ITU Workshop 2000

TAL COST MODEL
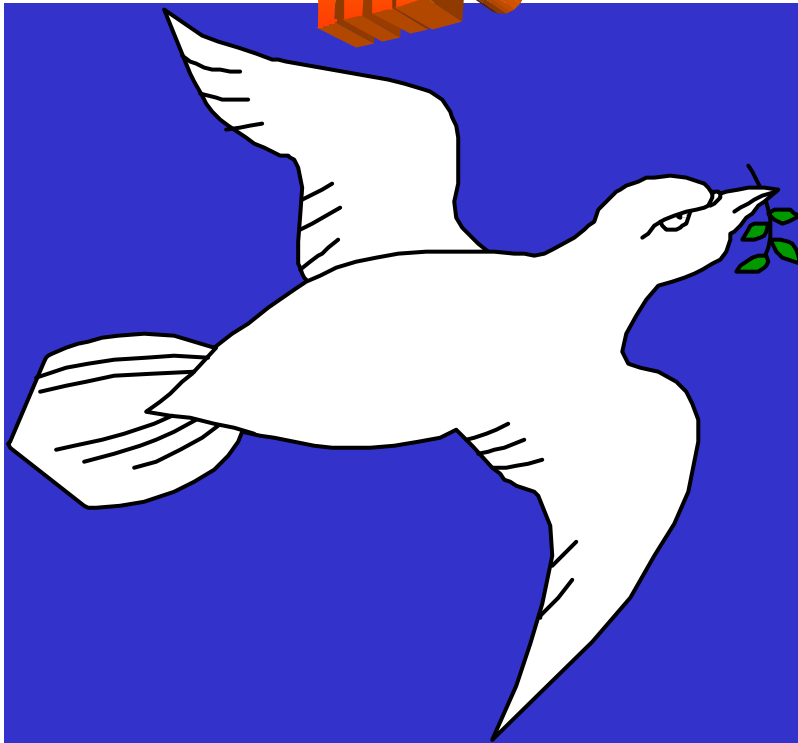
- PURPOSE:
- To assess actual cost of IMTS
- To Assess Termination fee
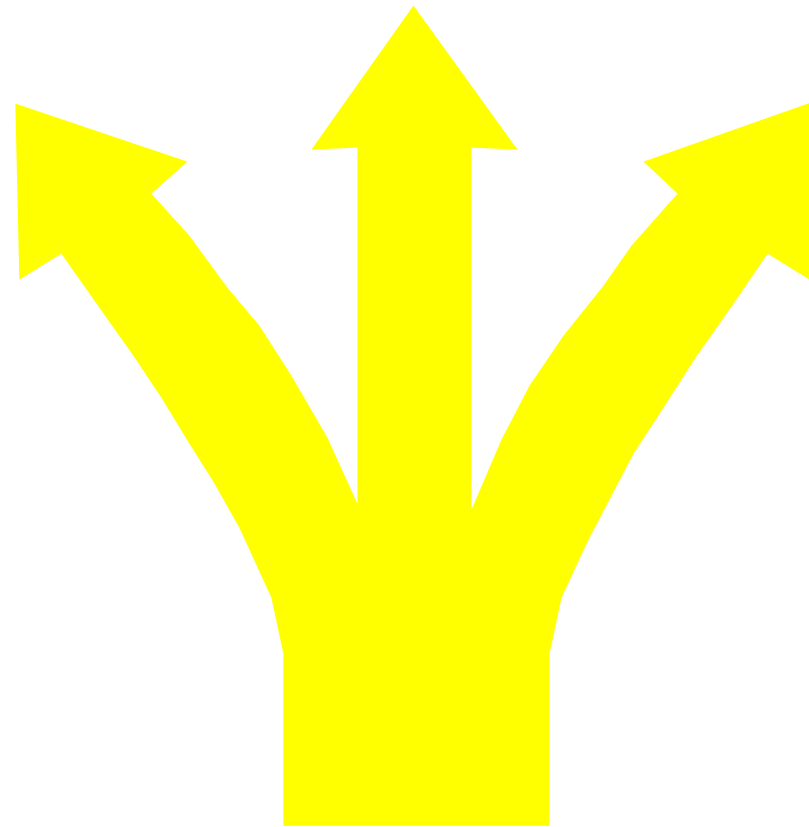- Flexible enough to establish interconnect charges

