Financing Models and Risk Management

June 6, 2017
Infrastructure – An Investment Worth Making

We cannot afford to wait.

- **The Cost of Doing Nothing**
  - Deferred Maintenance
  - Inflation
  - Increased Congestion / Limited Capacity
  - Closures / Systemic Failures

- **The Need to Address Critical Infrastructure**
  - You need a place to live
  - Your house needs a roof

- **Stretching Dollars Further Utilizing P3**
  - Accelerated Project Delivery
  - More Efficient Project Management
  - Greater Innovation
  - Lower Life Cycle Cost
P3 Basics
Key Considerations

• Typically partially / wholly **financed** by debt leveraging project revenues
  • Revenue streams: lease payments, some form of direct user fee (toll)
  • Revenues supplemented by money, right-of-way, or other contributions
• Private partner *will* make an **equity** investment; in long-term lease structure, likely will make upfront payment
• Public partner *may* need to make upfront payment (e.g., milestone payments) to reduce capital cost financing
• Private partner *may* be required to assume partial or full **revenue risk**
  • Revenue generators (or hybrid)
• May be structured as an **availability payment**
  • Non-revenue generators (or revenue doesn’t cover)
• May be structured as **lease-leaseback (long-term lease)**

• **Drivers:** Revenue Stream, Risk Appetite, Scale, Market, Lenders
P3 Basics
Delivery Models

Degree of private sector accountability, integrated delivery, risk transfer, and extent of private financing
P3 Basics
Typical Structure: Availability Payment Model

90/10 Debt to Equity ratio is a Typical Structure for Availability Payment Projects

Agency

Services

Concession Agreement

Project Vehicle (SPV)

Debt 90%

Equity 10%

Return

Banks / Lenders

Project Sponsors / Equity Providers

DB Agreement

Design Build Contractor

Design & Engineering

Engineer

O&M Agreement

Operations & Maintenance Contractor
Funding
Public money made available to the project. This contributed capital is not intended to be repaid or carry a cost (i.e. interest or return on investment). Typical sources include:
- Availability Payments
- User Fee Revenue
  - Tolls
  - Fees/charges
  - Rent

Financing
Money provided by private investors to pay for construction costs, concession payments and other large project costs. This capital is intended to be repaid and does carry a cost (i.e. interest and return on investment). Typical sources include:
- Debt
- Equity
A Framework for Innovation

• Set the parameters
  • Counterparty Credit Quality
  • Appropriations Risk
  • Affordability and other Limits

• Be receptive to innovation
  • Establish a framework to assess alternate concepts

• Don’t be too prescriptive – allow the market to innovate
  • Funding types
  • Financing profiles
P3 Financing Packages

- **Traditional Governmental Finance Approach**
  - Governmental Purpose Bonds – Qualified Management Contract requirement means limited private involvement
  - Risk retention by the government
  - State revolving funds – EPA
  - Federal: WIFIA, USDA, CDBG, BOR, ACE and others

- **Public Private Partnership Approach**
  - Equity 10-30%
  - Debt 70-90%

- **Forms of P3 Debt**
  - Federal Sources Outlined Above plus
  - Private project finance market
  - Tax-exempt Private Activity Bonds (PABs) – state cap allocation challenge
  - Club Arrangements of Banks

- **P3 Equity Providers ($300B available in USA)**
  - Private Equity
  - Life Insurance Companies
  - Pension Funds
## Repayment Methods

<table>
<thead>
<tr>
<th><strong>Revenue Risk</strong></th>
<th><strong>Availability Payments</strong></th>
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</thead>
<tbody>
<tr>
<td>Private partner directly dependent upon sources of revenue collected by the operation of an asset to offset the capital investments made to deliver the asset</td>
<td>Project owner repays private partner for operating and maintaining that level of performance, throughout the life cycle of that asset</td>
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<tr>
<td>Private partner directly collects fees, fares or tolls</td>
<td>Project owner sets rates and retains all revenues</td>
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<tr>
<td>Private partner unable to collect revenue if asset is unavailable</td>
<td>Project owner levies punitive measure for non-availability</td>
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<tr>
<td>Private sector may see an “upside” and benefit from usage; or, may experience a “downside” if there isn’t sufficient usage of the asset</td>
<td>No private sector “upside” or downside and no private benefit from usage because the project owner retains demand risk</td>
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</tbody>
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**Examples:**
- 495 HOTLanes and I-95 Express, Virginia
- Texas A&M University, Texas
- North Tarrant Expressway, Texas

