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The problem is more than money

Global infrastructure crisis

By Charles Thompson, Senior Manager, Deloitte Consulting LLP; John Cullian, Senior Manager, Deloitte Financial Advisory Services LLP; Albert Bloomsbury, Senior Manager, Deloitte Tax LLP; and Ryan Englebretson, Manager, Deloitte & Touche LLP

Executive summary

We are in the midst of global infrastructure crisis. Infrastructure worldwide is deteriorating and needs to be replaced or enhanced. Existing public funding sources are inadequate to meet the need, but the problem is more than money — private sector funding is available. But public sector asset owners and their private sector counterparts need to understand the bigger picture before they can accomplish an effective infrastructure financial transaction.

What we believe is required is a broad, robust infrastructure life cycle perspective, which, while considering the interests of the stakeholders:

1. Defines the full life cycle of infrastructure transactions
2. Identifies the phases and key activities of the life cycle for both the public and private sectors
3. Identifies relevant stakeholders
4. Identifies critical capabilities the public and private sector must possess to be effective in each phase

Having this big-picture understanding and guide is essential if stakeholders in these critical infrastructure transactions hope to address this growing global problem.

Where we are

The recent bridge collapse in Minneapolis is a tragic consequence of the growing crisis in infrastructure that affects U.S. highways and bridges. This crisis is not limited to these assets, however; it also affects other important infrastructure assets including water, wastewater and solid waste, airports, seaports, prisons, schools, urban renewal and regeneration, and the military.[1]

The American Society of Civil Engineers (ASCE) estimates total U.S. infrastructure investment needs over the next five years to be $1.6 trillion.[2] As Figure 1 illustrates, the infrastructure crisis is a worldwide challenge.[3]

The investment requirements are staggering and beyond the reach of any existing government tax or user fee-based funding schemes. However, addressing the infrastructure crisis is about more than just money. It is a complex, multidimensional problem where funding is just one important part. Other issues that must be addressed include:

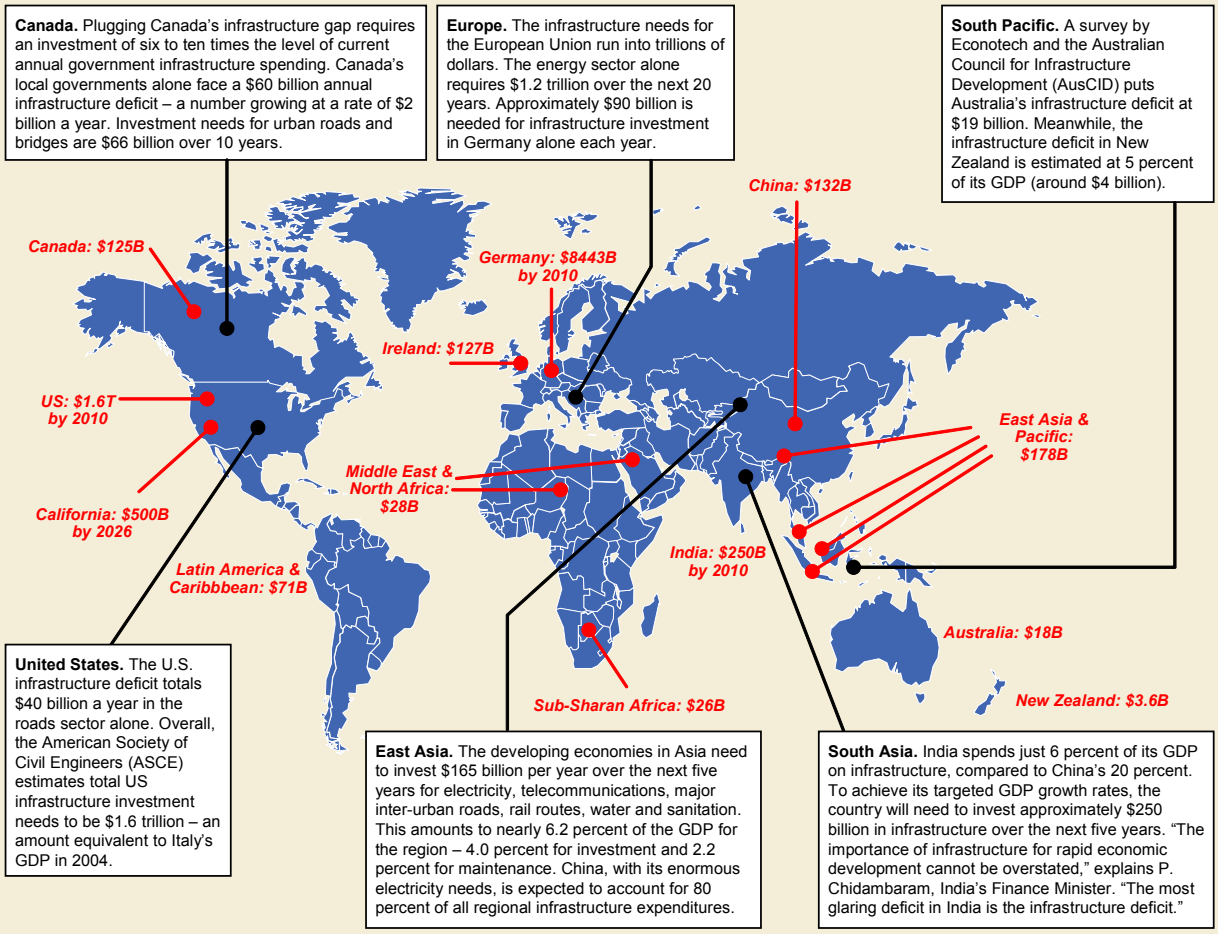
- Policy goals and objectives — What purpose does infrastructure play? Does replacing the infrastructure make sense, or is something more needed?
- Trade-offs among assets — What is the most appropriate use of infrastructure dollars? How should different asset classes be funded for a high return on investment?
- Asset performance — Is the asset meeting the performance requirements? What metrics exists to measure and manage performance?