FOUNDATION METHODOLOGIES

- The Ramsey method

- Incremental cost

- The TAS Model

- Fully Distributed Cost

- Marginal Cost

INPUT VARIABLES AND D.140 OF ITU-T

- D-140 Stipulates Main Cost Elements for IMTS:

- International transmission facilities;

- International Switching facilities

- National extension

COST ASSESSMENT CRITERIA, D-140

- Cost should be identified on the basis of wide-based accepted accounting principles in terms of direct and indirect cost.

- Provision made for indirect cost to include: general administration, management and accounting systems R&D and appropriate taxes; as well as other costs subject to bilateral agreement.

FUNDAMENT OF THE MODEL

- A cost model designed for a region must take cognisance of the socio-economic constraints common to those economies impact significantly cost production of goods and services.
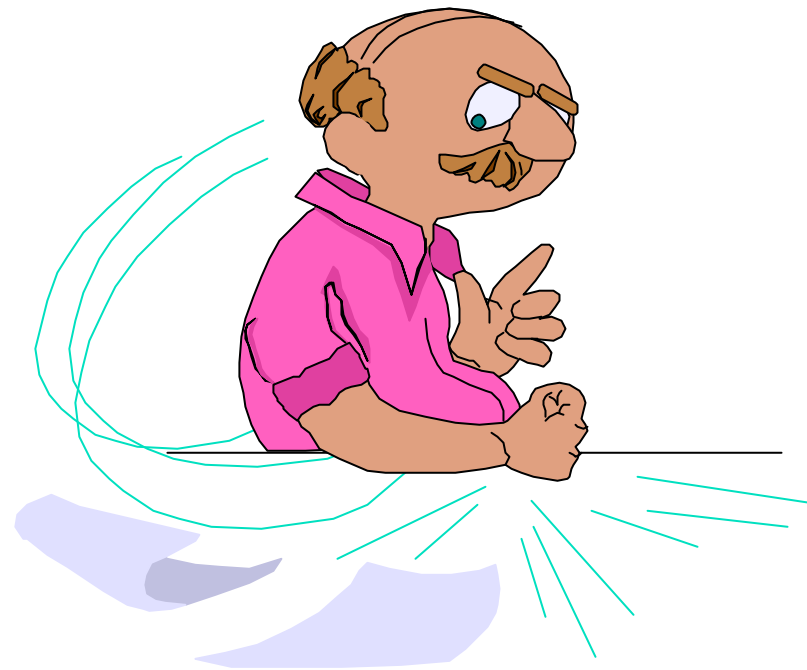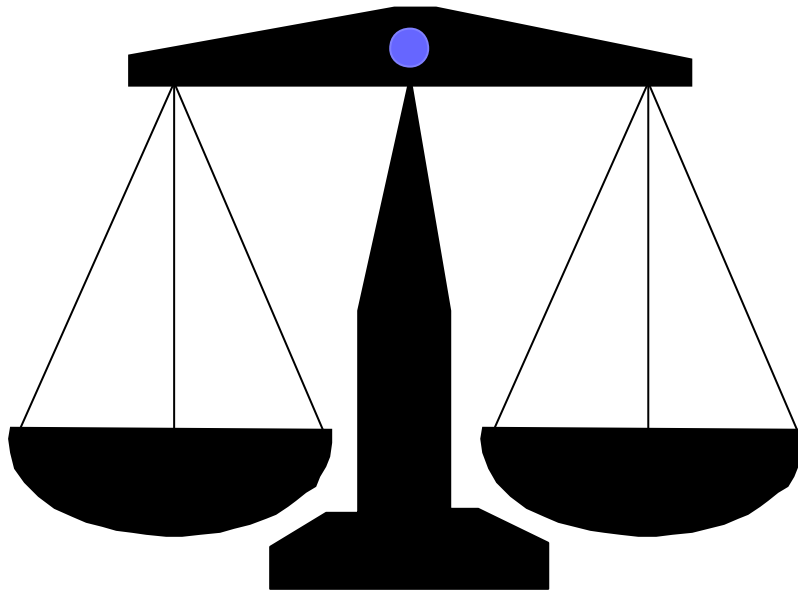
REGIONAL DISECONOMIES OF SCALE
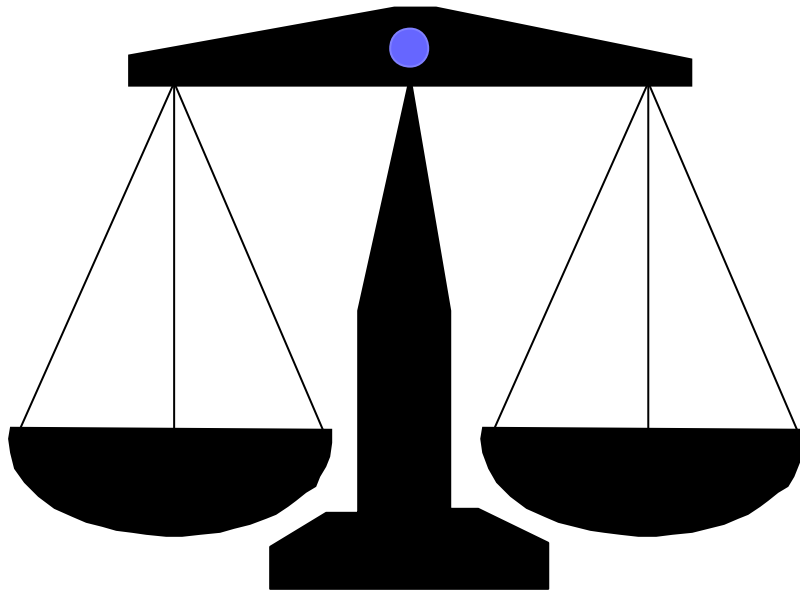
- Sub-optimal utilisation of switching and transmission facilities;

