Creating Value Through Private-Public Partnerships for Infrastructure Development

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EXECUTIVE SUMMARY

1. **There is an enormous need for infrastructure investment in Asia…**
   - **Asia needs to spend at least US$165 billion annually on infrastructure from 2006 to 2010**
   - **There are 4 types of infrastructure assets – regulated assets (e.g., electricity, water); transportation assets; long-term assets (e.g., power generation plant with long-term contracts for input); social infrastructure. Each has its own advantages and risks**

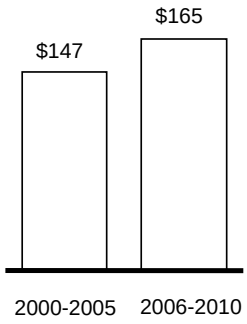
2. **The public sector can't do it by itself – governments can't fund investments as they traditionally have and infrastructure investments are more efficient and effective when done in cooperation with the private sector - a rapid increase in private-public partnerships (PPPs) is expected**

3. **But creating value from infrastructure investments is getting harder**
   - **Rapid changes in the market make focusing on ROI imperative, and increasing project risks and complexity**
   - **We estimate that the difference between 'doing it well' versus 'average performance' today is worth between $16-20 billion a year**

4. **Getting it right will require…**
   - **An institutional framework for investors to take on risk**
   - **Careful project design, structuring, and management**

ASIA NEEDS TO SPEND ENORMOUS SUMS ON INFRASTRUCTURE

Total annual spending on infrastructure in Asia 2000-2010
US$ billions



- **Electricity, telecommunications, railroads, water and sanitation**
- **Spending equals 6.2% of GDP in the region, 4.0% of which is investment, 2.2% for maintenance**
- **China alone is expected to account for 80% of infrastructure expenditures in the region**
- **Electricity in China comprises 44% of total annual infrastructure expenditures in the region**

Source: ADB-JBIC-World Bank East Asia Pacific Infrastructure Flagship Study

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EACH TYPE OF INFRASTRUCTURE ASSET HAS ITS OWN ADVANTAGES AND RISKS

	Regulated assets	Transportation assets	Long-term contracted	Social infrastructure
Example	• High voltage electricity transmission • Local distribution of electricity and gas • Long distance gas transmission • Water and waste water	• Toll roads, bridges, and tunnels • Airports • Ports	• Power generation plant with power purchase agreement and long-term contracts for input	• Schools • Hospitals • Prisons
Pros	• Attractive ROEs (especially in the U.S.) • Returns have attractive characteristics – Low volatility – Positive correlation with inflation – Low correlation with public equities • Assets have high barriers to entry	• Few competitors • Variation from asset to asset but underlying cash flows can be attractive, particularly when underlying assets are monopolistic	• Potentially higher returns than other sub-assets • Contracts may transform cash flows of long-term contracted assets (such as power generation) and generate stable returns • Established risk management structures exist (e.g., credit derivatives) • Somewhat smaller than regulated assets or transportation assets	• Depending on the project, cash flows may be fully contracted with little operating risk • Growing market (particularly in the UK) • Somewhat smaller than regulated assets or transportation assets
Cons	• Typically very large investments • Regulatory risk • Upside limited by regulation • Generally lower returns than other categories • Regulatory process is complicated, time consuming, and expensive	• Often very large investments • Revenue based on usage levels, which can fluctuate • Risk of competition (e.g., alternative routes or modes of transportation)	• Counterparty risk • Inflation indexed, driven by contract • Recontracting risk	• Government as counterparty • Political and communication sensitivity