[1] Deloitte Research (2007). Closing the Infrastructure Gap: The Role of Public-Private Partnership. Washington, D.C., Deloitte Research.

[2] Ibid.

[3] op cit.

Figure 1: Infrastructure funding gap is a world issue



Source: World Bank, American Society of Civil Engineers, McGill University, Project Finance, A&L Goodbody Consulting, Retailpage Australia, Business New Zealand, Government of India

- Rehabilitation and replacement strategies — What is the most appropriate strategy to improve the useful life of an asset? Should assets be rehabilitated or replaced?
- Program delivery — How can the infrastructure improvements be delivered with low disruption to the system?
- Finance and funding — What funding and financing approach provides the highest value for money for the asset owners and other stakeholders?

While the infrastructure crisis requires financial resources to address critical needs, sound business processes and practices are also needed to answer these questions and use the available resources effectively.

It's more than just a big deal

Clearly the infrastructure crisis is an immense, complex, multidimensional problem that challenges world governments, not just the United States. Yet contrary to doomsayers, it is not insolvable. Significant investment dollars are available for infrastructure investment for the right opportunity. U.S. policymakers have recognized this fact, as evidenced by the recent surge in interest in Public-Private Partnerships (PPPs) for transportation infrastructure by the Federal Highway Administration and a number of states.[4] PPP proponents touted the dollar value of the early deals and predicted even more. Investment banks and others chased the states looking for the next big deal. Yet, many of these early initiatives have slowed due to public controversy. This is not surprising to us, because PPPs are complex deals that often span decades, and typically relinquish control of assets that are normally publicly held to private, at times even foreign, entities.