- Average teledensity below 25;
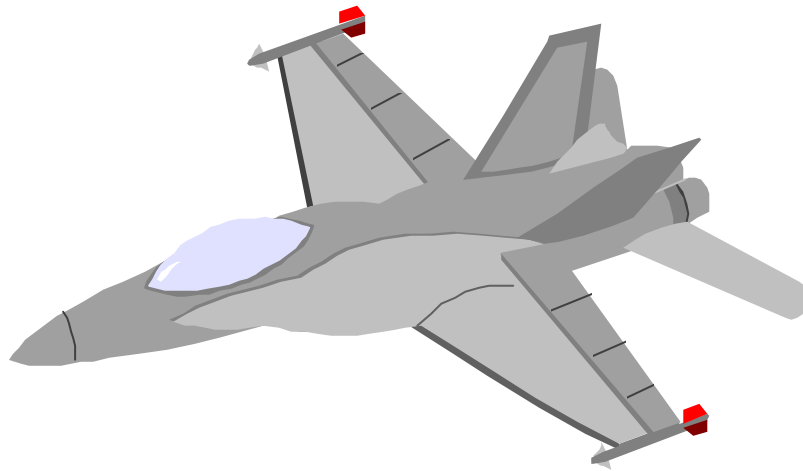
- Domestic tariff priced below cost;

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- Non-convertible national currencies;

- Interest cost on capital and procurement cost are relatively high;
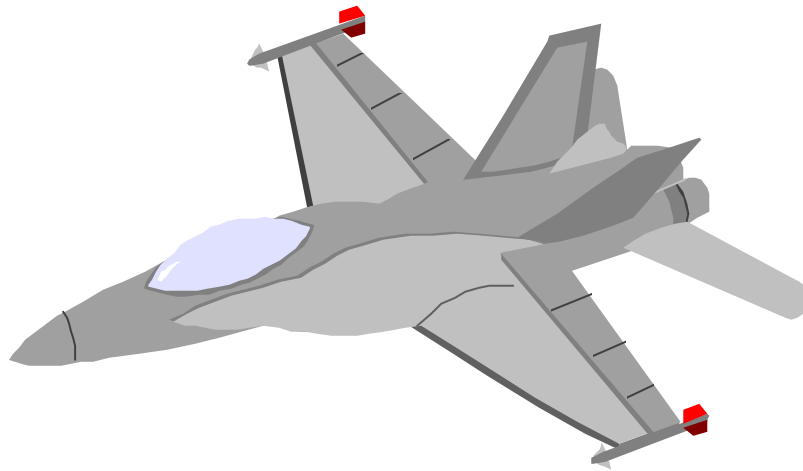
- significant universal service obligation.