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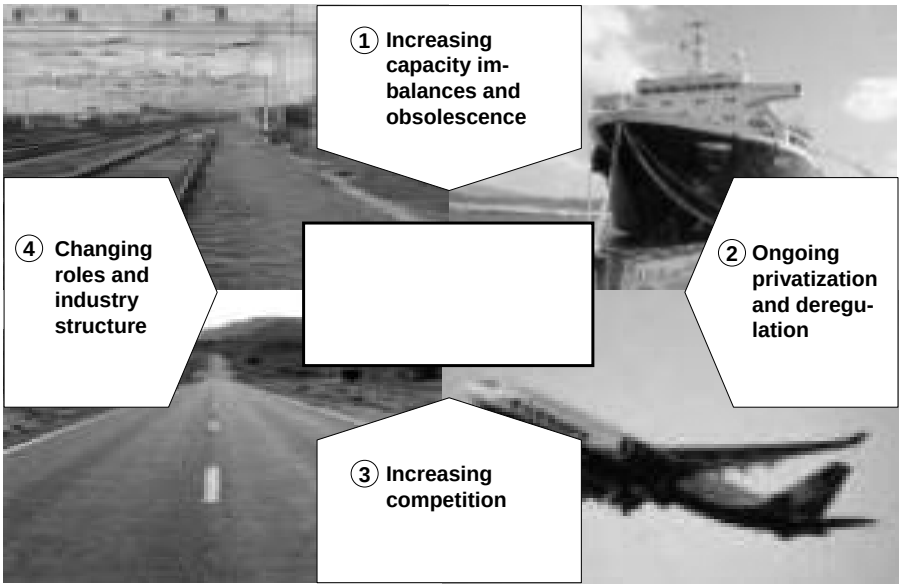
IT'S GETTING HARDER TO CREATE VALUE



Source: Team analysis

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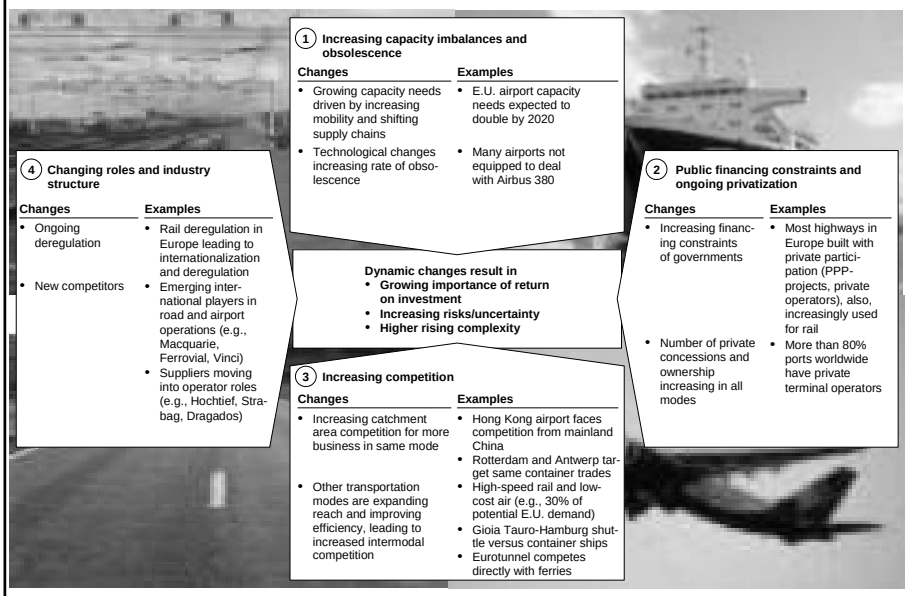
IT'S GETTING HARDER TO CREATE VALUE

DETAILS



1 Increasing capacity imbalances and obsolescence

Changes	Examples
• Growing capacity needs driven by increasing mobility and shifting supply chains	• E.U. airport capacity needs expected to double by 2020
• Technological changes increasing rate of obsolescence	• Many airports not equipped to deal with Airbus 380

4 Changing roles and industry structure

Changes	Examples
• Ongoing deregulation	• Rail deregulation in Europe leading to internationalization and deregulation
• New competitors	• Emerging international players in road and airport operations (e.g., Macquarie, Ferrovial, Vinci)
	• Suppliers moving into operator roles (e.g., Hochtief, Strabag, Dragados)

