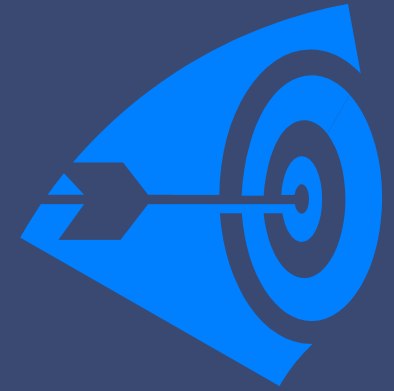


# Course: Business models and Public Private Partnership (PPP) for e- Governance Project

## Day 1

### Session 3: Introduction to business models

# Agenda



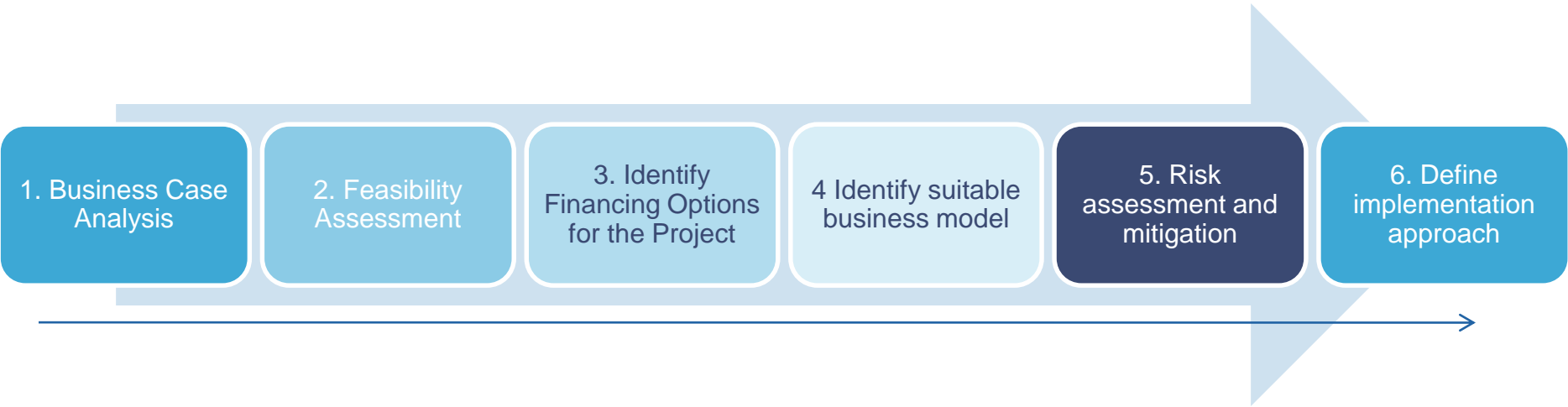
- Introduction to business/implementation models
- Implementation, pricing/payment models for e-Governance projects
- Strategic considerations for evaluation of implementation models
- Evaluation of benefits and risk for various implementation models

# Understanding business model in simple terms...

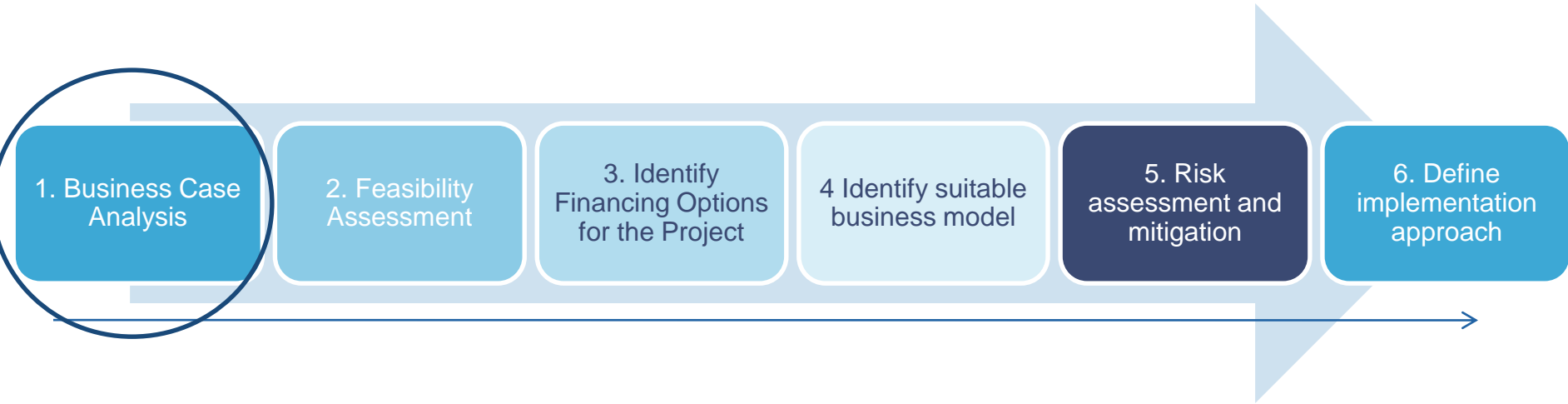
*A Business model for a project should address/answer the following*

- How much does it cost to create and maintain the project?
- Is the project feasible?
- Who is funding for the Project?
- Who is developing or implementing the project?
- Who is paying for the project?
- What are payment terms?
- Roles and responsibilities of the parties concerned with the business model
- Duration of the contract.... Etc...

