
ITU WORKSHOP 2000
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# COSTING DELIVERY OF TELEPHONE SERVICES

- IMPORTANCE OF COSTING SERVICE DELIVERY
- Fundamental price input.
- Estimate cross subsidy in the light of reform in payment regime for international voice telephony.
- Informing the process of domestic tariff rebalancing
- Establishing interconnect prices.
- The fundamental importance of pricing is to establish an objective relationship between unit cost and unit revenue.

# INTERNATIONALLY ACCEPTED PRICING PHILOSOPHY BASED ON EITHER:

1. Cost based pricing
2. Cost orientated pricing

# COST BASED PRICING

The quantitative objective is to equate price to economic cost. A costing principle that developing countries find great difficulty in accepting given that the market structure of those countries are not as developed and rigid as in developed countries.

# COST ORIENTATED PRICING

- Price is equal to cost plus.....
- The objective principle price permits recovery of actual cost of providing the service plus incidentals that are critical to the development/enhancement of service delivery.
- WTO and ITU have accepted the validity of cost orientated pricing.

# ELEMENTS OF COST ORIENTATED PRICE

- INTERNATIONAL TRANSMISSION
- INTERNATIONAL SWITCHING
- NATIONAL EXTENSION
- USO OBLIGATION (access deficit).....

# I. INTERNATIONAL TRANSMISSION

- Capital expenditure (annualised through depreciation) plus financial and interest charges on:

  i) Submarine cable including submerged repeaters, and land line up to cable terminal; terminal equipment; power supply; land (excluding depreciation); other

  ii) Satellite communication system: earth station; antenna; electronic equipment; power supply; buildings; other.

# INTERNATIONAL TRANSMISSION COST (continued)

Operating and Maintenance costs:

- Cost of material to upkeep/repair network elements that facilitate international transmission, i.e.cable and satellite transmission.
- Salaries and allowances of staff engaged in repairs, maintenance and service,
- Rent including IRU
- Utility Charges
- Other charges

# II. INTERNATIONAL SWITCHING

- Capital Expenditure (annualised through depreciation), plus financial and interest charges on:

  i) Switching equipment

  ii) Power supplies

  iii) Buildings

  iii) Cable

# INTERNATIONAL SWITCHING (continued)

Operating and Maintenance Costs:

i) Material and labour costs to repair, maintain and operate international switching exchanges

ii) Utility and rental charges

iii) Least circuit charges

iv) payment for IRU facilities

v) -/+ net transit payments

vi) administrative and over head costs

# RESEARCH and DEVELOPMENT COST ASSOCITTED WITH INTERNATIONAL SWITCHING

i) Investment costs of R&D facilities;

ii) Amortised cost of R&D facilities;

iii) Salaries, wages and allowances of R&D personnel and contractual arrangements;

iv) Maintenance expenses to upkeep R&D facilities.

# III NATIONAL EXTENSION

- Capital (annualized depreciation expenses) and investment costs (financial and interest charges) re:
  - i) Transmission facilities
  - ii) Switching equipment
  - iii) Electronic equipment
  - iv) Power supplies

# NATIONAL EXTENSION (continued)

## Operating and Maintenance Cost

i) Cost of material for repair and maintenance of trunk and local exchanges and local loop (if agreed)

ii) Labour costs of staff involved in operating and maintenance activities.

iii) Over head costs

iv) Corporation taxes,Government levies and access deficit charges

# NATIONAL EXTENSION (continued)

## Research and Development Costs

i) Investment costs of R&D facilities;

ii) Amortised cost of R&D facilities;

iii) Salaries, wages and allowances of R&D personnel and contractual arrangements;

iv) Expenses to upkeep R&D facilities.

# ECONOMIES OF SCALE

Transmission & Switching:

i) Optimum throughput capacity (traffic units)

ii) Actual throughput (traffic units)

iii) Excess capacity {(i) minus (ii)}

iv) Forecast (%) reduction in excess capacity (year n+1)

# COSTING BIG CHALLENGES
# 1. Cost Separation

Cost allocation is imperative for accurate cost assessment because of:

i) multiple use of transmission and switching facilities

ii) multiple use of material for operation and maintenance activities

iii) Use of common units of labour to operate and service multiple services

iv) Common costs contingent on different telecommunication services

# 2. APPROPRIATE COST METHODOLOGY

- No universally accepted cost methodology
- Why?
- Cost structures differ between and among countries due to socio-economic and geographical circumstances such as:

  a) Difference in procurement charges;
  b) Difference in cost in accessing capital;
  c) Difference in labour cost and fiscal requirement;

# Continued

e) Topographical variations;

f) Difference in economies of scale;

g) Different regulatory and market environment;

h) The relative efficiency of operators.

What is common is that cost reduction is being influenced by developments in:

*fibre-optic cable transmission, multiplexing and software technology.*

# COST MODELS

- *A set of mathematical, statistical and accounting principles applied to established cost methodology/ies to estimate per unit cost.*
- The cost methodology adopted is a critical determinant of the input/output values of a model.
- Invariably, cost methodology selection is informed by the socio-economic and geographical characteristics (in reference above) of the country of application.

# COST METHODOLOGIES

- *Fully Distributed Cost*: apportioned total cost (direct+indirect) of the company between all the products and services within a production line;
- *Incremental Cost*: The extra unit cost consequent upon the production of a significant quantity of additional output or service. Such cost includes allocated direct, indirect and common costs but excludes administrative costs. Incremental cost is a proxy for marginal cost.

# Continued

- *Marginal Cost*:The cost incurred (or saved),as a result of the supply of one extra (or less) unit of output of a good or service. For most telecom operators this cost is regarded as almost zero.
- *Long Run Average Incremental Cost:* A regulators pipe dream. The incremental cost that would be incurred if there were no spare capacity and the most modern/cost-effective technologies were used among inputs.Often includes allocation of indirect cost in the same ratio to distribute costs.

# Continued

- *Ramsey Method:* Derivation of cost on the basis of marginal utility allowing for coverage of fixed and variable costs, and where price elasticity is unresponsive, takes into account the effects of externality on cost.
- *Activity Based Cost:* Though not a cost methodology is the strict sense of the term, an important costing tool for cost allocation on the basis of activities employed in output production. A tool which can be applied to any methodology used in modeling cost.

THE END