Dynamic changes result in
- **Growing importance of return on investment**
- **Increasing risks/uncertainty**
- **Higher rising complexity**

2 Public financing constraints and ongoing privatization

Changes	Examples
• Increasing financing constraints of governments	• Most highways in Europe built with private participation (PPP-projects, private operators), also, increasingly used for rail
• Number of private concessions and ownership increasing in all modes	• More than 80% ports worldwide have private terminal operators

3 Increasing competition

Changes	Examples
• Increasing catchment area competition for more business in same mode	• Hong Kong airport faces competition from mainland China • Rotterdam and Antwerp target same container trades
• Other transportation modes are expanding reach and improving efficiency, leading to increased intermodal competition	• High-speed rail and low-cost air (e.g., 30% of potential E.U. demand) • Gioia Tauro-Hamburg shuttle versus container ships • Eurotunnel competes directly with ferries

Source: Team analysis

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NEED FOR STRONGER ROI ORIENTATION DUE TO INCREASED RISKS AND UNCERTAINTY

Increasing need for measurable ROI	Higher risk	Growing complexity
• Must **deliver value at each point of the value chain** (BU focus) because of growing disaggregation in operators, customers, and suppliers • **Stronger ROI orientation** as result of growing involvement of private equity and shareholders and increased account-ability of governments on spending taxpayers' money	• **Increasing uncertainty** of market demand and customer behavior • Must cope with **higher risk of obsolescence** (both on hardware and software side, e.g., traffic control systems) due to acceleration of technolo-gical developments • **Complex new contractual relationships** requiring professional risk management over the whole project life cycle	• Rising project complexity due to **increasing number of players** in infrastructure projects, which result in more interfaces, changing roles, multiple financial, and regulatory models • **Planning complexity** accelerates as asset owners, infra-structure and service operators are increasingly separated

Source: Team analysis

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THE DIFFERENCE BETWEEN GETTING IT RIGHT OR WRONG HAS BIG COST IMPLICATIONS

□ Planned
■ Actual

Example	Budget overruns € bn	Delays and start-up problems	Incorrect capacity & revenue plans	Total value lost vs. plan € bn
Eurotunnel 	7.5 → 15.0	• 6 months delay • 18 months of unreliable service after opening	• Overestimated market share gain in freight and pax by 200%	~7.5
High-Speed Rail Frankfurt-Cologne 	4.5 → 6.0	• 1 year delay of construction • Legal and technical issues	• Unforeseen capped govern-ment funding	~1.5
Betuwe Line NL (cargo rail) 	2.3 → > 5.0	• 1.5* year delay of construction • Technology choices still not finalized	• Annual revenues shortfall of €20mn	~3.0
Kuala Lumpur 	2.0 → 3.5	• Initial issues with connectivity to downtown area • Complaints about facility hygiene levels	• Handles only ~60% of current capacity • Losing market share to Singapore	~1.5

