



TAF Model Application: Tariff trends

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Note - The views expressed in this presentation belong to the author and do not necessarily reflect the opinions of ITU or its membership.

Case Studies



- More than twenty cases were studied in 2001 based on the TAF model;
- Most significant cases consolidated and a typology established with a view to providing similar countries with tools for comparison;
- A fictive country created by combination of data from a panel of 8 countries;
- The results provided by the fictive country case may represent average benchmarks for the region.



Individual Case Studies

- Typology based on:
 - *Population density*
 - *GDP*
- Types identified:
 - *High density and low GDP*
 - *High density and middle GDP*
 - *Middle density and low GDP*
 - *Middle density and middle GDP*
 - *Low density and low GDP*
 - *Low density and high GDP*
- For further information on these cases consult the following publication:
 - « *Cost, Tariff and Interconnection rate calculation Methodology – Application to case studies* »

Consolidated case study



- This presentation focuses on the results given by the case study applied to the fictive country created by a consolidation of the data provided by the panel of eight countries;



OPEX Structure

General accounting's charges sub-totals	
Costs coming from General accounting data	
Purchases and inventories variations	6.335334E+07
Transports	9,235,580
Services received from external providers:	118,560,900
levies and taxes	16,804,730
Salaries and wages	161,700,300
Other costs	59,244,910
Financial and assimilated costs	99,483,820
Annual amortisation:	117,224,600
Annual provisions	61,600,670
TOTAL	707,208,850
Non telephone costs to be subtracted (%)	
	5.98%

8,96%

1,31%

16,76%

2,38%

22,86%

8,38%

14,07%

16,58%

8,71%

CAPEX Structure



Cost structure of the network [?] [X]

Distribution of the cost of the network equipments

International Transmission	4.95%
International Switching(%):	3.9%
National Switching(%):	27.25%
National Transmission (%):	20.56%
Acess Network (%):	33.39%
Other assets (%)	10.0995%
TOTAL	100.0%

NEXT...
Cancel

International network costs

Access still predominant



Traffic Structure and Specific costs

Data collection for cost calculations

Terminal traffic data		International Transit Traffic		Costs of marketing and sales	
Urban traffic:	4,320,013,000	Int->Sreg	53,000	Service development	1,219,654
Interurban Traffic:	1,137,646,000	Int->Int	17,693	Sales	4,068,392
Outgoing Sub-reg Traffic	23,211,050	SReg->SReg	0	Advertisement	4,842,600
Incomming Sub-reg. Traffic:	23,316,020	SReg-> Int	11,757	Billing	3,100,871
Outgoing International. Traffic:	216,190,500			Customer Care	3,093,792
Incoming International. Traffic:	338,192,900				
Share of the capital in the urban traffic	63%	Interconnection Traffic		Net. Planning and engineering	
Share of the Capital in the International Traffic:	64%	Nat. Incoming Simple Transit	48,445,870	Planning and Engineering	15,851,240
% of the national transmission network used by the international traffic of the Capital city	0%	Nat. Incoming Double Transit	20,759,060		
		International outgoing	74,263,020		
		National outgoing	345,409,000		
		International incoming	59,184,560		
		National Transit	31,174,050		
				Other Support Costs	
				Other support costs	23,978,880

Fixed-to-mobile traffic volume much higher than Mobile-to-Fixed



Network, Capital and Inefficiency Costs

Data collection for cost calculations

Network cost data

	Depreciation	Current Cost Adjustment	Operation and maintenance costs	TOTAL	Cost CAGR	Depreciation delay	
						Real	Convened
International Transmission:	5 455 621	0	15 640 329	21 095 950	%	10	10
International Switching:	4 298 368	0	12 322 683	16 621 051	%	10	10
National Transmission:	22 660 115	0	64 962 658	87 622 774	%	10	10
National Switching:	30 033 470	0	86 100 799	116 134 269	%	10	10
Access Network	36 800 645	0	105 501 126	142 301 771	%	10	10
TOTAL:	99 248 219	0	284 527 596	383 775 815			
	Other depreciations	Capital Employed					
	10 966 350	1 807 946 200					

Other cost data

Interconnection charges:	0	Financial Debt	406 731 200	Installed capacity	1 250 560	Extension delay	2
Weighted Average interest rate (%)	6%	Equity	1 401 215 000	Capacity in Use	895 781	Average annual monetary erosion	
Expected Return on Equity (RoE):	11%	Corporation Tax (%)	38%	Lines in use annual growth rate (%):	14.61%		

Reasonable Financial structure

Validate

Next

Cost elements to be allocated to services



Adjusted Costs

International Transmission:	21 095 950
International Switching	16 621 051
National Switching	116 134 269
National Transmission	87 622 774
Access Network	142 301 771
Invested Capital Cost	159 142 060
Other Common Costs	41 007 484
Inefficiency Cost	15 271 498

Costs specific to ...