# Approach for Development of a Business Model



# Approach for Development of a Business Model



# Business Case Analysis (BCA)

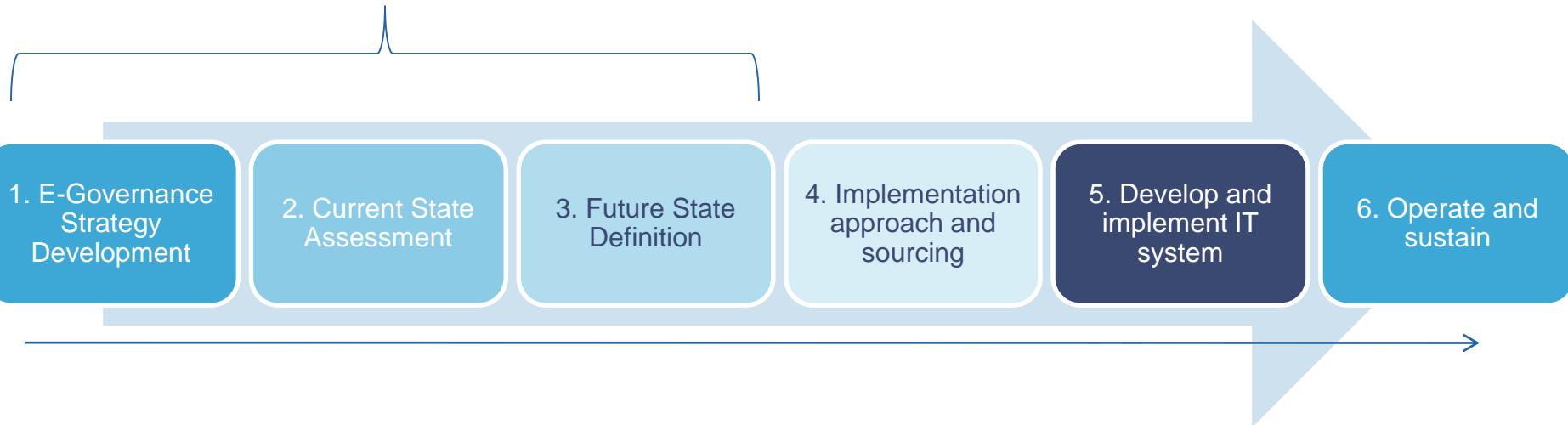
*BCA is aimed to:*

- Assess the needs of the stakeholder
- Assess the need for the project
- Identify the project objectives and project benefits
- To define the outputs and outcomes of the project
- Assess the learnings from similar implementations in the country and globally.....
- Define the requirements and scope of the project

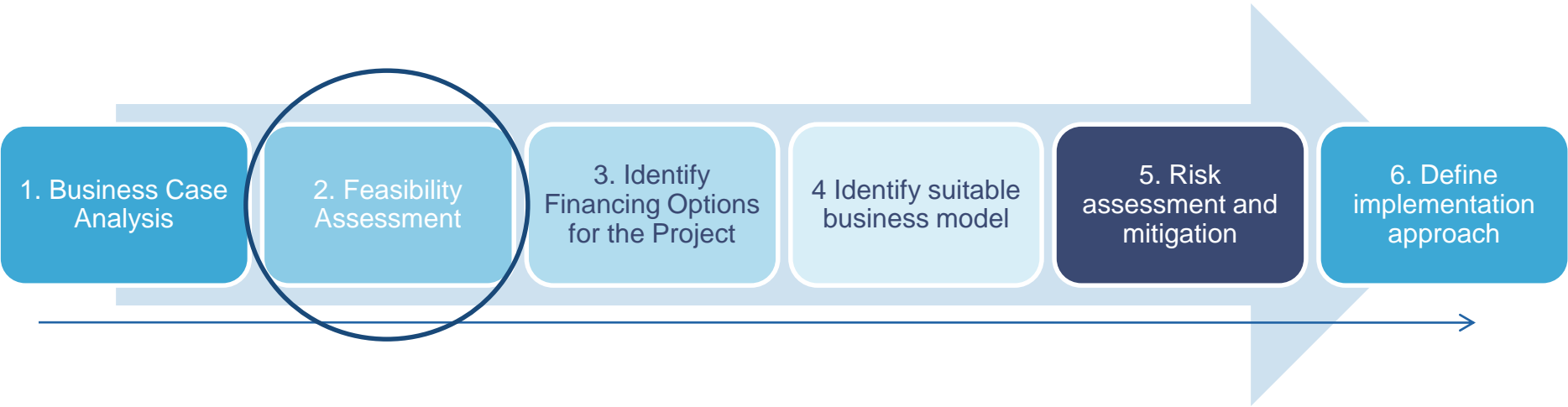
*in summary, to establish the business case for undertaking the project*