EFFICIENCY GAINS

- Model regards cost as a dynamic variable and given the move towards efficiency and thus lower telecommunication prices contingent on modernization in technology and management practices, telephone service

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- Providers should pursue efficiency gains in production lines.

- Efficiency gains Coefficient is an estimate of Efficiency gains

OTHER IMPORTANT COST FACTORS
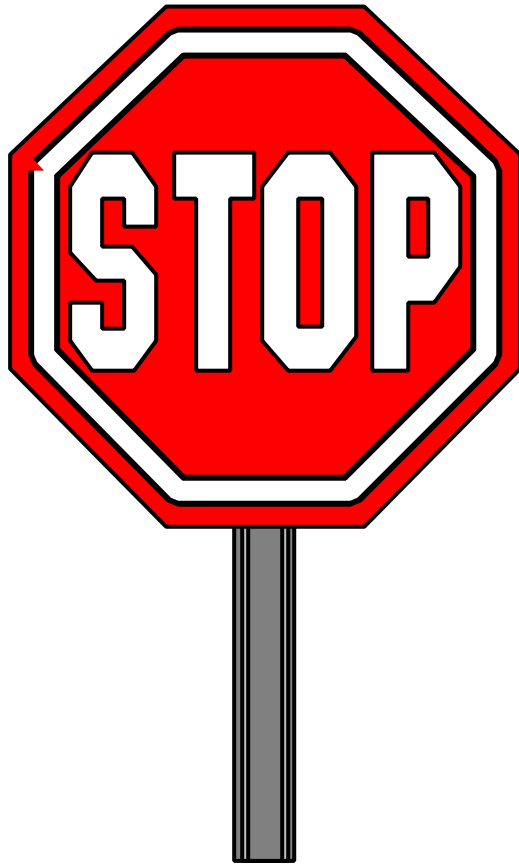
- Cost elements do not include:

- Line installation, customer premises equipment, depreciation on land, and switching expenses for transiting traffic

WHY

- Line installation and customer premises equipment are normally covered by installation charges and rent.

- The land value seldom depreciates.

- Transit expenses should be covered by transit fees.

COST ALLOCATION
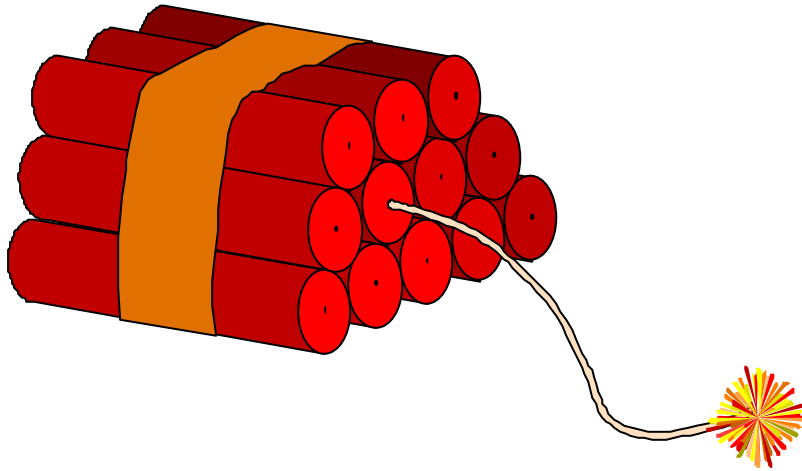
- Invariably telecommunication facilities are shared by multiple services, cost allocation should be applied to all cost elements.

