Resource Mobilization Strategies for TAR

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Elements of Project Cost (Normal Business Unit)

- Land
- Buildings- factory, administrative, others
- Plant & machinery - manufacturing, repairs and others.
- Other assets-office & factory furniture and petty equipments
- Preliminary & pre-operative expenses
- Margin money for working(circulating capital)

Elements of Cost of Rail Infrastructure Projects

- Land for
- ✓ Permanent way including buffer zone
- ✓ Buildings for various activities such as operations, commercial, repairs, manufacturing, storage and handling, welfare, administrative, others

Elements of Cost of Rail Infrastructure Projects – contd.

- **Buildings to accommodate activities like**
  - Operating & commercial activities at stations
  - Administrative (corporate, regional, divisional, sub-divisional, workshops, stores, production units)
  - Repairs sheds

Elements of Cost of Rail Infrastructure Projects – contd

- Manufacturing sheds
- Storage sheds
- Welfare-hospitals, recreation clubs, institutes, canteen, sports complex etc.

Elements of Cost of Rail Infrastructure Projects – contd

- **Plant & Machines**
- ❖ Operating machine
- ✓ Permanent way
- ➢ Track (types of rails, types & density of sleepers, ballast cushion, embankments gauge, quality of bridge etc.
- ➢ Signaling technology- traditional to modern
- ➢ OHE-electrified route

(gives particular speed potential)

Elements of Cost of Rail Infrastructure Projects – contd

- ✓ Rolling stock- types of locos, coaches & wagons, ART/MRT, brake vans, parcel vans etc.- speed potential & capacity
- ✓ Other operating machines & equipments-block, signaling and control equipments

(Line capacity Output)

Elements of Cost of Rail Infrastructure Projects – contd

- Plants & machines in repair work shops
- Plant & machines in production units
- Other machines like weighing machines, way bridges etc.
- Other assets-office equipments such as computers, furniture etc.
- Preliminary & pre operative expenses.
- Margin money for working capital

Elements of Cost of Rail Infrastructure Projects – contd

- Huge cash deficits in initial years
- State support essential for non-remunerative projects.

Trans-Asian Network

- **Northern Corridor**
  - Higher Axle load
  - Higher speed
  - Less bottlenecks
  - Lesser investments Needs

Trans-Asian Network

- Southern Corridor (ASEAN & Indo-China Sub-region)
  - Lighter rails
  - Multiple gauges
  - Lower axle load
  - Lower speed
  - High investment needs

Capital Cost of TAR (1996-2015) (Indonesia)

Item of work	Cost (in million US $)
Upgrade Outline Gauge	2.4
Upgrade Axle Load/increase speed	71.1
Line Capacity expansion(8%)	1523.4
Missing Link Construction	-
Container Wagon Acquisition	87.8
Locomotive Acquisition	37.5
TOTAL	**1722.2**

Capital Cost of TAR (1996-2015) (Malaysia)

Item of work	Cost (in million US $)
Upgrade Outline Gauge	1.8
Upgrade Axle Load/increase speed	-
Line Capacity expansion(8%)	256.1
Missing Link Construction	45.0
Container Wagon Acquisition	21.2
Locomotive Acquisition	21.8
TOTAL	**345.9**

Capital Costs of TAR (1996- 2015) Thailand

Item of work	Cost (in million US $)
Upgrade Outline Gauge	0.6
Upgrade Axle Load/increase speed	-
Line Capacity expansion(8%)	2891.4
Missing Link Construction	1056.0
Container Wagon Acquisition	64.2
Locomotive Acquisition	45.7
TOTAL	**4057.9**

Capital Costs of TAR (1996-2015) Cambodia

Item of work	Cost (in million US $)
Upgrade Outline Gauge	0.5
Upgrade Axle Load/increase speed	87.3
Line Capacity expansion(8%)	-
Missing Link Construction	274.5
Container Wagon Acquisition	13.8
Locomotive Acquisition	5.0
TOTAL	**381.1**

Capital Costs of TAR (1996-2015) Viet Nam

Item of work	Cost (in million US $)
Upgrade Outline Gauge	0.7
Upgrade Axle Load/increase speed	123.0
Line Capacity expansion(8%)	11.7
Missing Link Construction	157.5
Container Wagon Acquisition	13.8
Locomotive Acquisition	7.5
TOTAL	**314.2**

Capital Costs of TAR (1996-2015) China

Item of work	Cost (in million US $)
Upgrade Outline Gauge	-
Upgrade Axle Load/increase speed	-
Line Capacity expansion(8%)	-
Missing Link Construction	2157.5
Container Wagon Acquisition	22.0
Locomotive Acquisition	10.0
TOTAL	**2189.5**

Capital Costs of TAR (1996-2015) Lao PDR

Item of work	Cost (in million US $)
Upgrade Outline Gauge	-
Upgrade Axle Load/increase speed	-
Line Capacity expansion(8%)	-
Missing Link Construction	855.0
Container Wagon Acquisition	6.6
Locomotive Acquisition	5.0
TOTAL	**866.6**

Capital Costs of TAR (1996-2015) Myanmar

Item of work	Cost (in million US $)
Upgrade Outline Gauge	62.6
Upgrade Axle Load/increase speed	383.0
Line Capacity expansion(8%)	163.1
Missing Link Construction	691.5
Container Wagon Acquisition	5.5
Locomotive Acquisition	5.0
TOTAL	**1310.7**

Total Capital Costs of TAR (1996-2015) Item wise Summary

Item of work	Cost (in million US $)
Upgrade Outline Gauge	68.6
Upgrade Axle Load/increase speed	664.4
Line Capacity expansion(8%)	4845.7
Missing Link Construction	5237.0
Container Wagon Acquisition	229.9
Locomotive Acquisition	137.5
TOTAL	**11188.1**

Capital Budgeting (CB)

- Involves decisions about current outlay (spread over few years) of funds in expectation of a stream of benefits (net cash inflows) extending into future.
- Long term Financial consequence.
- Larger outlay involved.