# When is BCA performed in E-Governance Project Lifecycle

*Business Case Establishment and project definition happens during these phases*



# Approach for Development of a Business Model





# Feasibility Assessment

Feasibility Assessment is carried out in several ways:

- Justification for the project – is addressed through Business Case Analysis
- Technical feasibility of the project – addressed through solution evaluation and benchmarking with domestic and global experiences in similar context
- Financial feasibility
  - Is the planned budget sufficient for the expected investments needed for the project (creation and maintenance) Or Can the project be undertaken within the available budgets?
  - Are project budget, expected funding (including external funding sources) and revenues (services charges, transaction fees..) sufficient for project creation and maintenance?
  - Is there sufficient market size for the private partner?
  - Will this project be profitable for the private partners and will there be sufficient interest from private partners in the project?
  - What should be viability gap funding to address the profit requirements of the private partners to achieve the minimum/standard Internal Rate of Return...

# Feasibility Assessment

- Financial feasibility
  - In most e-Governance projects financial feasibility assessment is not performed
  - The project costs are estimated and necessary budgetary provisions are made based on the project cost or project features are modified to suit the budgeted project cost
  - Financial feasibility assessment plays key role in
    - When a project is expected to provide returns to the government or the private implementation partner through user/service charges and
    - The investments and profits are expected to be realized through the services delivered through the created project etc...

# Financial Feasibility Assessment

Before we understand financial feasibility assessment approach, its important to know:

1. Net Present Value (NPV) and
2. Internal Rate of Return



What is NPV and IRR???

# Net Present Value or Time Value of Money

- E governance projects (non-consulting projects) generally are for longer periods and durations (3 to 5 years)
- Basic principles:
  - Net Present Value of investments needed for a project is present values of future cash flows
  - A rupee today is worth more than a rupee tomorrow (a million rupees was a huge amount few years back, probably not of the same value currently)...
  - Present value depends on the
    - forecasted cash flows of the project
    - opportunity cost of the capital or the expected rate of return

# Net Present Value or Time Value of Money (contd..)

How to calculate NPV?

$$NPV = \sum \frac{C_t}{(1+i)^t}$$

- $C_t$  = Amount of Cash flow (inflow – outflow). General inflow to the government is '0' but for PPP projects or in case of penalties (not a desirable inflow)
- $i$  = discount rate (or rate of return that could be earned on an investment)
- $t$  = time of the cash flow (year 1, year 2...)

# Net Present Value or Time Value of Money (contd..)

General approach for projecting the project investments by the government

Year	Cash flow (in Rs)
0	20 Crores
1	3 Crores
2	3 Crores
3	3 Crores
4	3 Crores
5	3 Crores
Total project cost estimated for five years without NPV	<b>35 Crores</b>

# Net Present Value or Time Value of Money (contd..)

Arriving at NPV for the projected project investments by the government:

Year	Cash flow (in Rs)	NPV Formula	Present Value
0	20 Crores	$=-200000000 / (1+.07)^0$	$=-200000000$
1	3 Crores	$=-200000000 / (1+.07)^1$	$=-28037383$
2	3 Crores	$=-200000000 / (1+.07)^2$	$=-26203161$
3	3 Crores	$=-200000000 / (1+.07)^3$	$=-24488936$
4	3 Crores	$=-200000000 / (1+.07)^4$	$=-22886856$
5	3 Crores	$=-200000000 / (1+.07)^5$	$=-22886856$
	<b>35 Crores</b>		<b><math>=-324503194.1</math> i.e. 32.45 crores</b>

- Sum of total cash flows in general method in column two indicates 35 crores as the total outflow in five years, where as NPV for the projected investment is 32.45 crores only..
- The present values are shown in negative as cash flows are only outflows and there are no inflows for government in the project

# Net Present Value or Time Value of Money (contd..)

Arriving at NPV for the projected project investments and expected revenues by the private partner:

Project Year	Investment	Revenue
Year 1	30000000	0
Year 2	7500000	17500000
Year 3	7500000	17500000
Year 4	5000000	17500000
Year 5	5000000	17500000
<b>Total in five years</b>	<b>55000000</b>	<b>70000000</b>

From the table above:

- A private partner is investing 5.5 crores over a period of five years
- Realising revenues of seven crores over five years
- What is the profit made by the private partner in the project????

1.5 Crores?

No



# Net Present Value or Time Value of Money (contd..)

Arriving at NPV for the projected project investments and expected revenues by the private partner:

Project Year	Investment	Revenue	Profits accrued year wise for investments
Year 1	30000000	0	-28037383.18
Year 2	7500000	17500000	8734387.283
Year 3	7500000	17500000	8162978.769
Year 4	5000000	17500000	9536190.151
Year 5	5000000	17500000	<del>8912327.244</del>
<b>Total in five years</b>	<b>55000000</b>	<b>70000000</b>	<b>7308500.268</b>

The real profit for the private partner is ..... lakhs, not 1.5 crores...

- Private partner is investing high amount in year 1
- Revenues are realised only over five years
- Net present value of future revenues is lower....