EFFICIENT COST ALLOCATION
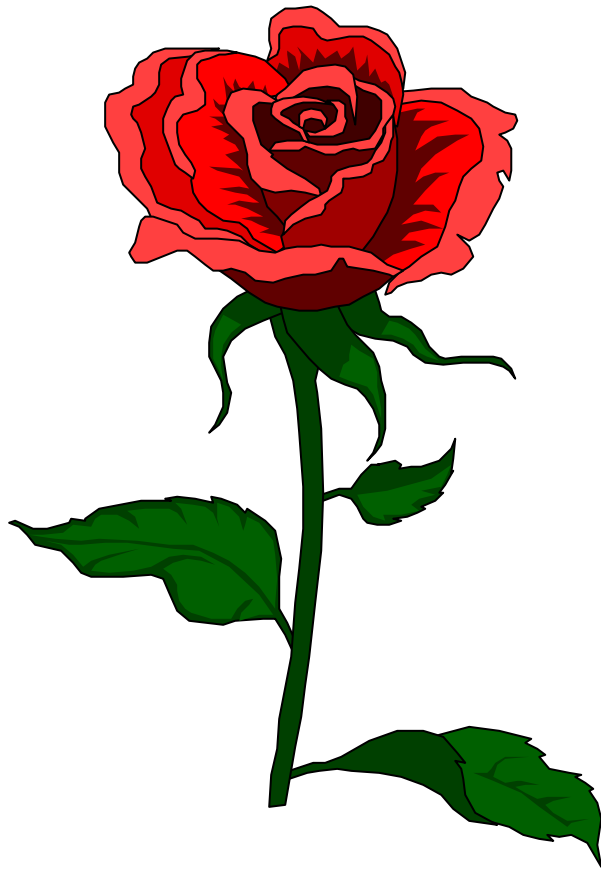
- Application of an efficient cost allocator is imperative.

- ABC method highly recommended

TAL COST FORMULAE

- 1.C= A/Mo-(Eg)

- 2.T=A/Mo-(Eg)

- Where:

VARIABLE DEFINITION

- C= Per minute cost of telephone service.
- T= Per minute Termination Charge.
- A= Weighted average direct and indirect Costs. Comprising:(Kn+Dn + OMCn+R&Dn+And +Tn).

- Mo= Total incoming and outgoing international minutes(capacity utilization).
- Eg= Efficiency gains
- USO= Per unit expenditure on network expansion, particularly in areas where network investment is uneconomic

DEFINITION CONSTITUENTS OF A

- Kn= *Allocated investment cost:* either the debt service cost of investment or the opportunity cost in respect of capital invested, plus return to equity consistent with market rate of interest.

- Dn= *Allocated amortization/depreciation cost:* allocated annualized depreciation costs on capital goods(building, circuits, and equipment i.e total investment cost less net salvage divided by estimated life of plant.

CONTINUED

- OMCn= _Allocated Operation and Maintenance costs_:the proportion of total expenses on activities required to operate and upkeep the telephone plant that are generated directly by delivery of IMTS.

- R&Dn= the proportion of R&D cost attributed to the realization of efficiency gains.
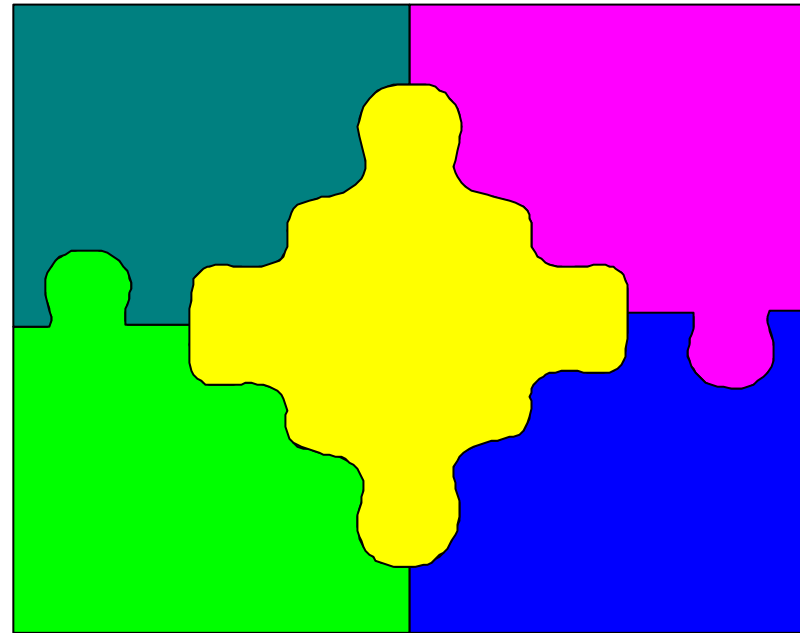
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- Adn= _Allocated Administrative Cost_: the proportion of overhead expenses incurred to operate the plant in order to deliver per unit IMTS, but which cannot be directly appropriated through activity-based allocators. Costs include expenses related to management, planning,financial and human resource management, and legal input. Also included are investment support charges re: building, furniture, office equipment etc.

