

An interconnection pricing toolkit for African countries

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**ITU Workshop on fixed-mobile interconnection
Geneva, 20-22 September 2000**

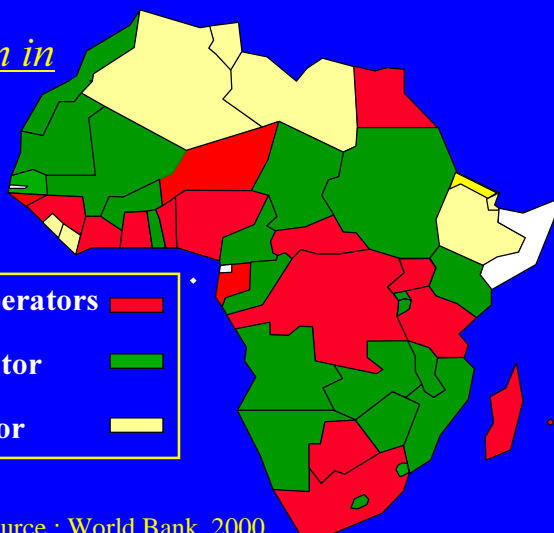


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Most African countries are introducing competition on the cellular market

*Africa : competition in
the cellular market*

- | | |
|----------------------------------|---|
| Several private mobile operators | ■ |
| One private mobile operator | ■ |
| No private mobile operator | ■ |



Source : World Bank, 2000

Why is interconnection pricing important ?

- **Encourage fair and efficient competition**
- **Therefore push end-user tariffs down**
- **Encourage efficient use of infrastructure**
- **Bring operators to win-win situation, maximize market growth**



NRAs request assistance on interconnection pricing policy

- **Little financial and human resources**
- **Limited experience, need to build credibility on dispute resolution**
- **Incumbent has historical and political power**



NRAs request assistance on interconnection pricing policy (2)

- **Few tools adapted to emerging countries**
- **Privatization of state-owned incumbent ongoing simultaneously**
- **Interconnection critical for new entrants**



Specific challenges in African countries

- **Under-developed network**
 - ↳ focus on network expansion
 - ↳ capacity problems for interconnection
 - ↳ strict LRIC non achievable in short-term
- **Little data available**
 - ↳ complex cost models not adequate
 - ↳ accounting data difficult to use



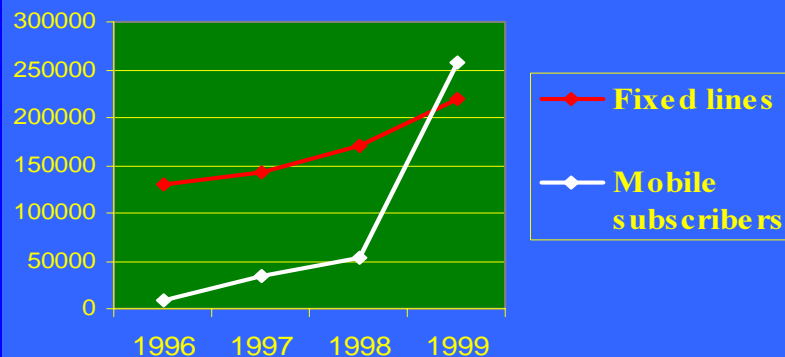
Specific challenges in African countries (2)

- **Incumbent not ready for competition**
 - ➔ reluctant to objective negotiation
 - ➔ lack of interconnection knowledge
 - ➔ lack of business visibility
- **Other issues** : bad debt, waiting lists, unbalanced end-user tariffs...



Mobile telephony will be taking the market lead in voice communications

Subscribers - Cote d'Ivoire



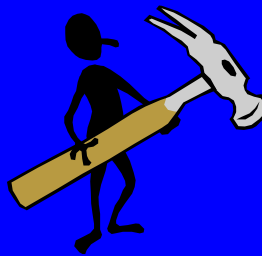
Source : ITU, ATCI

Mobile telephony will be taking the market lead in voice communications

- Regulatory focus should progressively shift on the new entrant.
- Mobile network cost models should be developed for regulators (as well as fixed network models, including wireless local loops)

What pricing tools ?

