Telecommunication statistics for effective regulation

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Telecommunication Development Bureau
International Telecommunication Union
To be discussed...

- Global liberalization and regulation trends
- Why regulators need to collect market statistics
- Data groups and types
- Data methodology
- Data source: operators and surveys
- Best Practices
  - UK (Ofcom), Hong Kong, China (OFTA)
  - Africa: Uganda (UCC), Ivory Coast (ATC)
- Regional cooperation (ECOWAS) and data collection tools
With liberalization comes regulation

**Legal status of competition of telecom segments, mid-2003**

- Local: Monopoly 50%, Competition 50%
- Long distance: Monopoly 60%, Competition 40%
- International: Monopoly 70%, Competition 30%
- Cellular: Monopoly 80%, Competition 20%
- ISPs: Monopoly 90%, Competition 10%

*Source: ITU*

**Number of regulatory agencies, global**

- 1990: 13
- 1992: 26
- 1994: 33
- 1996: 55
- 1998: 85
- 2000: 105
- mid-2003: 123

*Establishment of NCC, 1992*

*Source: ITU*
Monitoring license requirements

“The Ministry of Communications shall formulate policies on universal access, including specific targets to be achieved over a given period of time. The NCC is responsible for...defining development targets and other ..goals for national communications access”

Source: Nigeria National Policy on Telecommunications, Chapter 9
Nigerian Communications Act 2003

• Part II: Monitoring and reporting (section 89)
  – (1) The Commission shall monitor all significant matters relating to the performance of all licensees ... 
  – (2) (a) use any of its powers...without limitations...of investigation and information-gathering...
  – (b) have regard to such industry performance indicators as the Commission considers appropriate 
  – (3)...the Commission shall monitor and report..: (b) the efficiency in which licensees provide facilities and services...(c) the quality of services, ...(d) industry statistics generally including but not limited to service provisioning, traffic pattern, industry operators, etc

• The license agreements also discuss “Requirement to Furnish Information to the Commission”
Telecommunication data categories

- Network subscribers (fixed, mobile etc)
- Quality of service
- Traffic
- Tariffs
- Revenue/Investment
## Quarterly mobile data

<table>
<thead>
<tr>
<th>Revenue</th>
<th>Volume</th>
<th>Subscribers</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Calls</td>
<td>• UK calls</td>
<td>• Postpaid/prepaid</td>
</tr>
<tr>
<td>• Connection</td>
<td>• Outgoing intern.</td>
<td></td>
</tr>
<tr>
<td>• SSM+MMS</td>
<td>• Roaming</td>
<td></td>
</tr>
<tr>
<td>• Interconnection</td>
<td>• Interconnection</td>
<td></td>
</tr>
<tr>
<td>• Revenue per subscriber (ARPU)</td>
<td>• SSM+MMS (units)</td>
<td></td>
</tr>
</tbody>
</table>

Growth rate/change

By operator/consolidated
Quarterly fixed data

British Telecom revenue and volume, market shares (%) and totals, Jan-March 2003

<table>
<thead>
<tr>
<th>Market share (%)</th>
<th>Local calls</th>
<th>National calls</th>
<th>Calls to mobiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>233 £ millions</td>
<td>169 £ millions</td>
<td>290 £ millions</td>
</tr>
<tr>
<td>Volume</td>
<td>12'737 millions of minutes</td>
<td>6'373 millions of minutes</td>
<td>2'284 millions of minutes</td>
</tr>
</tbody>
</table>

Revenue shares are considerably higher than volume shares.
Regularity, timeliness, definitions

- OFTA collects (and publishes online!) detailed monthly telecommunication statistics since 1990
- Indicators are well defined
  - “Broadband Internet access refers to services with downloading speed of 1 Mbps or above using cable mode, ATM, ADSL, DSL or other technologies”
  - “The statistics are OFTA estimated figures based on the return from the ISPs. They do not include users who are not customers of the licensed ISP, such as users of the campus networks in the universities”

![Internet subscribers in Hong Kong, China, by technology (in thousands)](image-url)
International comparability

<table>
<thead>
<tr>
<th>DEMOGRAPHY, ECONOMY</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>6.786 Million</td>
</tr>
<tr>
<td>Households</td>
<td>2.158 Million</td>
</tr>
<tr>
<td>TELEPHONE NETWORK</td>
<td></td>
</tr>
<tr>
<td>Main telephone lines in operation</td>
<td>3.832 Million</td>
</tr>
<tr>
<td>% digital main lines</td>
<td>100%</td>
</tr>
<tr>
<td>% residential main lines</td>
<td>55.58%</td>
</tr>
<tr>
<td>Public payphones</td>
<td>9,659</td>
</tr>
<tr>
<td>MOBILE SERVICES</td>
<td></td>
</tr>
<tr>
<td>Cellular mobile telephone subscribers</td>
<td>6.396 Million</td>
</tr>
<tr>
<td>Digital cellular subscribers</td>
<td>6.396 Million</td>
</tr>
<tr>
<td>Percentage of population (%)</td>
<td>94.3%</td>
</tr>
<tr>
<td>OTHER SERVICE</td>
<td></td>
</tr>
<tr>
<td>ISDN subscribers</td>
<td>11,621</td>
</tr>
<tr>
<td>ISDN B channel equivalents</td>
<td>79,846</td>
</tr>
<tr>
<td>TRAFFIC</td>
<td></td>
</tr>
<tr>
<td>International outgoing telephone (minutes)</td>
<td>3.981 Billion</td>
</tr>
<tr>
<td>International incoming telephone (minutes)</td>
<td>1.745 Billion</td>
</tr>
<tr>
<td>International boothway telephone (minutes)</td>
<td>5.726 Billion</td>
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<tr>
<td>STAFF</td>
<td></td>
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<tr>
<td>Full-time telecommunication staff</td>
<td>17,756</td>
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</tbody>
</table>
Uganda Communication Commission