CONTINUED

- Tn= *Allocated Tax Costs:* comprises the relevant proportion of corporation and other taxes (value added taxes, ad valorem taxes etc)

ESTIMATING EFFIEIENCY GAINS

- Efficiency gains (Eg) denote movement on the production possibility curve toward least cost production.

- Eg may be input-based (I_b), output based (O_b)or a combination of both factors.

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- I_b = significant reduction input/output ratio influenced by such factors as: technology, improved efficiency in use of physical and human resources, lower financial charges.
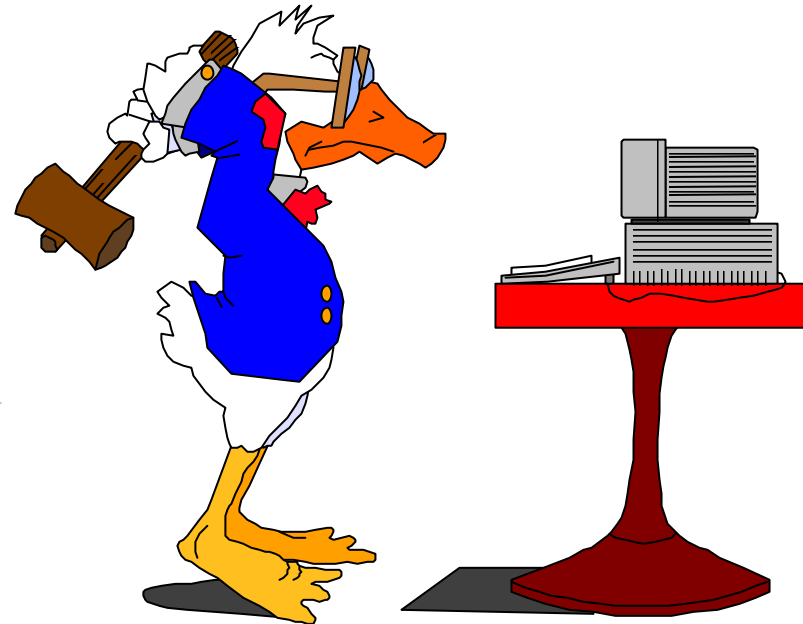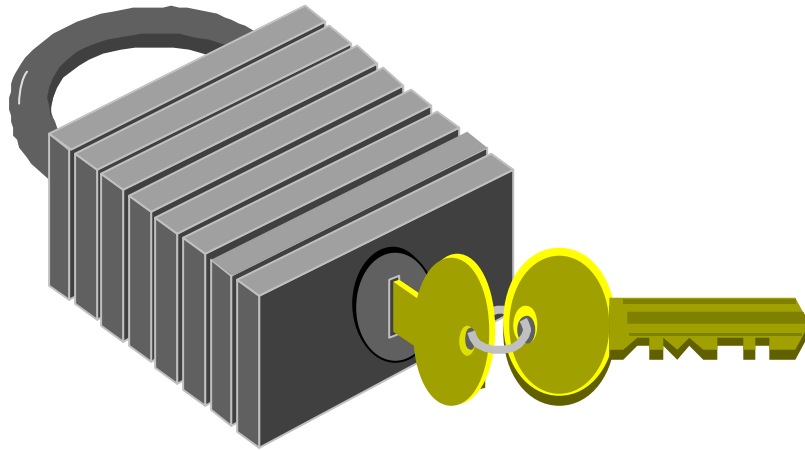
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- O_b= reduction in input/output ratio without any significant change in the input index. Indicates increase in throughput (capacity usage).