International incoming Traffic	0
The Whole Internat. Traffic	1 338 386
Far internat. Traffic	33482580
My Customers	10 263 055
ICX Customers	0
Incoming Traffic	0

NEXT

Inefficiency costs

Service Costs



Cost calculation results

Services	Opérateur moyen 1999	Averages of the TAF Group	Averages of the best 10	Cost range of the best 10 of each		
				Minimum	Maximum	
Urban	<input type="text" value="07"/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	
Interurban	<input type="text" value="13"/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	
Incoming International	<input type="text" value="18"/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	
Outgoing International:	<input type="text" value="19"/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	
Incoming Sub-regional:	<input type="text" value="14"/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	
Outgoing Sub-regional:	<input type="text" value="14"/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	
Interconnection	Simple trans <input type="text" value="06"/>	Double trans <input type="text" value="12"/>	MeTolcx <input type="text" value="08"/>	IntTolcx <input type="text" value="13"/>	IntTolInt <input type="text" value="13"/>	Transit OpLoc <input type="text" value="05"/>
Cost of transit	Int -> Int : <input type="text" value="17"/>	Int -> SReg: <input type="text" value="19"/>	SReg->Int: <input type="text" value="19"/>	SReg -> SRég: <input type="text" value=""/>		
Cost of network elements	IntTrans <input type="text" value="05"/>	IntSwitch <input type="text" value="04"/>	NatTransm <input type="text" value="04"/>	NatSwitch <input type="text" value="03"/>	AccessNet <input type="text" value="02"/>	

Compare with the results of the other TAF Group members

NEXT...

Actual endogenous price of services



Supplementary data for tariff calculations [?] [X]

Corporate tax rate:	38,%	Icx To Me Simple Transit	0,15
Universal Services Oblization rate (%):	0	Icx To Me Double Transit	0,17
Incoming USD funds:	0	Me To Icx	0,17
Price of a minute of urban communication:	0,04	Icx To the Whole international	0,54
Price of a minute of interurban communication:	0,1658	The Whole international To Icx	0,25
Installation fee:	76,78	Transit between Local Operators Via Me	0,02
Monthly subscription fee:	5		
<hr/>			
Average price of a minute of incoming international traffic:	0,53		
Average price of a minute of outgoing international traffic:	0,81		
Average price of a minute of incoming sub-regional traffic:	0,64		
Price of a minute of outgoing sub-regional traffic:	0,82		

NEXT

Cancel

Cost-Orientated Tariff Basis



**Imposed by
USO
policies**

Telephone Services Tariffs	
Terminal traffic tariffs	
Urban	0,0368
Interurban	0,1658
International Incoming	0,3524
International Outgoing	0,3601
Sub-regional Incoming	0,2698
Sub-regional Outgoing	0,2775
Interconnection	
Nat. Incoming Simple Transit	0,1109
Nat. Incoming Double Transit	0,2227
Internat. Outgoing	0,2474
National Outgoing	0,1425
International Incoming	0,2474
National Transit	0,088
Tarif Transit	
Int <-> Int	0,19
Int <-> SRég	0,22
SRég <-> SRég	0,
Profits and Losses	
Int IN	0,1734
Int OUT	0,452
SRég IN	0,3742
SRég OUT	0,5385
Interconnection	
Inc. Simple	0,0342
Inc. Double	-0,0509
Int. Outgoing	0,2911
Nat. Outgoing	0,0262
Int. Incoming	0,0016
Nat. Transit	-0,0707
National policy parameters	
Outgoing contribution to USO:	%
USD incoming funds:	0
Price of a minute of urban:	0,0368
Price of a minute of interurban:	0,1658
Connection rate	77
Monthly subscription fees	5
Increase domestic tariffs by ----->	0,%
Access Deficit	
123 126 645	
Reset	
Rebalance	

**High extra margins
on international
traffic**

**The Access
Deficit weights
17% of
revenues,
explains 40% of
national and
international
rates**

**Inappropriate interconnection policies for
National to International traffic**

Cost-Orientated Revenues Distribution



Compte d'exploitation			
Revenues	Expenses	Results	Ratios
	CACULATED	ACTUAL	
Urban	158 760 478	158 760 478	
Interurban	188 621 707	188 621 707	
International Outgoing	84 284 467	194 508 522	
National Outgoing	49 220 363	58 270 498	
International Incoming	140 104 432	207 574 299	
National Incoming	28 372 907	50 586 539	
Transit:	2 760 170	2 760 170	
Installation	8 767 538	8 767 538	
Subscription fees	51 730 141	51 730 141	
TOTAL	712 622 201	921 579 891	

Demand-
price
elasticity
not
considered

Tariff rebalancing, given the actual MRF



Cost based

Cost based
interconne
ction rates

Telephone Services Tariffs

Terminal traffic tariffs	Tarif Transit	National policy parameters
Urban	Int <-> Int	Outgoing contribution to USO: %
Interurban	Int <-> SRég	USO incoming funds: 0
International Incoming	SRég <-> SRég	Price of a minute of urban: 0,0368
International Outgoing		Price of a minute of interurban: 0,1658
Sub-regional Incoming		Connection rate: 77
Sub-regional Outgoing		Monthly subscription fees: 5,14

Interconnection	Profits and Losses	Interconnection
Nat. Incoming Simple Transit	Int IN	Inc. Simple
Nat. Incoming Double Transit	Int OUT	Inc. Double
Internat. Outgoing	SReg IN	Int. Outgoing
National Outgoing	SReg OUT	Nat. Outgoing
International Incoming		Int. Incoming
National Transit		Nat. Transit

Access Deficit
0

Reset

Rebalance

Trading Account

Return to calculations

No ADC



Cost based Revenues Distribution

Transfer of revenues
from international
incoming and outgoing
to domestic services.