**Example:**
- I-595, Florida
- Goethals Bridge, PANY&NJ
# Standard Terms – Revenue User Fees

<table>
<thead>
<tr>
<th>REVENUE</th>
<th>DEMAND RISK</th>
<th>EXAMPLE</th>
<th>DESCRIPTION</th>
<th>RISKS &amp; CONTROL</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIXED-USE CHARGE FOR UTILIZATION OF ASSET</td>
<td>Fees, Fares, Taxes or Tolls</td>
<td>A ship is charged for the use of a port. - A car is charged a toll for using a bridge or tunnel.</td>
<td>Demand risk can be taken by the public or private entity or both. Typically, risks are borne by the private sector as this is how investment returns are achieved. Functional daily control of the asset can be outsourced to experts if desired. Ownership ALWAYS remains with the public entity.</td>
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<tr>
<td>AGREED UPON FEES FOR SERVICES PROVIDED</td>
<td>Campus Housing</td>
<td>Students pay for their room and board, and this “fee for service” is collected and directed to offset capital investments made to restore or modernize or build new campus housing.</td>
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<tr>
<td>VARIABLE USAGE FEES (MILEAGE-BASED, TIME-OF-USE BASIS)</td>
<td>Managed Lanes</td>
<td>Access to converted HOV (High occupancy Vehicle) lanes to ease congestion or provide alternative lanes for travelers, where a car is charged according to predetermined amounts, based on length of segment or time of day usage on managed lanes</td>
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# Standard Terms – Availability

<table>
<thead>
<tr>
<th>AVAILABILITY RISK</th>
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</thead>
<tbody>
<tr>
<td><strong>MILESTONE PAYMENTS FOR REACHING AGREED UPON DESIGN, PRE-CONSTRUCTION OR CONSTRUCTION GOALS.</strong></td>
<td>Design drawings completed to specified level to initiate construction.</td>
<td>Payments to the construction company and/or sponsor come due once a bridge is complete. The public sector takes minimal construction risk, but if project is completed as agreed, payments are made.</td>
<td>In availability projects, the construction, and at times performance risk of an asset is shifted to private sector. Public funds are only paid when construction is complete or services are delivered. Control typically transfer to public entity once construction requirements are met. Ownership ALWAYS remains with public entity.</td>
</tr>
<tr>
<td><strong>PAYMENTS FOR PROVIDING A FACILITY IN AN ACCEPTABLE CONDITION.</strong></td>
<td>Ensuring that facility meets performance and acceptable use standards.</td>
<td>Payments to concessionaire can be structured in a managed service contract. Private sector takes on responsibility for a single, fully integrated service solution for security, building maintenance, management of all day-to-day operations, and would only be paid when services are delivered.</td>
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</table>
# Standard Terms – Availability

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<th>HYBRID MODELS</th>
<th>EXAMPLE</th>
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<tr>
<td>REVENUE RISK FOR OPERATIONAL PHASE ASSUMED BY PUBLIC SECTOR.</td>
<td>Fare box revenue to offset investments, in DBFM when operations remain with public sector.</td>
<td>Availability to perform operations determines payment to private sector, while public partner takes on fare or fee collection.</td>
<td>Risks can be shared or remain with either the public or private entity, depending on the project and needs of the owner (public entity, sponsor).</td>
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<tr>
<td>LAND VALUE EXCHANGE (AIR RIGHTS, FAR OR DEVELOPMENT RIGHTS, TAX INCREMENT FINANCING (TIF)).</td>
<td>Off balance sheet transaction value to provide capital cash offset.</td>
<td>Sale of excess city land parcels to accommodate a consolidation of municipal facilities..</td>
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Financing Costs – a P3 Red Herring

Focusing on finance costs alone misses the significant advantages that a P3 structure offers the public sector:

1. Risk Transfer and Innovation;
2. Short and Long Term Budget Certainty; and
3. Matching long term revenues (tax or user fees) with long term expenses (availability payments)

There is no free lunch – costs and benefits need to be balanced
How the Model Works

Scenarios
Inputs by scenario
Outputs comparison

Inputs
Construction and Operations Timing
Technical Data
Financing Costs

Timing & Inflation
Model timelines
Timing flags
Inflation factors
Discount factors

Construction Period Calculations
Project costs
Debt drawdowns, interest and financing fees
Equity drawdowns

Operations Period Calculations
Project costs
Debt service and financial ratios
Equity return and repayment