QUANTITATIVE ASSESSMENT

- I_b and O_b are both measured in terms of variation in the ratio A/M where:

- A= index of costs

- M= Throughput index.

PROBLEMS OF QUANTATIVE ASSESSMENT OF Eg

- In a non competitive market the Regulator should approve/determine the Eg coefficient.

- Could be a very difficult exercise consequent upon:

CONTINUED

- Cooperation of the administration in providing data in a timely manner and in sufficient detail.

- Likely hood of administration to limit cooperation because of preference to convert gains into profit.
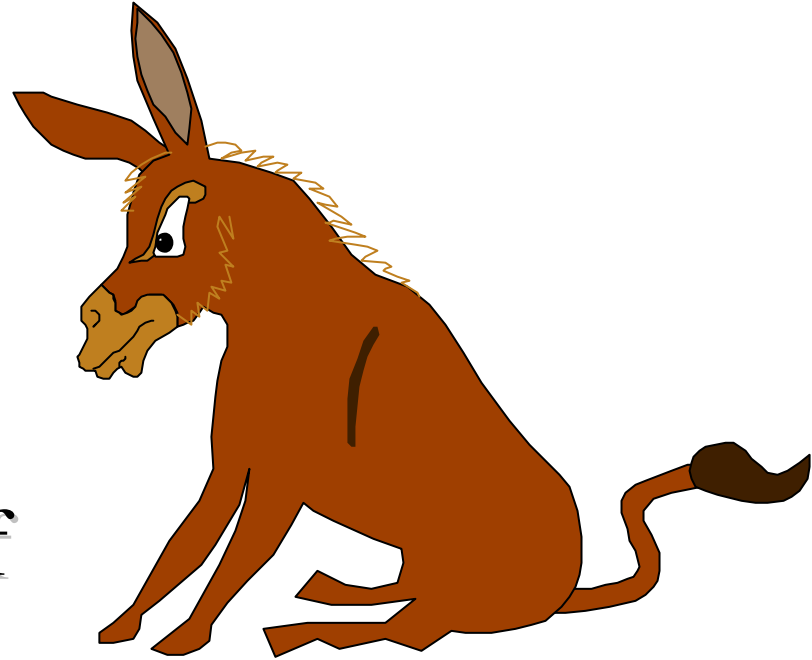
VIABLE ALTERNATIVE

- Derive a proxy coefficient of Eg on the basis of an index the following indicators:

- price trend on the global market for IMTS;

- price trend reduction in the TAL region for IMTS.

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- network expansion
- growth trend in IMTS for the country.
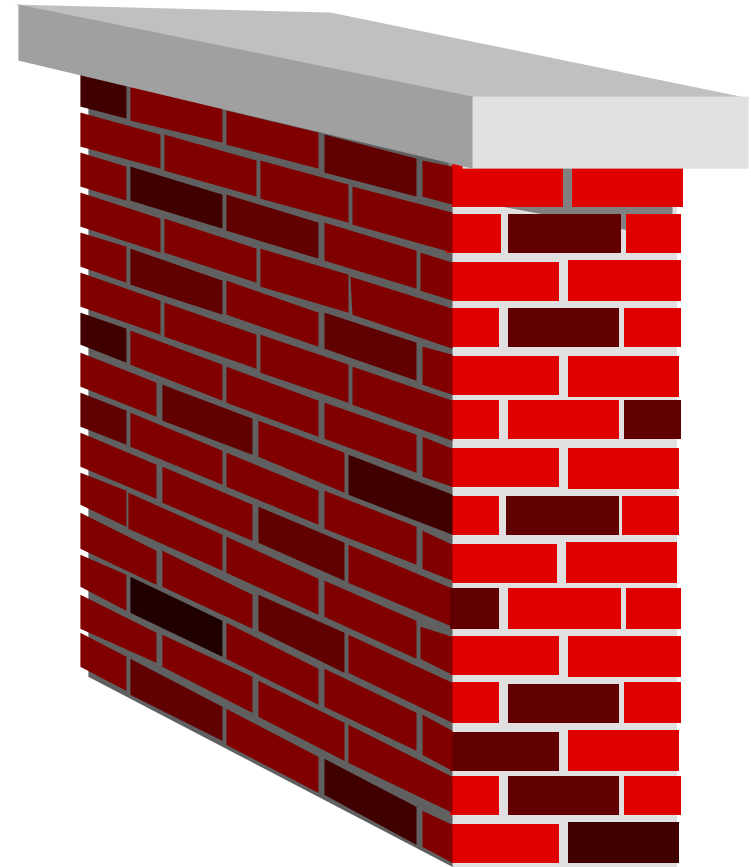- national economic policies and programmes in the country.

