Innovation in infrastructure funding and finance

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1. Introduction

This report summarises key insights that emerged from discussions with two groups of subject-matter experts organised by the Centre for Infrastructure Development (CID) in November 2011:

a) A dinner discussion on *Global Project Finance* with invited guest speaker and 'provocateur' Dr. Ryan Orr from Stanford University, also founder of Zanbato, a technology platform for the infrastructure asset class. The dinner brought together around 20 people including senior practitioners from private sector finance and consulting firms working in infrastructure delivery, Paul Skinner, non-executive Chairman of Infrastructure UK, a division of HM Treasury, the MBS Dean and the CID Academic Director, and the chairman and chief executive of Constructing Excellence. The dinner was hosted by Oriel Securities at its London headquarters on November 14 (details in annex).

b) A half-day workshop on *Innovation in capital funding: the local authority perspective*. Four speakers led the workshop discussion: Professor Michael Luger, Dean of Manchester Business School, on infrastructure finance; Ryan Orr, on global project finance and infrastructure investment; Madoc Batcup, Synaps, on innovative infrastructure investment and management vehicles, and Neil Jarrett, CWC, on business efficiency and reducing the need for finance. Some 20 people from the local authority finance community attended the workshop, which was hosted by the Corporation of London at the City Marketing Suite, Guildhall, on November 15 (details in annex).

2. Background: New infrastructure development in context

Historically, Ryan Orr argued, many societies have invested in new families of infrastructure systems through boom and bust periods. These periods have been motivated by fundamentally different drivers, for example, the development of the London's Victorian network of giant intercepting sewers, treatment works, and pumping stations was critical to clean up the river Thames; the development of the US inter-state highway network endorsed by President Eisenhower responded to lobbying from major U.S. automobile manufacturers; the development of the first railway networks leveraged technological breakthroughs of the industrial revolution; the Marshall plan helped rebuild European economies after the end of World War II; and more recently the investment in broadband has leveraged technological breakthroughs of the digital revolution. Arguably, these developments have repeatedly helped societies gain competitive advantage relative to other societies that lacked comparable infrastructure or were slower to adapt.

In a Darwinist view, Ryan speculates if one can argue that survival and welfare of societies may hinge in part on their ability in a timely way to adapt their infrastructure in response to evolution in societal needs and technological breakthroughs, in the same way Darwin observed that bird species of the Galápagos had adapted the size and shape of their beaks to different food sources, a process that made them fit to survive. The development of infrastructure systems also inexorably leads societies into periods when they continue to need more infrastructure, but the investment necessary to bridge that infrastructure gap then competes fiercely with the need to invest in other important areas to address prominent socio-economic issues around health, education, and welfare. In many ways, Ryan argues, some western societies with ageing infrastructure such as the UK and the US have arrived at one of those periods when investment in infrastructure competes fiercely with other socio-economic areas, thereby creating a ‘perfect storm’.

The next sections consolidate the insights from the two discussions focused on how the UK as a nation can tackle this ‘perfect storm’, and in particular what options lay ahead for local authorities. The first two sections summarise the salient characteristics of this perfect storm from a global project funding and finance perspective and qualify these characteristics to the case of the UK. Then, the conventional models of funding infrastructure by UK local authorities are put in the context of an age of austerity. The two subsequent sections outline some overarching insights that surfaced during the debates about alternative ways to fund new infrastructure, and some challenges to enact them.

3. Global funding and finance for new infrastructure development

- According to Ryan Orr, circa 1% of global wealth available to invest is currently invested in infrastructure, Ryan argues that there is room to rise this metric, say up to 10% in the medium-term, if better mechanisms exist to match vendors and buyers of infrastructure
- Certain pension funds, e.g. Canadian and Australian, already have big portfolios in infrastructure
- Infrastructure is a viable assets class for investment in a market environment where conventional alternatives are not necessarily that attractive:
    - Yields on traditional safe assets such as government bonds are very low when not negative under inflation
    - Equities (shares) have become extremely volatile with the surge of computerised trading
    - In contrast, quoted infrastructure funds have been much less volatile than the rest of the market with respectable returns – but still with poor liquidity
- In the current environment, banks need to put aside reserves against all their loans, and so will be unlikely to commit to long-term loans (longer than ten years) needed to develop new infrastructure. In contrast, pension and insurance funds have a long-term perspective
- Funds have no capabilities in-house to develop and deliver new assets and are extremely reluctant to invest in greenfield projects as they dislike the ‘awkward’ risk profiles of these undertakings in terms of planning, construction, and technological performance
- Schemes with potential to draw private capital into the space will be those capable to match the risk appetite of potential lenders with a reshaped risk profile for new infrastructure projects. The risk and hence cost of money to the private sector before and after construction is quite different. Lenders seem to shy away from short-term high risk perceived to be associated with the early stages of planning and construction. Lenders seem, however, more willing to incur long-term low risks of ownership and operation and facilities management. This insight suggests that to succeed, new schemes for project funding and financing may perhaps have to be framed as a relay race, where the baton