Resolving the infrastructure crisis is much more than putting together a financial deal. Stakeholders in both the public and private sectors need a perspective that defines the life cycle of infrastructure projects and puts the transactions in the proper context (see Figure 2).[5]

Seeing the big picture: The infrastructure transaction life cycle model

The Infrastructure Transaction Life Cycle Model shown in Figure 2 defines the overall life cycle of infrastructure management and the key activities that must occur within each phase. This is a simplified view, but also a powerful tool to:

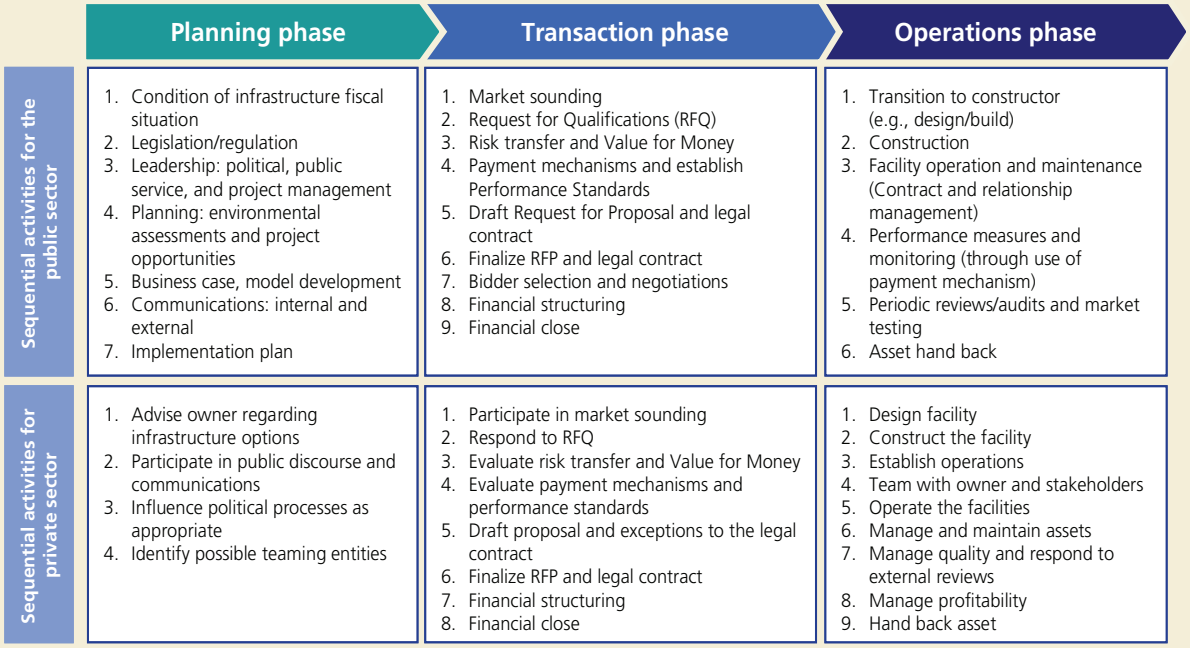
1. Define the scope and key activities of the infrastructure transaction
2. Identify potential stakeholders and others in the infrastructure transaction
3. Identify critical capabilities needed for the public and private sector to be effective in each phase of the infrastructure transaction

Let's take a closer look at each dimension of the model.

[4] SAFTEA-LU (The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users) authorizes the use of innovative funding, and states such as Texas, Indiana, and Virginia have established PPPs.

[5] Adapted from Saad Rafi, Unpublished Graphic. Toronto, Canada.

Figure 2: Infrastructure transaction life cycle model provides the framework for the public and private sector



1. Define the scope and key activities of the infrastructure transaction

Infrastructure projects are more than just the deal itself — the Transaction Phase. Critical activities must be accomplished before and after the transaction. The Life Cycle Model includes three phases and their associated key activities:

- Planning phase — Effective infrastructure strategies begin with planning. Strategic planning should drive all policy decisions about infrastructure, and each party to a transaction has a stake in the planning:
  - Government needs to understand the true condition of its infrastructure and explore, with the help of the private sector, the many options for addressing infrastructure needs.
  - Asset owners need the legislative and policy framework to support innovative finance approaches as well as the understanding and support of stakeholders, both public and private, to seriously address the infrastructure crisis.
  - Private sector organizers must develop an effective investment structure to offer the highest after-tax return on investment for various types of potential investors (e.g., taxable business, pension funds, private equity) from diverse geographical locations in order to efficiently raise funds from the global capital market.
- Transaction phase — Only after the groundwork is laid in the Planning Phase is it feasible for some type of transaction to occur. This may be a PPP arrangement or a variety of other possible transactions to provide the necessary resources. Careful management throughout this phase by both the public and private sector is essential for government to receive high value for the money that changes hands.
- Operations phase — During the Operations phase, the infrastructure asset is improved, put into operation, and managed. This may involve the private sector building and operating the facility. Infrastructure condition is monitored and maintenance performed to increase the expected life of the asset. This phase then loops back to the initial Planning Phase, as government responds to new infrastructure needs and policy objectives.