ESTIMATING USO

- USO$= B/M_1$ where:

- B is the projected additional cost to attain nationally prescribed level of teledensity in year $n+1$.

- M_1 is projected incremental minutes associated with network expansion in year $n+1$

DISAGGREGATED TAL FORMULAE

- $C = K_N + D_N + OMC_N + R\&D_N + AD_N + T_N)/M_{ON} - EG_{(N+1)}$

- $T = C + B/M_1$

FLEXIBILITY OF MODEL

- The model permits the country the flexibity to calculate cost elements on the basis of current cost or historical cost.

- A variant of cost allocators can be applied to appropriate cost.

- Cost methodology of choice can be applied.
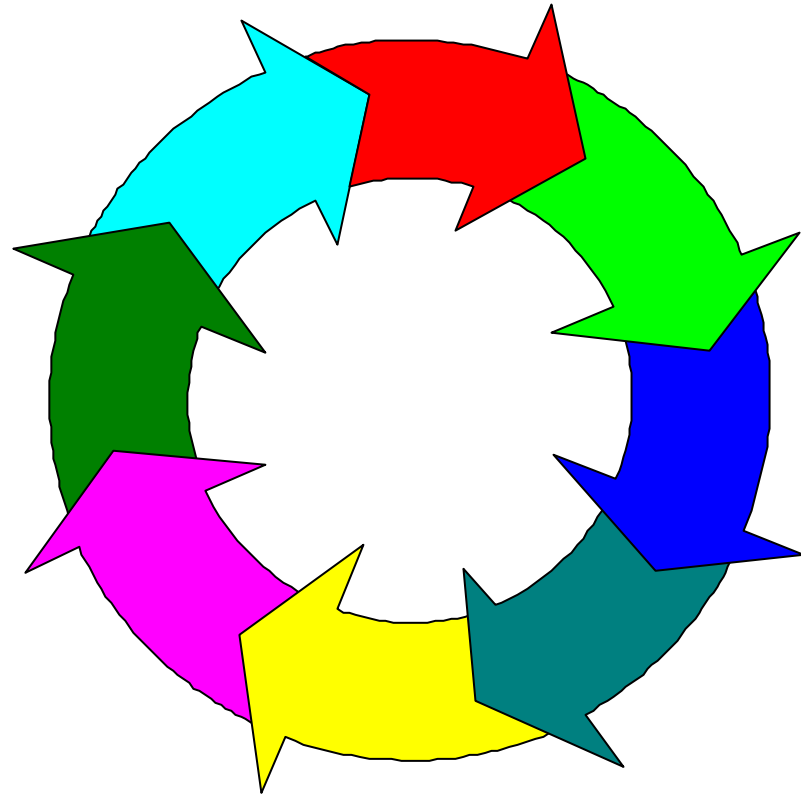
STATUS OF TAL MODEL

- Approved by the TAL group of countries.
- Endorsed at the ITU
- Forms part of the group of models that are being studied by the Rapporteurs group of Study group 3, ITU-T
- Subject of further revision to capture dynamic environment.