is handled to different types of funders at different stages, with a careful oversight of the interface/transition periods
- The success of PFI in the UK has led to enabling legislation in 26 states of USA, but decentralised government has limited its uptake compared with UK centralised government
- Obsolescence of infrastructure hurts business development even in the most economic advance regions. For example, poor roads in Silicon Valley are viewed as reducing Google's available labour pool as commuting times are too high
- The debt overhang from the financial crisis is threatening the US infrastructure bond market, and the insurance industry that has traditionally underwritten those bonds
- Arguably, private markets for infrastructure are too secretive, leaving room to create open digital platforms to trade ownership of assets, thereby facilitating and encouraging dissemination of information and opportunities. Governments as well as particular multilateral regional organizations such as the African Development Bank are also pushing for more transparency to support more strategic rather than tactical decisions to invest in infrastructure[1].

4. Infrastructure development: the UK context

- UK ranks now 26-28th in infrastructure investment. This begs the question on what kind of economy and built environment the UK is trying to enable in say 25 years time.
- The UK has a National Infrastructure Plan (v2 2011), which highlights energy and urban regeneration amongst the two top priorities
- In the UK, infrastructure has been 65% private sector funded in the last few years, and subject-matter experts believe this figure is set to grow
- The transition from a public to a private-led infrastructure development programme has not yet been debated enough.
- PFI in the UK was predominantly used to fund development of social assets
- Post-privatisation, UK utilities do not have a statutory obligation to meet market demand – so experts are bound to think that the available capacity is always likely to be a little below the need
- In the UK and elsewhere, banks have stopped playing the role of intermediate between short- and long-term loaning; rather, in the new environment, banks are unlikely to be able to loan for periods longer than they can borrow

5. Project funding and finance for local authorities: conventional models and outlook

- In an age of austerity, higher rates from the Public Works Loans Board, the traditional low cost route for local authorities to borrow money, and higher cost of private sector money are forcing local authorities to look to alternative ways to self-fund or finance new capital investments as well as to 'sweat' existing assets
- The focus for local authorities is now clearly on controlling and monitoring expenditure
- The problem for local authorities is not necessarily sources of funding – lenders such as insurance companies and pension funds are interested in lending to AAA local authorities. Rather, the problem is whether the future revenue stream will allow paying for new infrastructure projects

[1] An interview where Dr. Ryan Orr discusses the business concept behind its start-up Zanbato will be available from CID's website in early 2012

- Local authorities have limited authority to raise taxes, hence the interest in new funding models such as TIFs and localisation of business rates, or 'spend to save' prudential borrowing
- Local authorities agree that innovation is necessary to develop funding models that can generate revenue streams which can be securitised
- local authorities need to pick the right 'pilot' schemes to validate and qualify innovative schemes
- A debate seems to be surfacing as to whether LA pension funds may be in a position to invest in their local community infrastructure. Some argue LA pension funds can be a right investor, whereas others are concerned that funds will expose people to new risks
- The US model to fund infrastructure through bonds that local authorities tend to put for vote. e.g., revenue bonds (paid by dedicated revenue stream), general obligation bonds (paid by the faith and credit of the tax base) has never picked up in the UK and in Europe more generally. Partly, this is because European governments have never bought into the US tradition of not taxing interest from bonds which they frame as a subsidy to the private sector whereas the US argues it's worth doing it due to the overall economic value that new infrastructure creates
- Local authorities systems in terms of internal governance, reporting systems and back-office all need adapting as local authorities look to innovative ways to invest in infrastructure
- For local authorities, securitization of capital investment in new infrastructure is not easily done in the UK because local authorities are seldom authorised to charge for the assets they build
- PFI enabled to get a large number of projects off the ground, but it has acknowledged flaws:
  - the local authorities' credit risk AAA got converted to lower grade risk via PFI
  - Contracts are about allocating risk and reward, and banks risk aversion has pushed inefficiency into deal structures – and pushed up procurement costs
  - Most UK PFI was based on availability of the asset, not its use – government was underwriting market/user risk
  - PFI balance sheet treatment was off balance sheet, a model which is not sustainable with the government's new approach to accounts
  - PFI consortia were typically one-off, not long-term relationship-based
  - There was an asymmetry between technical and legal competence of private sector players and limited capabilities on the LA side, an intermittent investor
- Newly formed Local Enterprise Partnerships are not a free lunch, some of those recently formed may have created strange bedfellows and will be challenging to operate.