We believe these three phases and associated activities are fundamental to addressing the infrastructure crisis and provide the framework for effectively implementing infrastructure transactions.

2. Identify the public and private sector stakeholders

Effective infrastructure transactions depend on effective relationships among the various stakeholders at each phase. Identifying these stakeholders is the necessary first step. Infrastructure stakeholders are either the public sector entity that owns the asset or the private sector entity that has some involvement in financing, constructing, or operating the infrastructure. The potential stakeholders change during each phase of the infrastructure life cycle, as the transaction moves from the planning phase to the transaction phase and then into operations. Table 1 shows some of the potential stakeholders at each life cycle phase.

Table 1: Potential stakeholders by life cycle phase for public and private sectors

Life cycle	Planning	Transaction	Operations
Public sector	• State executives and legislatures • Planning agencies • Funding agencies • Agencies owning the asset	• Planning agencies • Funding agencies • Agencies owning the asset	• Agencies owning the asset • Regulatory and compliance agencies
Private sector	• Investment banks • Private equity firm • Concessionaires • Attorneys	• Investment banks • Private equity firms • Engineering firms • Construction firms • Facility operators • Concessionaires • Attorneys	• Investment banks • Private equity firms • Facility operators • Concessionaires

3. Identify and define capabilities

By defining critical activities and potential stakeholders, the Life Cycle Model also points to the capabilities the public and private sectors need to complete the infrastructure transaction. Table 2 identifies the important capabilities at each phase.

Table 2: Critical competencies by life cycle phase for public and private sector stakeholders

Life cycle phase			
Sector	**Planning**	**Transaction**	**Operations**
Public sector	• Strategic planning • Financing assessment/ fiscal needs assessment • Capital plan development and budgeting • Legislative/ regulatory review • Risk assessment • Project management • Stakeholder management • Program management • Performance management • IT system design and development • Communication management	• Planning agencies • Funding agencies • Agencies owning the asset	• Agencies owning the asset • Regulatory and compliance agencies
Private sector	• Market and opportunity assessment • Valuation • Risk assessment • Top side structuring for tax-effective investment structuring • Tax evaluation for prospective business operation • Program management	• Financial due diligence • Risk assessment • Valuation • Program management • Tax review • Structuring investment vehicles • Repatriation and distribution planning • Merger and acquisition due diligence	• Construction management • Ongoing project oversight and monitoring • Relationship management • Risk management • Program management • Performance management • Transportation operations • Financial audits • Communication management • Domestic and cross border tax compliance (withholding tax, annual reporting)

As Table 2 shows, the technical capabilities required are extensive. Let's consider a few.

Financial modeling (transaction phase — public sector)

Both before and during the selection of a concessionaire, public sector agencies considering PPP transactions must thoroughly understand the financial implications of the transaction. The agency must be able to model various opportunities and evaluate the potential benefits of each. This capability is critical to the agency's ability to make effective decisions.

Concessionaire due diligence (transaction phase — private sector)

Concessionaires or their financial collaborators considering investing millions of dollars in potential PPP opportunities want to know that these opportunities are viable and well-structured before investing. They require an assessment of: the organization and experience of the Engineering, Procurement and Construction (EPC) team; the current status of a project; the reasonableness of the construction estimate and schedule, the operations and maintenance plan; the overall approach by the EPC team and the operations team; and the ownership and structure of the EPC and operator in relation to construction administration matters. This information is critical to the concessionaire and their financial collaborator's decision-making process.