But the effect of
demand-price elasticity
may change the figures
and their distribution

Compte d'exploitation			
Revenues	Expenses	Results	Ratios
	CACULATED	ACTUAL	
Urban	319 784 219	158 760 478	
Interurban	150 724 610	188 621 707	
International Outgoing	50 597 639	194 508 522	
National Outgoing	28 213 663	58 270 498	
International Incoming	84 107 473	207 574 299	
National Incoming	17 032 820	50 586 539	
Transit:	1 664 100	1 664 100	
Installation	8 767 538	8 767 538	
Subscription fees	51 730 141	51 730 141	
TOTAL	712 622 201	920 483 821	

Tariff rebalancing through MRF adjustment



Telephone Services Tariffs

Terminal traffic tariffs	
Urban	0,0368
Interurban	0,1658
International Incoming	0,2115
International Outgoing	0,2162
Sub-regional Incoming	0,162
Sub-regional Outgoing	0,1666

Interconnection	
Nat. Incoming Simple Transit	0,0666
Nat. Incoming Double Transit	0,1337
Internat. Outgoing	0,1485
National Outgoing	0,0609
International Incoming	0,1485
National Transit	0,0528

Tariff Transit	
Int <-> Int	0,19
Int <-> SRég	0,22
SRég <-> SRég	0,

Profits and Losses	
Int IN	0,3143
Int OUT	0,5959
SReg IN	0,482
SReg OUT	0,6494

Interconnection	
Inc. Simple	0,0785
Inc. Double	0,0381
Int. Outgoing	0,39
Nat. Outgoing	0,1078
Int. Incoming	0,1005
Nat. Transit	-0,0355

National policy parameters	
Outgoing contribution to USO:	%
USO incoming funds:	0
Price of a minute of urban:	0,0368
Price of a minute of interurban:	0,1658
Connection rate	77
Monthly subscription fees	18,0886235
Increase domestic tariffs by ----->	0,%

Access Deficit: -1

Reset

Rebalance

The actual MRF are too low for the local price imposed by USO policies

More flexibility in the Monthly Rental Fee policy may lead to tariff rebalancing

Revenue Distribution



Compte d'exploitation			
Revenues	Expenses	Results	Ratios
	CACULATED	ACTUAL	
Urban	158 760 478	158 760 478	
Interurban	188 621 707	188 621 707	
International Outgoing	50 597 639	194 508 522	
National Outgoing	21 022 387	58 270 498	
International Incoming	84 107 472	207 574 299	
National Incoming	17 032 820	50 586 539	
Transit:	1 664 100	1 664 100	
Installation	8 767 538	8 767 538	
Subscription fees	182 048 061	182 048 061	
TOTAL	712 622 201	1 050 801 742	

**Higher rental
revenues**



Performances

Compte d'exploitation			
Revenues	Expenses	Results	Ratios
	CALCULATED	ACTUALS	
EBIT:	265 699 402	474 657 091	
EBITDA:	375 913 971	584 871 660	
TAX	92 246 855	171 650 777	
INTERESTS	22 944 520	22 944 520	
NET PROFITS	150 508 027	280 061 794	
USO CONTRIBUTION	0	0	
EVA:	-8 634 034	120 919 734	
REURN ON EQUITY	11%	21%	

The Economic Value Added is negative because of the inefficiency costs

<http://www.itu.int/ITU-D/finance/>



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Publication:

Trends in Economics and Finance Volume I :
Cost, Tariff and Interconnection Rate Calculation Methodology - Application to Case Studies

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Next Events

- African Seminar on Costs and Tariffs**
Arusha, Tanzania,
15-17 April 2002

Results from recent Seminars and Workshops

- Tariff Seminar and meeting of the Tariff Group for Latin America and the Caribbean (TAL Group)**
(Organized by ITU-T)
La Havana, Cuba,
22-25 October 2001
- Seminar on new trends in tariff policies (EUR)**
Bratislava, Slovakia,
25-27 September 2001

Coming Soon

- Study:** [Macroeconomic Study on Financing Telecommunication Development](#)
- Software:** [Development of Costs, Tariffs and Interconnection Rates Calculation Tool for national and international telephone services](#)

Databanks

- [Financial Institutions / Private Sources](#)
- Question 12/1:** Tariff policies, tariff models and methods of determining the cost of national telecommunication services [Survey of Tariffs and Costs: The Results](#)

Direct Assistance

- Assistance given to Burundi on cost sharing between interconnected operators**
Bujumbura, Burundi,
October 2001
- Network Interconnection Economic Studies and Strategies Assistance to Paraguay**
Asunción, Paraguay,
September 2001
- Assistance on Tariffs and Cost Calculation to Syria**
Damascus, Syria,

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