Financial Statements
Summary

Key Outputs
NPV, IRR
Financial Ratios
Sources and users
Other outputs

Checks
### Example Screenshot of Input Tab

#### P3 - PRE-CONSTRUCTION

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<td>P3 - Public procurement costs (including compensation of losing bids) - Profile</td>
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#### P3 - TRAFFIC RAMP UP

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<tr>
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#### P3 - SUBSIDY / MILESTONE PAYMENT

|-----------------------------------------------------------|-------|--------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|            |
| P3 - Subsidy / milestone payment period timeline          |       |        | Year 1     | Year 2     | Year 3     | Year 4     | Year 5     | Year 6     | Year 7     | Year 8     | Year 9     | Year 10    |            |
Risk sharing is a key component and feature of P3s
- Partners exercise greater control and responsibility
- Integrated function (mitigates risk, creates efficiencies)
- Spreads risk over time (life cycle of asset)

Private Partner prices its risks
- VfM: assessing costs of transfer of risks to experts who can (best) manage
- Macro-economic risks, project risks, participants’ risks
- There are market-tested allocations, know them

Allocate parties better positioned to manage, or share
- Assign to third party (i.e., insurers)

Risk Management Best Practices
Risk Distribution
Risk Opportunities

• The financial elements and long term obligations provide risk opportunities that differ from other alternative contracting approaches

• Risk allocation is at the core of P3s:
  \[ \text{Risk transfer} = \text{Innovation Incentive} \]

• Transferring too little risk diminishes potential VfM

• Transferring too much risk (a risk that is unmanageable) results in contingency additives diminishing the VfM
Phased construction may lower overall costs or at least defer capital expenditures until actually required

Higher capital costs may result in lower life cycle costs providing an overall better project at lower cost

Higher capital costs may result in a better overall project – for example (toll project):

- Better mobility solution/enhanced traffic access
- Higher revenue/stronger financial feasibility.

Construction challenges with unique solutions may result in a lower cost yet result in a positive level of product performance that could not have been met with traditional risk/contracting approaches
Risk Analysis and Management

Risk Transfer

Public Responsibility

- Design-Bid-Build (DBB)
- Traditional Project Delivery

Alternative Project Delivery

- CM/GC
- Design-Build (DB)
- Design-Build-Finance (DBF)
- Alliancing (Equal Responsibility and Shared Risk)

Increasing Private Responsibility

- Public-Private Partnership (P3) (Concession – Revenue Risk)
- Design-Build-Finance-Maintenance-Operation (DBFOM) (Availability Payment – No Revenue Risk)
Risk Analysis and Management

Typical Risk Allocations between public/private

Construction
- Accuracy and Design Completion
- Environmental policy requirements
- Labor Agreements
- Scope Changes
- Cost Growth

Financial
- Schedule
- Interest Rate

Operational
- Revenue
- Level of Service
Risk Analysis and Management

Risk Rating = Likelihood x Severity

Preferred approach:

Dividing severity into two 5 point components of cost impact and schedule impact for a possible score of 10 with likelihood of 5 points and a total possible of 50 tends to provide a better analysis.

This approach allows mitigation planning to reduce all three categories and reflect a truer adjusted score.

Standard Example Risk Matrix (with discussion around valuing likelihood/severity of risks)
Value for Money – What matters to you

• There are many ways to achieve effective risk transfer through the use of private funding tools.

• Identify what matters for each project:
  • Risk management, transfer or elimination
  • Minimize project costs
  • Maximize project scope

• Select from the vast toolkit of available models
  • Balance the amount, timing and type of public funding
Value for Money (VFM)

<table>
<thead>
<tr>
<th>Traditional Procurement</th>
<th>Public</th>
<th>Private</th>
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<tbody>
<tr>
<td>Financing</td>
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<tr>
<td>Construction Permits</td>
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<td>3rd Party Permits</td>
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<td>Geotechnical</td>
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<tr>
<th>P3</th>
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<td>Geotechnical</td>
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Each Risk has a “Value”. The optimized allocation of specific risks occurs when risk is assigned to the party which can mitigate or manage the risk more efficiently.
Value for Money

→ Value for Money (VfM) analysis is a process used to compare the financial impacts of a P3 project against traditional public delivery alternatives. The process to establish VfM includes:
  ▪ Creating a Public Sector Comparator (PSC), which estimates the whole-life cost of carrying out the project through a traditional approach;
  ▪ Estimating the whole-life cost of the P3 alternative (either as proposed by a private bidder or a hypothetical “shadow bid” at the pre-procurement stage); and
  ▪ Comparing results.

→ Value for Money is an industry-accepted decision driver.