* Project still not finalized and costs could go even higher

Sources: Annual reports; Reuters; Jane's Airport Review; team analysis

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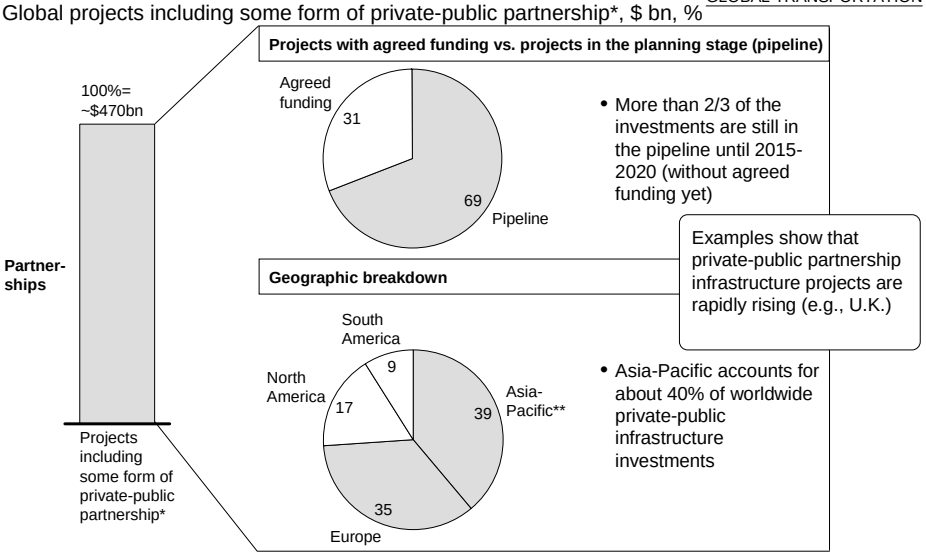
THE PUBLIC SECTOR CAN'T DO IT ALL: THE NEED FOR PRIVATE-PUBLIC PARTNERSHIPS FOR INFRASTRUCTURE INVESTMENTS IS EXPECTED TO GROW

ROUGH ESTIMATES
GLOBAL TRANSPORTATION

Global projects including some form of private-public partnership*, $ bn, %



- More than 2/3 of the investments are still in the pipeline until 2015-2020 (without agreed funding yet)
- Asia-Pacific accounts for about 40% of worldwide private-public infrastructure investments

Examples show that private-public partnership infrastructure projects are rapidly rising (e.g., U.K.)

* Projects up to 2015-2020 that are planned, funded, or in execution
** Including Africa and Middle East

Sources: Public Works Financing; team analysis

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PPP EFFECTIVENESS

- **Price and timing certainty**
  - Only 24% of PPPs late vs. 73% for public projects
  - Only 22% of PPPs over budget vs. 73% of public projects
  - These risks born largely by private participants
- **Better services**
  - In the end Government / taxpayer still pays, but reason you do this is to get better performance
- **Innovation**
- **Catalyst for public sector reform**
  - Pinpoint reaching to where public efficient already
- **Catalyst for capital markets and international role**

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AN INSTITUTIONAL FRAMEWORK NEEDS TO BE IN PLACE FOR INVESTORS TO TAKE ON RISK

- **Institutional framework – need clear contracting environment to ensure competition, quality delivery, proper risk transfer, certainty to private sector that contracts will be enforced**
- **Government expertise – need skills for government to protect itself, ensure risk transfer, make decisions, act rapidly, and manage a portfolio of projects**
- **Risk transfer – need to adequately shift risk to the private sector**
- **New risks for the private sector – need framework for enforcing contracts against a country**

- **ADB and the World Bank have been effective in helping provide 'institutional framework' and risk environment for private sector players in emerging countries (e.g., Laos)**

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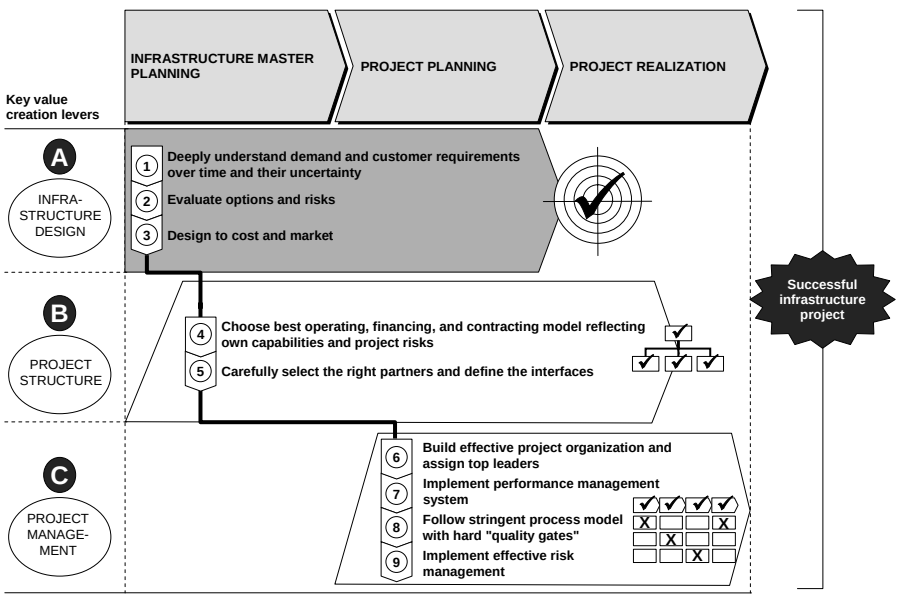
CAREFUL PROJECT DESIGN AND MANAGEMENT IS CRITICAL