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</thead>
<tbody>
<tr>
<td>Fixed Telephone Lines</td>
<td>56,196</td>
<td>58,261</td>
<td>61,462</td>
<td>56,149</td>
<td>54,976</td>
<td>59,472</td>
<td>59,590</td>
<td>60,995</td>
<td>64,856</td>
</tr>
<tr>
<td>Mobile Subscribers</td>
<td>12,000</td>
<td>72,602</td>
<td>56,276</td>
<td>0,343,93</td>
<td>3,105,05</td>
<td>6,275,95</td>
<td>9,966,21</td>
<td>0,827,13</td>
<td>3,113</td>
</tr>
<tr>
<td>Internet/Email Subscribers</td>
<td>1,304</td>
<td>4,248</td>
<td>5,638</td>
<td>5,999</td>
<td>6,500</td>
<td>6,500</td>
<td>7,024</td>
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</tr>
<tr>
<td>National Teleco Operators</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<td>2</td>
<td>2</td>
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</tr>
<tr>
<td>Mobile Cellular Operators</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
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<tr>
<td>VSAT</td>
<td>3</td>
<td>7</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Internet Service Providers</td>
<td>7</td>
<td>9</td>
<td>11</td>
<td>17</td>
<td>17</td>
<td>17</td>
<td>17</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>Private FM Radio Stations</td>
<td>28</td>
<td>37</td>
<td>100</td>
<td>112</td>
<td>115</td>
<td>117</td>
<td>117</td>
<td>119</td>
<td>119</td>
</tr>
</tbody>
</table>
ATC: Agence des télécommunications de Côte d’Ivoire
Data collection and methodology

• Avoid information overload
• Close coordination between regulator and operators (optimal information supply)
• Data should be clearly defined
• Information needs to be consistent and comparable, in type, in form and in timeliness

Ideally statistics are collected monthly and basic statistics (fixed lines/mobile subscribers/Internet subscribers/traffic) should be collected and disseminated no less than on a quarterly basis

• Consider international efforts to collect/harmonize ICT/Telecom statistics for maximum comparability (ITU)
Universal service & universal access

- Both per capita and universal service (household level) measurements have limits
- Developing countries should strive to achieve universal access
  - Availability of a service
  - Percentage of the population that is covered by a mobile cellular signal
- Community measurements help evaluate availability of services in localities (cities, towns, villages)

Diagram: Telephone facilities available to South African households, 2001 (%)

- Universal access: 94%
- Universal service: 42.4%
- Fixed and/or mobile phone at home
- Phone available at neighbor’s
- Phone available nearby
- Phone available, but not nearby
- No access
Administrative data versus surveys

- Regulators can collect data through administrative records (regular data supply from operators) or through surveys.
- In certain areas administrative data needs to be complemented by surveys:
  - Internet usage (as opposed to subscription!)
  - ICT availability in households (PCs, Internet, etc)
  - Consumer satisfaction, household telecom expenditure
- Collaboration with National Statistical Office is crucial in carrying out surveys!
International benchmarking: ITU’s Digital Access Index (DAI)

The Index classifies 178 countries according to their ability to access Information and Communication Technologies.

Maximum score: 1
Minimum score: 0

DAI is based on 8 indicators that are grouped into 5 categories: infrastructure, affordability, usage, quality, and knowledge

Source: ITU
ITU-ECOWAS data collection project

- To collect telecom market data of ECOWAS countries from telecom operators
- To present and analyze the data in the form adapted to different user groups
  - A tool used for business decisions and growth analysis for operators
  - A tool to monitor market developments for regulators
  - An information tool to telecom users and investors
An effective and dynamic tool for analysis of telecommunication developments that benefits operators, regulators and the general public

<table>
<thead>
<tr>
<th>Data is analyzed and presented in various formats</th>
<th>Operators receive benchmarks online</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data is received at ITU server</td>
<td></td>
</tr>
<tr>
<td>Operators provide data in user-friendly format</td>
<td>Data is analyzed locally by operators to monitor trends</td>
</tr>
</tbody>
</table>
Who gets what

- Operators have access to national and regional telecommunication trends
  - Track market position and potential
  - International benchmarking exercises
- Regulators receive (national & regional) overview
  - Identify trends and benchmark results
  - Make informed policy decisions
  - Make regional/international comparisons
- Public is informed on trends and services
- Investors identify new market opportunities
- ITU fulfills its commitment with regard to bridging the digital divide
Project implementation

- Preparation of draft system structure and data formats (ITU)
- Operators and regulators to discuss and decide form and processes at a workshop (date and venue to be confirmed)
- Adjustment of project based on feedback
- Software development (ITU) and pilot testing is launched
- System becomes operational

For information on ITU-ECOWAS data collection project contact: Mr. Seydoux BASSAVE, at Bassave@itu.int
ITU statistical work in Africa

- In June the ITU will organize an ICT indicators workshop for the Southern African Development Community (SADC) in Botswana* for regulators and national statistical offices
- In May - and on time for Africa Telecom - ITU will publish the African Telecommunication Indicators
- For further information, visit: www.itu.int/ict

Thank you
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* Both, venue and date, are provisional