# Internal Rate of Return

- Rate of return or discount rate which makes Net Present value(NPV) equals to zero
- At IRR,  $NPV=0$
- Cost of Capital
  - The cost of capital is the rate of return which can be received if the money is invested in other opportunities of similar risk.
- Generally project is acceptable if IRR is greater than the opportunity cost of capital.

# Why Calculate NPV and IRR?

- To understand the Project Value in current terms with cash outflows spread across years
- To understand how much funding support may be needed from Government
- To assess the risk and rewards of the project
- To verify whether the project is lucrative enough to attract private sector efforts and investments
- To ensure that project concepts and designs don't fail in the field due to lack of financial feasibility...

# IRR for Government and Private Sectors

## IRR Focus for Government:

- Achieving project objectives
- Economic development
- Social Welfare
- Better access to healthcare and education
- Improved service delivery
- Improved transparency
- Creation of quality infrastructure...

## IRR Focus on Private sector:

- Financial gains on investment

# What will you do with arrived NPV and IRR Values???

## NPV can be used to:

- To understand the Project Value in current terms with cash outflows spread across years
- To understand how much funding support may be needed for the project
- To assess the risk and rewards of the project
- To verify whether the project is lucrative enough to attract private sector efforts and investments
- To ensure that project concepts and designs don't fail in the field due to lack of financial feasibility...

## IRR can be used to:

- To understand the expected rate of returns for the project
- To assess the potential for revenues and profits for the private sector partner
- To facilitate in identifying the viability gap funding or to allow the alternate revenue channels for private partner
- To ensure reasonable level of returns to private sector – not significantly high and not a loss making initiative...

# Approach for Feasibility Assessment

- Arrive at a benchmark cost
- Analyse the revenue sources
- Calculate the NPV and IRR for the project
- The NPV of the appropriate model should be less than budget available for the department
- If not NPV is greater than the allocated budget
  - Examine the possibility of bringing down the specifications
  - Examine revising the SLAs
  - Seek more funds

# Approach for Feasibility Assessment

- Based on the estimated IRR:
  - Assess whether the project is financially feasible
  - Assess the concessions, subsidies, gap funding, budgetary support or alternate funding resources needed for ensuring the private sector participation and project sustainability
  - Identify the controls to ensure that unreasonably high returns are not accrued to the private partner – pass on the benefits to the government or end users (citizens..)