Source: McKinsey analysis

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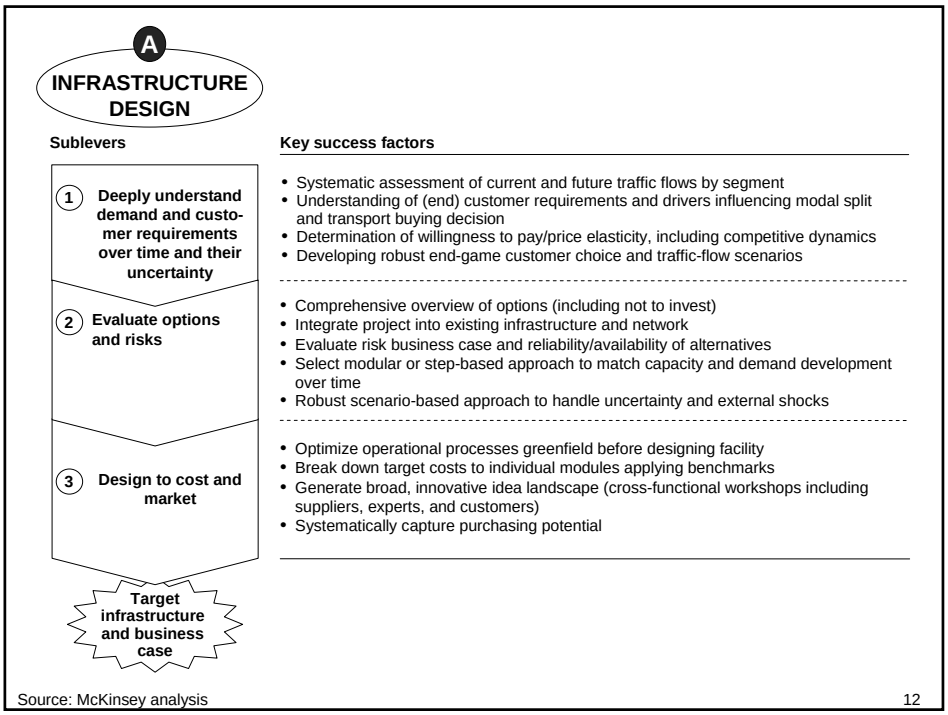