- Cost models
- Benchmarking
- Guide for negotiations



Cost models

1st step : bottom-up cost model

Estimates cost of reconstructing
fixed or mobile network

➔ Provides a floor estimate for tariffs



Bottom-up cost model Estimating cost of network



Switch locations are given
(scorched-node hypothesis)

Bottom-up cost model Estimating cost of network (2)



**Dimension switches and
transmission with traffic data**

Bottom-up cost model Estimating cost of network (3)



...	\$	×	...	%	
+	...	\$	×	...	%
+	...	\$	×	...	%
+				
			\$	

**Add-up element per annum cost,
attribute right part to interconnection**

Bottom-up cost model Estimating cost of network (4)



+ Operational cost
 + Non-network cost
 + Mark-up

Add indirect costs

Bottom-up cost model Estimating cost of network (5)



Local calls :
 cents/min
 Single transit :
 cents/min
 Double transit :
 cents/min

Obtain per-minute cost with traffic data

Cost models

1st step : bottom-up cost model

Data required :

- **network topology** → operator
- **traffic data** → operator, modeling
- **financial data** → operator, institutions
- **equipment costs** → best practice in similar environment.

→ Can be implemented if operators cooperative



Cost models

2nd step : top-down cost model

- **extracts cost of interconnection from an operator's accounting**
- **usually requires an accounting reform**
- **confidentiality issues**

→ **Not achievable at the moment**
(provides a ceiling estimate for tariffs)



Benchmarking

- **Scarce data on Africa (ITU, World Bank)**
- **Few countries where competition is stable**
 - ↳ difficult to assess best practice
- **Different tariff structures in different countries**



Benchmarking - which countries are meaningful to compare ?

- Compare countries which incur the same costs.
 - ↳ try to assess best practice
 - ↳ get idea of costs if unavailable directly
- To find cost drivers, run model “backwards”
- Other factors influence tariffs : **regulatory power and situation, market power, ...**



Benchmarking - what criteria?

- **GDP per capita** (running costs, site costs)
- **Number of lines in main cities** (local tariffs)
- **Network structure, POI localisation** (switching costs)
- **Density of population** (transmission distance)
- **Density of phones per square km** (equipment costs)



How to use these tools

- **They do NOT give the “right” tariffs**
- **The bottom-up and top-down models may provide floor and ceiling tariffs between which the operators can negotiate.**
- **Benchmarking can serve as a reality check, or as a basis for a default agreement.**



Negotiation guidelines : up-front preparation

- **Clearly written legal documents** (sometimes too late) : powers, responsibilities, NRA independence, interconnection decree.
- **Publish interconnection guidelines**
 - ↳ avoid unnecessary disputes
 - ↳ set up clear resolution mechanisms
- **Get familiar with the issues** : training, pricing tools



Negotiation guidelines : regulator's role

- **Should not lead the negotiations...**
 - ↳ let the market act
- **...but set the limits...**
 - ↳ tariff floor and ceiling, calendar
- **...and arbitrate disputes**



Negotiation guidelines : during the negotiations

- **Focus on physical interconnection at first**
 - ↳ most important for new entrant
- **Request interconnection catalog from incumbent**
- **Stay open to consultation + transparency**
- **Stick to prescribed calendar**
- **Swift, motivated, transparent arbitration**
- **Don't aim too high if market immature**



Next steps

- **Test the analytical model in Burkina Faso and Gabon**
- **Pilot the toolkit in one or two selected African countries**
- **Improvement of network cost data by working with equipment vendors and specialized consultants**



Next steps (2)

- Adapt the output of toolkit to rate rebalancing schedule of incumbent
- Put the toolkit on the Web
 - ➔ can be updated by NRAs.