# Understanding Project Financing Options

## Project Finance Options:

- Public Finance
- Private Finance
- Project Finance



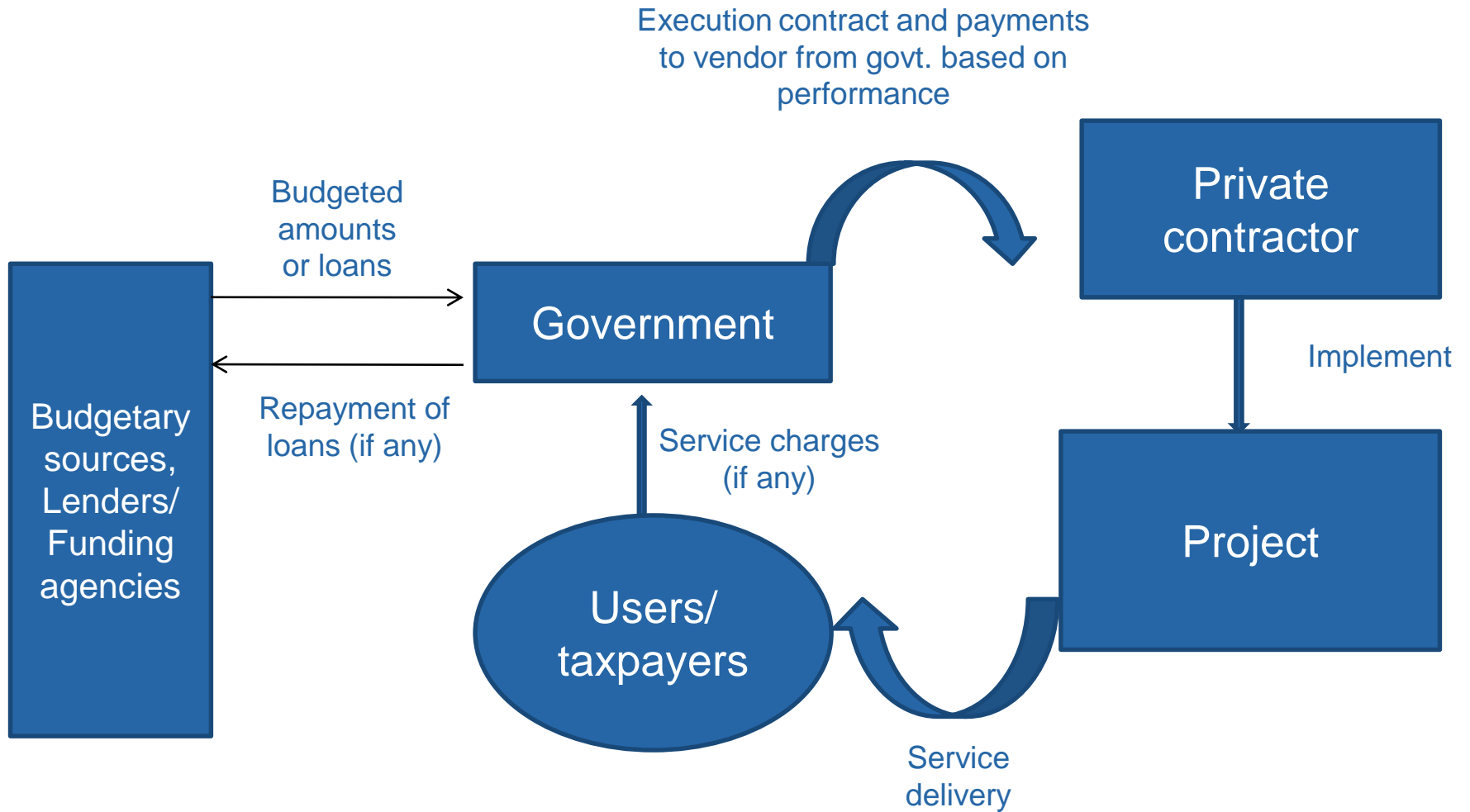
# Public Finance

- Government sponsors the project through
  - Budgetary sources or
  - Loans
- Project is implemented through a execution contract with the private partner
- Execution contract refers to the contract with the private partner stating:
  - Scope of services
  - Commercials quoted during the bidding/vendor selection processes
  - Payment terms
  - Implementation/delivery schedule for the project
  - SLA's
  - And other terms and conditions of the project

# Public Finance (contd..)

- Where applicable, service charges are collected from the users by the government
  - Government is in the business of public service
  - Not in all e-Government projects, the service charges can be collected by the government
  - Government earns revenue from the service charges, where applicable
- This is a conventional process of project implementations by the government
- Payments are made to the private partner based on the quality of the services delivered in the project