6. Funding new infrastructure: overarching insights

- There is a need to reset and demonstrate politically that lessons from PFI have been learned and are informing a new generation of vehicles post-PFI to enable more private capital to flow into the space. But, also a need to think carefully so as to avoid throwing out the baby with the bathwater
- There is a need to tailor the new infrastructure development process in order to make it seamless and transparent about risk to the ultimate investors
- Due to the relevance of new infrastructure development to public welfare and reduce inequity in society, the government will have no alternative but to resolve market failure
  - there will be cases where user-benefits can be ring fenced, and users will be asked to pay for the full economic benefit, whereas in other cases, it may be economic advantageous to subsidy user-benefits

- Growth of technical and managerial capabilities to develop new infrastructure is fundamental, but continuity in infrastructure development is critical to entice organizations to invest in capability development
- To inform development of new project funding and finance schemes, more data needs to be made available for comparing public and private funding options
- More project screening and selection is needed, or as Ryan put it 'more bang for the buck' local authorities and developers in general will need to have some kind of frameworks (a participant pointed to Manchester's gateway process) to help them access how they prioritise and select the ideas to move forward :
    - what determines the merit of a project?
    - how can projects be ranked, challenged without putting off people to come with ideas?
    - what are the criteria and weight of the criteria in the objective function? have criteria changed, for example, job creation has become hugely important for many local authorities
    - is there a system to attenuate the influence of politics in the prioritization process, to ensure the decision-making process is fair and balanced?
    - a participant noted, however, also the need to be careful to build 'big' project prioritization frameworks that end up creating big overheads
    - another participant argued that, ultimately, decisions to invest will always be made by politicians elected democratically, and the purpose of the prioritization process should be to support political decision-making and judgement, and ensure that politicians do factor in short- and long-term priorities in investment decision-making
- A subset of new models for funding and financing new infrastructure will most likely have to build on joined-up initiatives between public and private sectors
- To develop assets with long-operating lives, adaptability to evolution in requirements over time needs to be built in upfront - this requires balancing concerns for efficiency, i.e. deliver on time and within budget, with effectiveness, i.e., ensure the asset can cope economically with evolution in customer needs and thereby avoid premature obsolescence
- Arguably, room may exist for private sector organizations that facilitate the process of local authorities coming together and develop steady and consistent capabilities to self-finance, procure and deliver new infrastructure. These organisations can be instrumental to:
    - encourage provision of local labour,
    - combine private sector commercial ethos with public sector ways of operating
    - integrate the two capabilities to mitigate risks
    - build critical mass at local level, instil investors' confidence
    - bring a few local authorities first, and gradually build the organisation
    - would this be a private entity limited by public guarantee?

7. Final considerations

- Because markets have lost confidence, the 'borrow short, loan long' model is no longer sustainable
- There is a fundamental role to de-risk new infrastructure projects
- In addition to seek new ways of project funding and finance, cash-strapped organizations such as local authorities and universities need to look at opportunities related to asset management and improved utilisation. For example:
    - Occupancy rates in university facilities are traditionally low which suggests improving utilization rates can be an alternative to capital investment for particular demand

  - Work with operations people to rationalise design of spaces, understand what people do, what space they exactly need, and when they will use that space;
  - understand and challenge processes, explore opportunities to standardise designs
  - build on good experiences with devolving maintenance of council estates to residents, with Council keeping role of oversight, releasing capital to do other things
- On the project delivery side, efforts need to continue to further reduce traditional tensions between client and constructor, and between constructor and operator through collaborative working, lean thinking, adaptable designs, etc. These efforts are important to reshape risk profiles and mitigate risks of cost or time overruns, as well as risks of handover failures
- Whilst local authorities acknowledge that they have too many assets and they need to rationalise their portfolio, they note it is difficult to get good prices in the current environment perhaps with the exception of London. Hence:
  - local authorities need to be careful to avoid flowing the market with assets
  - Opportunities to rationalise portfolios need to be controlled, orchestrated across local authorities,
- Efforts need to continue to make the sponsors of new projects aware of the need for high quality upfront planning in order to further reduce the construction risk, aka ‘plan plan plan do’
- Infrastructure sponsors/clients should be mindful that good constructors and consultants are attracted by good clients keen to develop long-term relationships