Capital Budgeting (CB)– contd.

- Difficult to reverse (sunk cost) - heavy loss if assets are sold out premature.
- Most important issue of Financial Management.
- Strategic decision about how to allocate resources.
- Strategic asset allocation Decision.

Role of Managers

- Identification of investment opportunities (transportation/commercial executives)
- Selection of assets (technical executives)
- Assembly of such proposals (planning executives)
- Estimation of profitability (planning executives)
- Appraisal & evaluation of profitability of each project (Finance Managers)

Role of Managers - contd

- Selection of project on specified criteria/ policy (Top Mgt – BOD)
- Integration & preparation of capital budget (concerned dept.)
- Implementations – variations & project cost control.
- Post project appraisal/productivity test.

Identification of Investment opportunities

- Close monitoring of changes in external environmental (technology, demand, competition)
- Formulating Corporate business strategy based on SWOT analysis, competency mapping and consultation across organization and suggestions.
- Identify projects with specified features to capitalize opportunity. (Mostly by operating & marketing deptts followed by technical deptts.)

Investment Analysis Methods

- Non – discounting methods
  - Pay back
  - Accounting rate of Return (ARR)
- Discounting Methods
  - Net Present value method
  - Benefit cost ratio
  - Internal Rate of Return (IRR)
  - Discounted pay back

Rate of Return

- Financial
- Economic/social – subsidy from central budget justified

Assembly of proposals

- Preparation of all proposal in specified formats prescribed by finance people.
- Approval by competent authority.
- Consolidation by catogory

Classification of proposals

- Replacement
- Capacity Rationalization
- Expansion
- New products
- Obligatory & welfare (safety, pollution controls etc.)

Preparation of Capital Budget

- Compilation of capital budget by integration of new projects with works in progress
- Approval by competent authority.
- Assurance of fund availability.

Focus of Appraisal

Types of Proposal	Focus
1. Mandatory/welfare	Cost effective way to meet the minimum requirement.
2. Replacement	Compare incremental cost with incremental benefits. (NPV)

Focus of Appraisal – contd.

Types of Proposal	Focus
3. Expansion (High Risks)	Realistic forecast of growth prospects and careful analysis of riskiness of cash flows & IRR/NPV
4.Diversification (Very High Risks)	Risk assessment of new product/service and suitable adjustment in IRR to accommodate risk.

Focus of Appraisal – contd.

Types of Proposal	Focus
5. R & D Proposals (very risky)	Use of sequential decision techniques like decision free/ option analysis for managerial judgment to gamble for future benefits.
6.Misc. Proposals (Interior decoration)	As per personal preference of top management and overall limit on such expenditure to an agreed upon percentage of total outlay.

Appraisal/Evaluation of projects

- Correctness of the profitability & Risk
- Reliability of estimates of cash flows
- Management capability of the promoters
- Security of funds

Risks associated with infrastructure projects

- Cost and time overruns
- Overestimation of demand
- Political/Regulatory risks
- Exchange rate risk
- Environmental/ecological concerns

Why are traditional financing arrangements inadequate?

- limited capacity of the domestic capital market in reference to the scale of investment.
- Likely mismatch between the project's cash flow pattern and repayment schedule of principle and interest of conventional term loan.

Why are traditional financing arrangements inadequate? – contd.

- Equity capital ? The wait for dividend too long and therefore the risk very high
- Pension funds, being long-term investors are an ideal answer; but, they are risk-averse
- **SOLUTION: Structured Financing Options**

Structured Financing Options

- Non-recourse project specific financing – BOT/BOLT/BOOM
- Zero-coupon or Deep Discount Bonds
- Infrastructure Equity Fun
- Pension funds (with Bond Insurance)
- Supplier's credit
- Viability Gap Funding

Credit enhancement techniques to obtain better ratings

- Cash/Reserve Account (Escrow)
- Senior debt
- Financial Guaranty (Bond Insurance)
- Government budgetary support
- Over-collateralization through cash and other liquid assets or bank guarantees

Financial Guaranty

- An unconditional guarantee to pay interest and principal to bond holders as scheduled by Govt.

Benefits

- To introduce new borrowers
- To facilitate the sale of longer-maturity instruments
- To reduce the cost of funds
- To access international markets

Resource Mobilization Strategies

- **Direct borrowing**
  - Remunerative projects
    - ✓ Fully financed from capital market
  - Non-remunerative projects
    - ✓ Viability funding by govt.
    - ✓ Partly funded through soft loans
    - ✓ Sharing of losses.
- **SPV mechanism – BOT/BOLT/BOOM**
- **International borrowing- multilateral /bilateral**