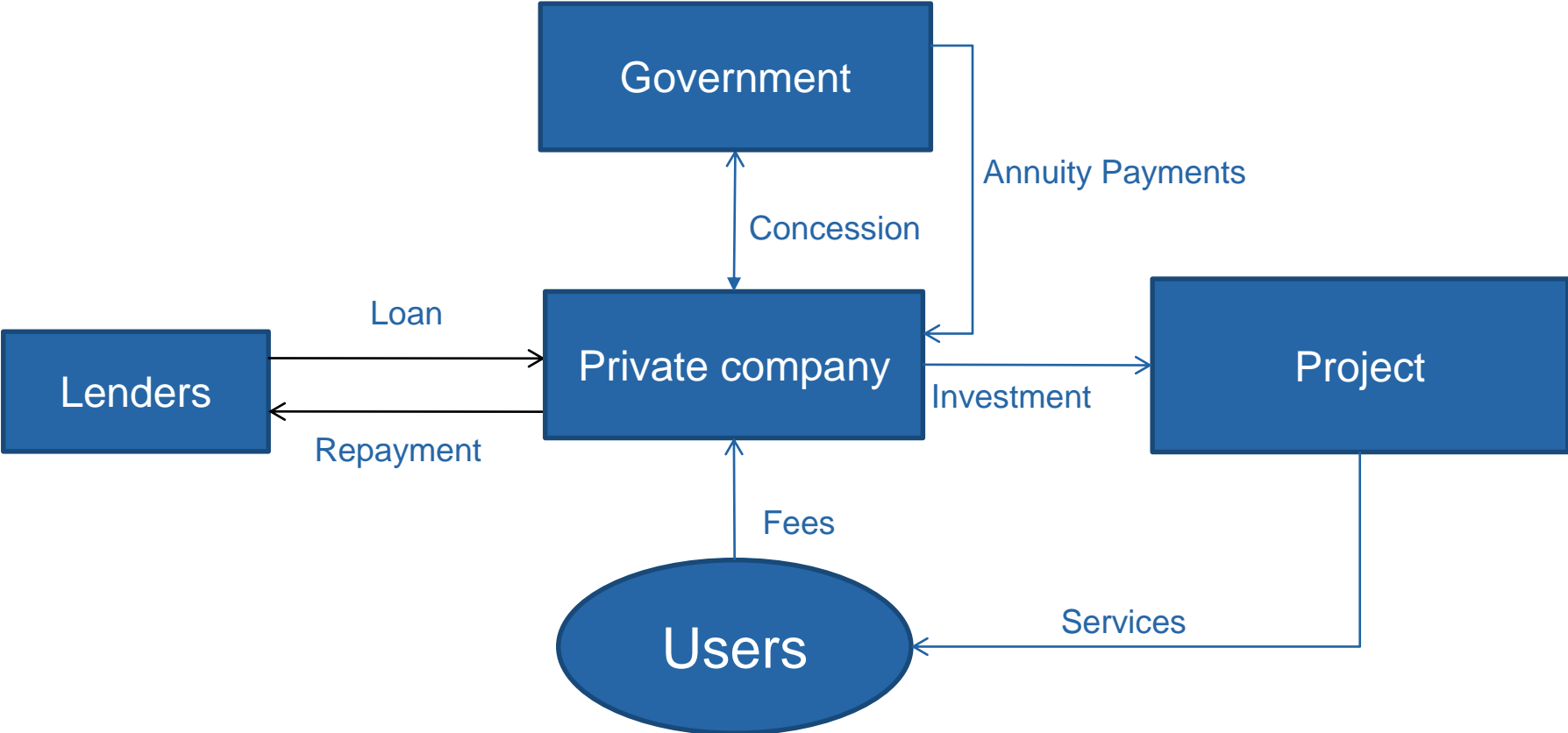
# Public Finance



# Private Finance

- Two important terms
  - Concession : The agreement between government and the private partner stipulating rights and responsibilities for the use of public assets.
  - Concessionaire : The private partner with whom the government enters into concession agreement.
- The project is financed by a private body through equity and debt
- The revenue is through the user charges and/ or annuity payments by the government
- Not suitable for capital Intensive projects as private organization do not like to strain its balance sheet through debt

# Private Finance



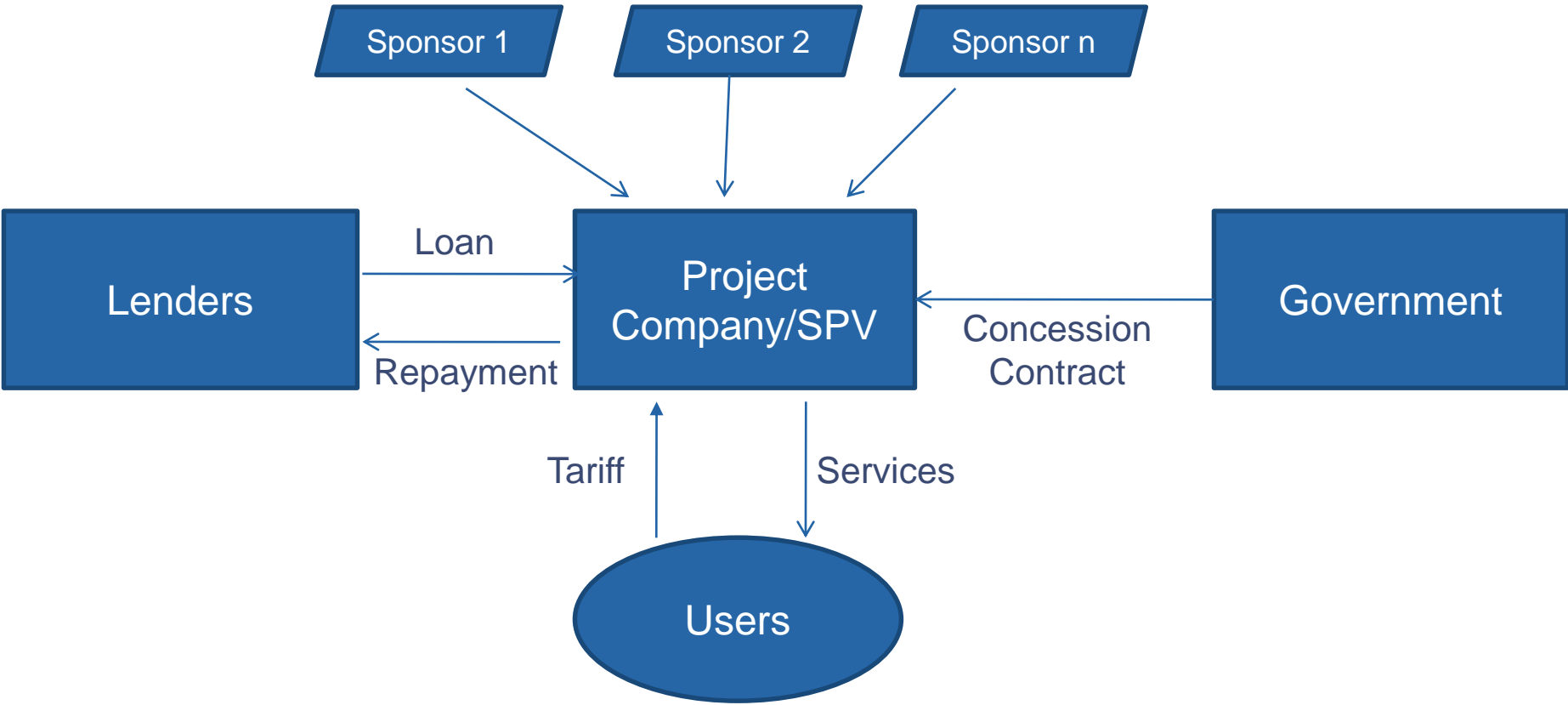
# Examples of Private Finance

- State Wide Area Network (SWAN) and State Data Center (SDC)
  - Capital and operational costs for DC or SWAN are invested by the private partner
  - No upfront investment from the government in SWAN or SDC creation
  - The payment to the private partner are made by the government post go-live of SDC or SWAN based on a quarterly or annual basis inline with the defined SLAs and the vendor performance
- eProcurement (andhra pradesh), Bangalore One (Karnataka) or CSCs scheme
  - Capital and operational costs for systems/facilities creation are invested by the private partner
  - No upfront investment or no investment from the government in the project
  - Revenue to the private partner is accrued through service charges collected from the users and viability gap funding from the government...

