Workshop on Cost calculation

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Implementation of the Agreed Principles for the Cost Model

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Note: The views expressed in this presentation are those of the author and do not necessarily reflect the opinions of the ITU or its membership.

The Tariff issue

- The liberalisation of trade on services in the generally industrialised countries coexists with monopoly regimes generally in developing countries;
- this has led to controversies on relations between liberalised and non liberalised markets

Seeking for a new negotiation framework

- The FCC (USA) imposed a Benchmark order to lower the settlement rates but the international community seems to prefer a multilateral agreement;
- the WTPF98 (ITU) expressed the opinion that a Focus Group be created to consider the issue of the transition to cost orientated rates;

Contribution of the ITU-T

- Within the framework of the SG3, the Focus Group proposes a mechanism and suggest indicative target rates depending on: the teledensity, the development level and extent to which the settlements in-payments are or aren't an important part of the global revenues of an operator

Contribution of the UIT-D

- The WTDC98 adopts the Resolution 12 on tariff issues: short term support for cost calculations, and long term support to countries with a view to help improve the accounting systems;
- the same conference highlights the Question 12/1 specially on tariff re-balancing

The ITU and the International tariffs

- The recommendations D.150 and following set the international accounting regimes and the mechanism of revenues sharing;
- the D.150 have been revised to welcome three new regimes:
  - ***the settlement rate***
  - ***the termination charge, and***
  - ***the full competition***

The new regimes

- The settlement rate is negotiated bilaterally and set the conditions under which an operator in country "A" accepts to terminate on his network the calls coming from an operator in country "B";
- the termination charge is fixed by an operator "A", on a transparent basis, to terminate on his network the traffic coming from any international operator;

- The free competition regime can be established between operators evolving in markets that are fully opened to competition;

The constraint of transparency requires that an operator have a cost calculation mechanism accepted by the other parties, specially for termination charge level setting;

The cost orientation

- The D.140 stipulates that the accounting rates must be cost orientated and non discriminatory;
- it also gives a delay (1 to 5 years form 1995) for full implementation ;
- the annexe E to D.140 (the adoption procedure is underway) gives the indicative target rates to be met within a given timeframe;

D.140 Annexe E summary

- Applies if the approach 1 of the Annexe C of the same recommendation is not applicable
- defines the following indicative target rates:

T<1	1<T<5	5<T<10	10<T<20	20<T<35	35<T<50	T>50
0,327 DTS	0,251 DTS	0,210 DTS	0,162 DTS	0,118 DTS	0,088 DTS	0,043 DTS

Exceptions

- Small Island States: 0,266 SDR
- LDC and « As IF »: 0,312 SDR
- Regional models -> in the region and with other regions upon bilateral agreement
- Target date is function of the dependency level
- Target transit fee: 0,05DTS (upper limit) in year 2000 at the latest;

Transition as a function of the dependency level

Net settlements (NS) % total revenues (TR)	Target Year
NS/TR $\leq$ 10%	End of 2001
10 %< NS/TR $\leq$ 20%	End of 2002
20% < NS/TR $\leq$ 30%	End of 2003
30% < NS/TR	End of 2004

Regional tariff Groups

- Question 8/3 of the WTSC96
- Regional tariff studies and cost models

The TAF GROUP

Tariff principles

Paradigm

- Limitation to the automatic service
- No binding reference value
- Sharing the information on the cost structure of the telephone network
- Sharing the information on the average costs and the cost ranges
- Choice of the FDC for the study period 1997-2000

Implementation of the Agreed Principles for the Cost Model

- The model needs to be transparent enough to be acceptable by the other regions;
- it must be flexible enough to support simulations and negotiations with third parties ;
- in supplement to international costs and tariffs, it must give indications on urban and interurban costs to support tariff re-balancing efforts.

The SG3 Rapporteurs Group on cost models principles

Cost Concepts

- Cost recovery: to do in such a way that the costs incurred to provide service be recovered through tariffs (FDC);
- Competitive costing: to do in such a way that only the extra-costs generated by the volume variation of the offered service be recovered through the tariffs (IC).

Managing the evolutions

- Historical Costs: the considered costs are the cost prices of the infrastructure and the services;
- Actual costs: although based on the cost prices, they take into account the environmental changes: the natural reduction of the price of equipments, loss of buying power of the local currency

Real versus Optimum Costs

- Incurred costs (even actual) are not necessarily the best costs;
- usage of new technologies could lower the costs
- the level of efficiency of the service provision can be an important cost factor;
- nevertheless, one must relate any judgement to the real conditions assessed by the local market.

Causality

- In many case, it will be possible to identify the causality link between the costs and the services offered through the technical network;
- more difficult to establish is the causality link between the support costs and the volume of service offered;
- “ABC” is a satisfactory tool but its implementation needs care and method.

