agenda
Introduction, Chairman – Don Ward (Constructing Excellence/CID)

Seminar speakers as above
Workshop discussion and debate
Conclusions and way forward
Lunch

Participants will gain a unique opportunity to join and participate in the first public debate on governance and leadership of mega projects, exceptionally well-grounded on three fundamentally different mega projects. By reflecting and sharing ideas and conceptions, participants will directly advance on-going development work on leadership and governance in mega projects, and more broadly build a shared understanding of how to adapt alternative models to different project contexts. Participants will also make valuable contacts with major clients and leading supply chain firms involved in mega project development.

The workshop organizers

Nuno Gil and Don Ward, Centre for Infrastructure Development, Manchester Business School, UK
Please contact Natalie Parker for further details: natalie.parker@constructingexcellence.org.uk