# Project Finance

- Project assets and its potential future earnings finance the project
- Generally a Special Purpose Vehicle is created which is legally independent
- Debt financing is the primary source of funding
- Risks are shared by participation of multiple complementing partners in the SPV
- The concession agreement is with the SPV or the Project company so formed

# Project Finance





# Examples of Project Finance

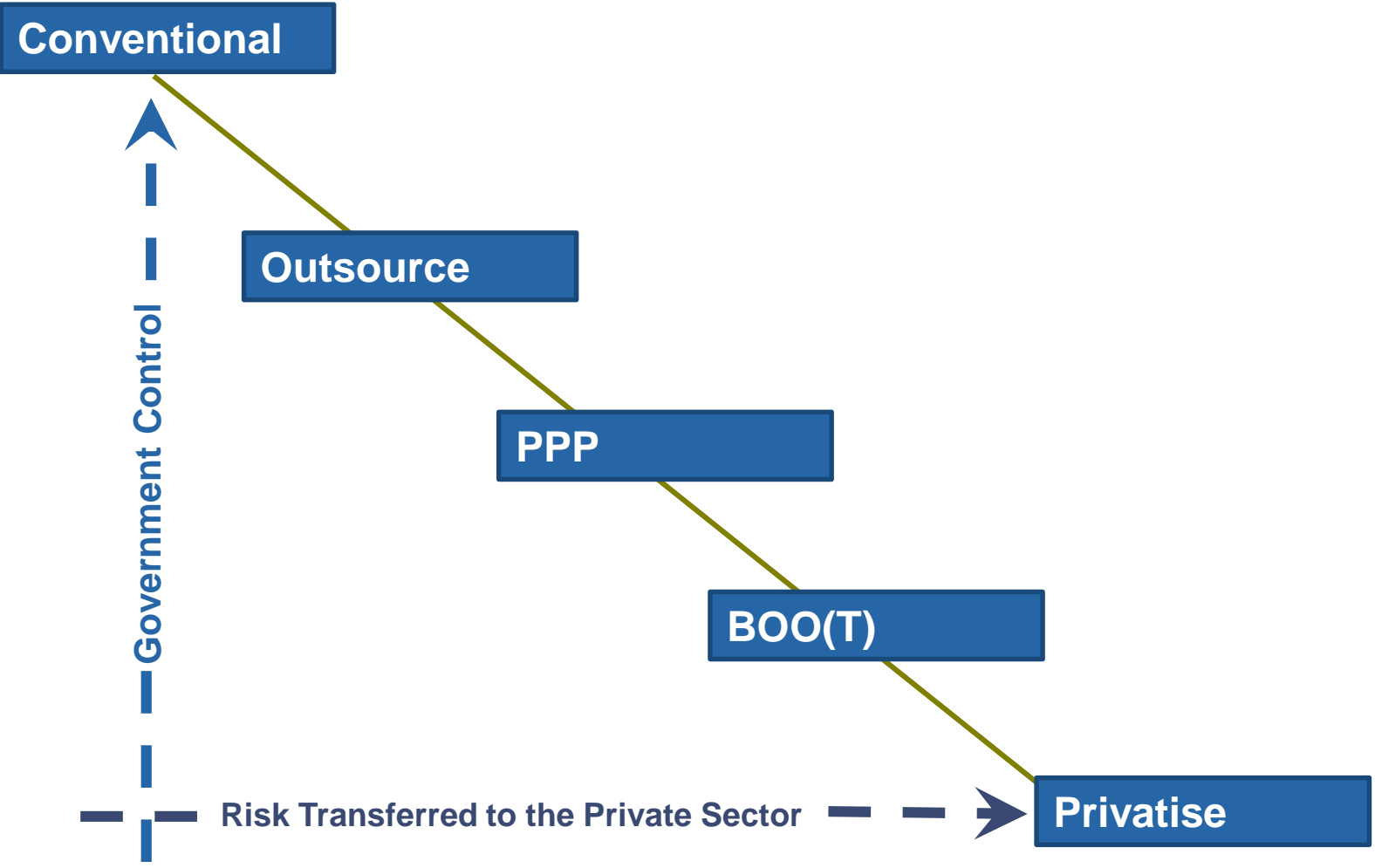
- Large Infrastructure projects
  - Roads
  - Power Projects
  - Airports etc..

# Project Finance in e-governance

Project Finance in e governance is relevant for

- Turn key projects of high investment
- Projects with regular stream of revenue
- Projects which require participation of multiple partners with complementing capabilities.