Source: McKinsey analysis

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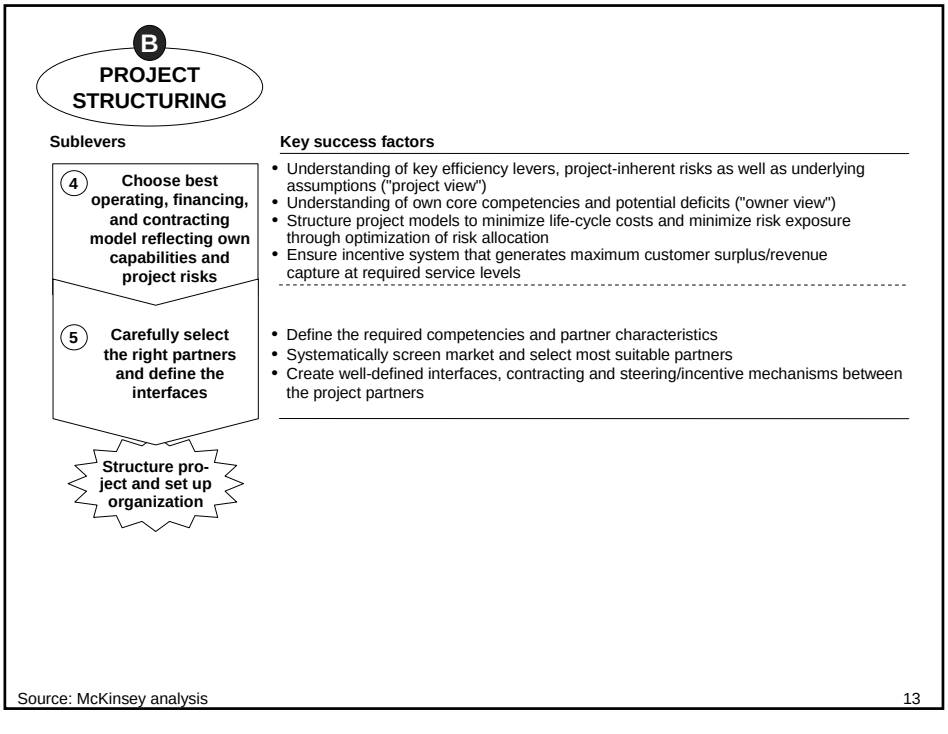

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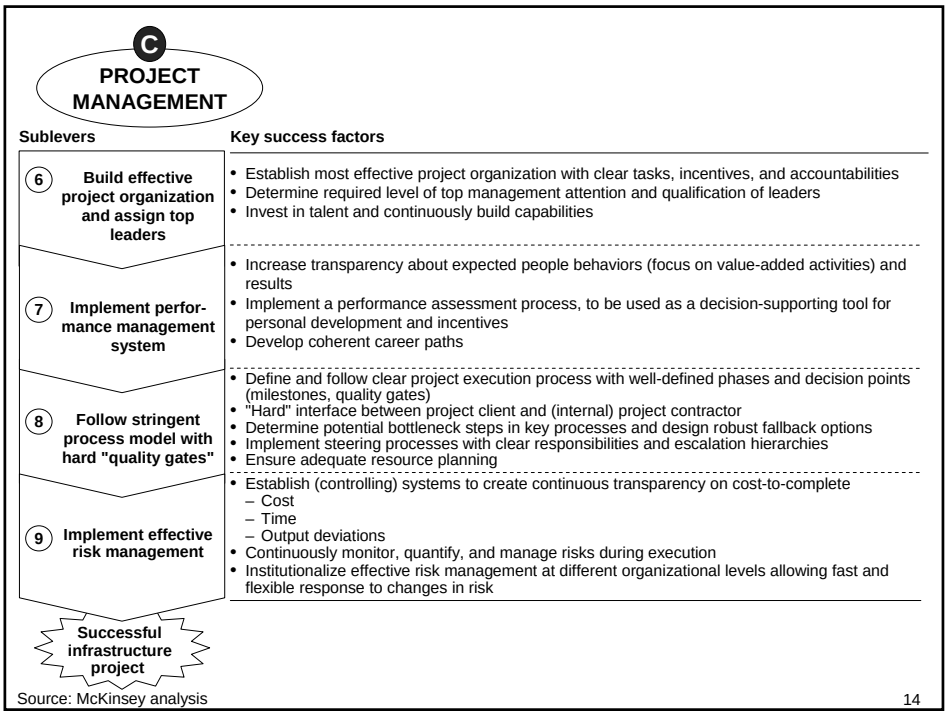

Source: McKinsey analysis

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