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Annex

1. Discussion dinner
Global project finance in the new era (sponsored by Oriel Securities)

We are delighted to invite you to dinner on 9 November 2011 which we will be holding at our new offices in Cheapside, London in conjunction with the Manchester Business School and the Centre for Infrastructure Development. With excellent views of St Paul's Cathedral and being situated in the heart of the City, we are excited to be joined by the Dean of Manchester University Business School, the Director of the Centre for Infrastructure Development, as well as the Chairman and Chief Executive of Constructing Excellence, the organisation charged with driving the change agenda in construction. We will also be joined by a prestigious keynote speaker, Ryan Orr from the Engineering School and Graduate School of Business at Stanford University: Ryan Orr teaches Global Project Finance and Infrastructure Investment to students in the Engineering School and Graduate School of Business at Stanford University. Dr. Orr has been involved in designing policy strategies to confront India's infrastructure bottleneck, advising on start-up and structuring activities of California's Public Infrastructure Advisory Commission, and constructing a portfolio for a $500 million globally diversified infrastructure fund of funds. At Stanford, Dr. Orr has hosted a series of Executive Roundtables involving legal, financial, technical, and public policy experts to explore new models for infrastructure development both in the United States and in emerging markets. His current work focuses on infrastructure funds, syndicate and club deal structures, and institutional investment in infrastructure. In his consulting, he actively advises several pension and sovereign wealth fund investors. We have invited a select number of CEOs from the industry to participate in what we hope will be a lively discussion about developments in the sector. I do hope you will be able to join us and would be grateful if you could let us know your availability as soon as possible.

Attendees:

Simon Bragg	Oriel, Partner
Emma Griffin	Oriel
David Arch	Oriel
Adrian Ringrose	Interserve
Santiago Olivares	Ferrovial
Frank Schramm	Bilfinger
Anthony Rabin	Balfour Beatty
Tony Roper	InfraRed (Infrastructure) Capital Partners Ltd
Vincent Clancy	Turner and Townsend
Duncan Ball	Bilfinger - Tentative - may be in North America
Don Ward	Constructing Excellence/MBS
Dr Ryan Orr	Executive Director, Collaboratory for Research in Global Projects, Stanford University
Professor Michael Luger	Dean, Manchester Business School
Professor Nuno Gil	Centre for Infrastructure Development, Manchester Business School
Ian Reeves CBE	Senior Adviser, Oriel Securities Limited Royal Bank of Canada
Paul Skinner	Chairman, Infrastructure UK
Joe Winkley	Oriel

2. Workshop for local authority treasurers and other decision-makers: ***Innovation in capital funding: the local authority perspective***

The Centre for Infrastructure Development is a partnership between Manchester Business School and Constructing Excellence to address the economic and political factors of infrastructure development, project finance, accounting and commercial management, and capital programme delivery. The search is on for new models of finance for the UK's infrastructure, this is a major barrier to the social, economic and environmental goals of the UK public sector. This workshop will provoke discussion about alternatives for identifying funding for capital projects, the discussion will be led by experts from Manchester Business School and Stanford University and participants are invited to share their own experiences and views.Key speakers to stimulate discussion at this workshop include:

- Professor Michael Luger, Dean, Manchester Business School, on infrastructure finance;
- Ryan Orr, Engineering School and Graduate School of Business at Stanford University, on global project finance and infrastructure investment;
- Madoc Batcup, Synaps, on innovative infrastructure investment and management vehicles;

Participants in the workshop will gain exposure to new contacts and ideas, and will contribute directly to a new agenda of work to be facilitated by the Centre for Infrastructure Development to promote innovative financing models. They will also gain the opportunity to be directly involved in this programme of work going forward. We do hope you will be able to attend this event, please contact Jenny Parker at Constructing Excellence (email jenny.parker@constructingexcellence.org.uk or tel 0207 592 1100) to register for a place.

Attendees:

Vimal Upandhyay	Cardiff City Council, Project and Technical Accountant	
Ian Reeves CBE	Constructing Excellence, Chairman	
Karl Redmond	Construction Sector Network, Director	
Suzanne Jones	Corporation of London, Chamberlain's Department	
Dan Doherty	Corporation of London, Chamberlain's Department	
Bhupinder Chana	Leeds City Council, Capital and Treasury Management	
Mike O'Donnell	London Borough of Camden, Director of Finance	
Gerald Almeroth	London Borough of Sutton, Strategic Director - Resources	
Hugh Grover	London Councils, Programme Director - Fair Funding	
Ceri Taylor	Manchester City Council, Head of Corporate Finance	
Alan Aisbett	Pinsent Masons, Head of Local Goverment Sector	
David Rose	Royal Bank of Canada, vice President Infrastructure Finance	
Tim Pritchard	Sandwell Metropolitan Borough Council	Urban Design Manager
Jane Dixon	Sandwell Metropolitan, Borough Council	Commercial Manager
Simon Wainberg	Transport for London, Senior Associate Corporate Finance	
Michael Blake	Transport for London, Treasury Analyst	
Don Ward	Constructing Excellence/CID, Chief Executive/Executive Director	
Neil Jarrett	CWC, Chief Executive	
Michael Luger	Manchester Business School, Dean	
Nuno Gil	MBS/Centre for Infrastructure Development, Academic Director	
Madoc Batcup	Synaps, Managing Director	
Ryan Orr	Stanford University, Engineering School & Graduate School of Business	