# Various Models for Private Sector Participation



# Various Models for Private Sector Participation

Conventional



Outsource

PPP

BOO(T)

Privatise

- Government maintains complete control on the project creation, execution and assets
- Government funds the project investments for the capital and operational expenditure during the project tenure
- Government creates/develops the project
- Government Maintains the project including operations and maintenance of the project
- 100% of the project risk and returns are accrued to government only

# Various Models for Private Sector Participation

Conventional

Outsource

PPP

BOO(T)

Privatise



- Government maintains complete control on the project creation, execution and assets
- Government funds the project investments for the capital and operational expenditure during the project tenure
- Government leverages private sector strengths for creation of the project or maintenance of the project or both
- Risks are allocated to the government and private sector based on the responsibilities (e.g. government will have the risk of project demand, the private sector will carry the risk of performance and quality of the services delivered to the government)

# Various Models for Private Sector Participation

Conventional

Outsource

PPP

BOO(T)

Privatise



- The government does not need to own infrastructure to deliver services
- The government retains political responsibility/accountability to deliver services for the community;
- The government defines the timeframe in which the services must be delivered; and the quality and quantity of services needed;
- The private sector delivers the services and finances or part finances the project;
- Government provides the concessions for the private party, if needed
- Private sector remunerated through services charges/transaction fees/gap funding..
- Risks are allocated between the public and private sectors;
- Various flavors of PPP exist with varying roles and responsibilities of public and private sectors

# Various Models for Private Sector Participation

Conventional

Outsource

PPP

**BOO(T)**

Privatise



- The government retains political responsibility/accountability to deliver services for the community;
- The government defines the timeframe in which the services must be delivered; and the quality and quantity of services needed;
- Private entity receives concession from government to finance, design, construct, implement and operate the project
- Private sector is remunerated through services charges/transaction fees/gap funding..
- The assets of the project are transferred to the government at the end of the concession period

# Various Models for Private Sector Participation

Conventional

Outsource

PPP

BOO(T)

Privatise



- The responsibility for delivery of services is completely transferred to the private sector
- The ownership of the project or a business is completely transferred to the private sector
- Government only regulates the functioning of the private sector



# Risk Assessment and Analysis

## IDENTIFY

- Identify and describe the risk

## PROBABILITY:

- Estimate the probability of the risk

## IMPACT:

- Assess the impact of the risk

## ALLOCATE

- Allocate the risk to the right party who can manage the risk.

## MITIGATE:

- Identify the risk mitigation strategies

# Typical Project Risks

- Land acquisition, planning and permissions
- Design
- Construction
- Commissioning
- Latent defects
- Operating performance
- Operating and maintenance costs
- Third party revenue
- Demand (volume)
- Residual value
- Inflation
- Regulatory
- Taxation
- Force Majeure
- Changes in requirement

# Risk Allocation

- Key considerations for risk allocation:
  - Who is best placed to reduce the probability of risk occurring?
  - Who is best placed to manage the cost of risk if it does occur?

Minimising the expected cost of risk is crucial for maximising returns

Risks should be allocated to the party best able to understand and manage them..



# Risk Allocation

Risks should be allocated to the party best able to understand and manage them..



- Land acquisition, planning/permissions
- Demand risk (?)
- Changes in requirements
- Latent defects (existing)

- Inflation
- Regulatory
- Taxation
- Force majeure

- Design and construction
- Commissioning
- Operating and maintenance costs
- Operating performance
- Latent defects (new)
- Third party revenue

# Risk effects

- Increase in costs
- Delays
- Resource constraints
- Loss of revenue
- Political consequences

# Risk Probability

- Risk probability is defined as the likelihood of an event happening which may lead to the occurrence of the risk.
- Risk probability is to be derived from the best estimates based on
  - Knowledge and experience on similar projects
  - Knowledge and experience of the project team
  - Stake holder discussion
  - Risk probability estimation tools.

# Risk Identification Allocation and Mitigation table

Risk	Description	Mitigation	Allocation
Availability of services	Possibility that Services provided by Private Partner do not meet output specifications of the Institution.	<ul style="list-style-type: none"> <li>• Clear output specifications.</li> <li>• Performance monitoring.</li> <li>• Penalty Deductions</li> <li>• Payment linked to performance</li> </ul>	Private Partner.
Risk of project completion	Delays, leading to cost over run.	Develop implementation plan with tasks identified in detail, and monitor at sub task level.	Mostly to the private sector. Tasks like permissions and approvals to be allocated to the department
Design risks	Possibility that Private Partner's design may not achieve required output specifications.	<ul style="list-style-type: none"> <li>• Clear output specifications.</li> <li>• Design warranty.</li> <li>• Patent and latent defect liability.</li> <li>• Third party review</li> </ul>	Private Partner and the consultant for independent review

***A risk table needs to be constructed as above specific to a project***

# Managing Risk

Allocate the risk to the party who can best manage it

Freedom to manage the risk for whom the risk is allocated

## Risks

- Ownership
- Operational
- Financial
- Force Majeure

Provide appropriate risk premium



# Implementation Strategy

## Project management structure

- Steering Committee structure
- Project Management structure

## Identify the project phases

- Project inception
- Requirement definition
- Design
- Implementation
- Stabilization
- Support

## Identify project milestones in each of the phases

## Define the deliverables for each of the mile stones

# Implementation Strategy

## Payment structure

- Payment linked to mile stones

## Budget provisioning

- Financing model
- Year wise allocation of funds

## Resource deployment

- Capacity building
- New recruitments

## Transition from private sector to department

End of Session