Basic principles for cost models

- Transparency:

  The open availability of information used in the cost derivation process in order to allow comprehension of the final rate from the vantage point of an external analyst;

- Practicability:

  The ability to implement a costing methodology with reasonable demands being placed on data availability and data processing in order to keep the costing exercise economical, yet still useful;

- Causality:
  - ***The demonstration of a clear cause-and-effect relationship between service delivery on the one hand and the network elements and other resources used to provide it on the other hand, taking into account the relevant underlying cost determinants (cost drivers);***

- Contribution to the common costs:
  - ***Costing methodologies should provide for a reasonable contribution to common costs;***
- Efficiency:
  - ***The provision of a forecast of cost reductions that result from a more efficient combination of resources;***

Reponses offered by the TAF Model

(In addition to full D.140 compliance)

EFDC

- The very low teledensities, the unavailability of Analytic Accounting and the absence of “ABC” in the operators management tradition make it impossible for the majority of TAF members to implement Incremental Costing

Adjusted depreciation (1/3)

- The linear depreciation is applied by the majority of the telecommunication operators;
- nevertheless, it is possible to to consider natural trend of costs of telecommunication equipments, where applicable, and adjust the depreciation to actual costs;

Adjusted depreciation (2/3)

- The buying power loss of the local currency is to be considered as well: $e = 1 - \sqrt[n]{\frac{C_0}{C_n}}$
- where:
  - ***C_0 is the value of 1SDR in the local currency at the provisioning year;***
  - ***C_n is the value of 1SDR in the local currency "n" years after;***
- according to statistics, the average age of the equipments of *an ordinary* telecommunication network is equal to the half of their life time (D/2)

Adjusted depreciation (3/3)

- $CCA=DEP*((1+t)^{D/2} /(1-e)^{D/2} -1)$

Where :

- CCA=Current Cost Adjustment
- DEP=Annual Depreciation
- τ=Compound Annual Growth Rate of the cost of telecommunication equipments
- ε=Compound Annual loss of local currency buying power
- D=Depreciation/life time

Efficiency (1/2)

- The efficiency is calculated through a combination of the following factors:
  - ***the capacity installed;***
  - ***the capacity in use;***
  - ***the compound annual growth rate of the capacity in use;***
  - ***the time needed to add new capacity***

Efficiency (2/2)

- **$K' = Max(0 ; \Delta K - K_u * [(1+t)^N - 1])$**

où:

K ' = the inefficient capacity;

ΔK = the unused capacity;

K_u = the capacity in use;

t = the compound annual growth rate of the capacity in use

N the time needed to add new capacity

Causality

- The cost of the local loop is not volume sensitive;
- the local loop costs are incurred for the benefit of the whole world telephone users;
- no operator can bill a flat subscription to the whole world telephone users ;
- the cost of the local loop must then be recovered on the basis of usage (incoming and outgoing communications).

Specific Costs

- Somme specific costs are easy to isolate event if the operator has no analytic accounting system:
  - ***Services studies and development***
  - ***Service costing***
  - ***Advertisement***
  - ***Sales (distribution network)***
  - ***Customer care***
  - ***International activities***
  - ***reserves for uncollectibles***

Moving from Cost to Tariffs

Other Tariff elements

- A country's regulatory authority may impose policy constraints on the telecommunication services prices of an operator. Among those, one can recognise:
  - ***Access deficit***
  - ***levies on the benefit***
  - ***Universal Service Obligation***

Access deficit (1/4)

- Access deficit arises when a regulation authority opposes the necessary increase of the components hereunder with a view to get cost orientation of the domestic prices:
  - ***connection fee***
  - ***monthly subscription fee***
  - ***price of a minute of urban call***
  - ***price of a minute of interurban call***

Access deficit (2/4)

- Before reallocating the access deficit, it must be taken care that only the local subscribers are presently paying the connection rate and the monthly subscription fees.
- The tariff of outgoing communication should be reduced by:

$$\left(\Delta Parc * R_{conn} + msf * Nb_{subscr} * 12\right) * \frac{k_{si}}{\sum_{j=1}^{n'} T_j k_{sj}}$$

Access deficit (3/4)

- The following relation gives a measure of the access deficit:

$$D = T_{urb} * \left(k'_{urb} - p_{urb} \right) + T_{interub} * \left(k'_{interub} - p_{interurb} \right)$$

Access deficit (4/4)

- If D>0 then the access deficit is allocated to all the services telecommunication services offered by the operator;
- if D<0 there is no access deficit. The surplus can be allocated to the domestic services (urban and interurban) with a view to reduce and rebalance their tariffs

Levy on the benefit

- The benefit of an operator is shared by:
  - ***the shareholders through the return on capital, and***
  - ***the Country through the levy on the benefit, where applicable.***
- The shareholders usually require a given return on capital after levy

Levy on the benefits

$$L_{benefits} = \frac{t_{levy}}{1 - t_{levy}} * r_{capital} * Capital$$

Universal Service Obligations

- A country may impose a levy on the revenues of an operator in order to fund the USO costs.
- USO may be combined or not with Access deficit
- Where applicable,

$$USO = r_{uso} * \left(L_{benefit} + \sum_{i=1}^{n} k_{si} * T_i \right)$$

Other tariff elements allocation

- Once calculated, access deficit, levy on the benefits and universal service obligations must be allocated to the due services;
- the generic relation for that purpose is as follows:

$$Share_{si} = \frac{Tariff_{element}}{\sum_{j=1}^{n} k_{sj} * T_j} * k_{si}$$

Conclusion

- The resulting tariffs are cost orientated and balanced;
- they may not be applicable at the moment but can be considered as target tariffs;
- the target dates of their application should be negotiated with the national regulatory authority and with the international operators.