Change management (operations phase — public sector)

Effective infrastructure management requires more of public sector managers, especially when PPP models are used. In these circumstances, the public sector must work effectively with the private sector to provide needed infrastructure, a shift that dramatically changes the relationship from a traditional contract-for-services model to a much tighter arrangement. This shift requires public sector managers to acquire new business processes and, more importantly, new management skills and methods.

It system design and development (planning and operations phase — public sector)

Public sector executives require timely and accurate information to manage the condition and performance of the infrastructure. This requires sophisticated asset management and reporting systems that can help decision makers make complex decisions regarding the operation, maintenance, and replacement of infrastructure assets. Decision makers require a framework of performance metrics that reflects the agency's strategic and operational objectives, and data capture systems that reliably report the performance metrics to enable effective decision making. These data systems must be integrated with and support the agency's overall strategic planning and asset management processes.

Top-side structuring (planning phase — private sector)

During the business planning stage, a prospective operator or investor must develop a blueprint for tax-effective investment structuring that may include the following:

- Developing tax-efficient funding strategies and a tax-sensitive structure (especially for cross-border investment) for the intended investors; determining debt leveraging level (allocation between debt vs. equity financing); using hybrid instruments and considering other tax-efficient structuring planning tools; and considering a tax-efficient repatriation strategy and exit strategy for expected investors.
- Developing a tax-sensitive structure of investment holding; choosing a tax-advantageous jurisdiction and a tax-efficient entity type (regular corporation, LLC, partnership, trust, REIT, etc.) for the holding company, funding company, operating entity, mixer entity, blocker company, etc.; and determining each legal entity's capital structures and use of U.S. check-the-box rules related to entity classification.
- Selecting investors with the appropriate tax profile for the selected investment structure, such as U.S. taxable corporations, U.S. individuals, U.S. pension funds, foreign taxable corporations, foreign individuals, foreign governments, and other tax-exempt entities. Relevant income tax treaties should also be considered.
- Considering income and transfer tax consequences upon exit, including U.S. FIRPTA tax, when structuring the investment.

These are only a few of the capabilities that public and private sector stakeholders must possess to effectively implement an infrastructure transaction. Clearly, the range of capabilities is

beyond those of a single public or private organization. Instead, the public and private sectors must form teams to provide the required capabilities.

Conclusion: money, know-how, and collaboration are the keys

The global infrastructure crisis is beyond the financial or operational capabilities of any single government owner and requires the development of Public-Private Partnerships to provide the necessary technical, financial, operational, and management resources to properly address the challenge. The Infrastructure Transaction Life Cycle is a useful model for public and private sector stakeholders to work together effectively. It can help each party understand how transactions evolve, the critical activities that must be performed at each phase, the range of potential stakeholders, and the competencies that are required to complete infrastructure projects effectively. Money will always matter in the quest to repair our aging infrastructure, but no more than the ability of the public and private sectors to pool their capabilities and work together.

About the authors:

Charles Thompson is a senior lead with Deloitte Consulting LLP responsible for delivering large systems integration projects for state government. His more than 18 years of experience managing information systems and business process changes for clients in the public sector includes extensive work with transportation and human services agencies. He is a Project Management Professional (PMP) and Certified Information Systems Auditor (CISA).
Contact: chathompson@deloitte.com

John Cullian is a senior manager in the Capital Projects Consulting practice of Deloitte Financial Advisory Services LLP. He focuses on providing process and controls assessments, project management oversight services, and assessments of troubled projects for clients with major capital programs.
Contact: jcullian@deloitte.com

Albert Bloomsbury is senior manager at Deloitte Tax LLP's International Tax Services Group. He has over 15 years of experience advising on a broad range of international tax matters as well as cross-border and domestic leasing, public-private partnership (PPP) and infrastructure investment fund structuring, project financing, and foreign currency and hedging issues.
Contact: abloomsbury@deloitte.com

Ryan Englebretson is a manager in the Enterprise Risk Services practice of Deloitte & Touche LLP. He advises clients on improving business and information technology processes to achieve greater internal control efficiency and effectiveness.
Contact: renglebretson@deloitte.com