Mobile Cellular: Cutting the cord

Tim Kelly & Michael Minges (ITU)
CTO Annual Council, Gaborone, 21 September 1999

The views expressed in this presentation are those of the authors, and do not necessarily reflect the opinions of the ITU or its membership. Tim Kelly can be contacted by e-mail at: Tim.Kelly@itu.int.

- The Mobile Revolution
- Supplying Mobile
- Regulating Mobile
- Mobile Access
- Pricing Mobile
- A Mobile Future

- Examples from SADC
A Mobile Revolution

Worldwide mobile cellular subscribers (millions)

- More than 300 million users
- 250’000 new users added each day
- Users double every 20 months
- Competitive markets

Mobile as % of fixed-line telephone subscribers

Mobile growth in SADC region (excluding South Africa)

- Over 100% growth
- Almost as many new mobile and fixed-line subscribers added in 1998
- Penetration rate doubling each year

Source: ITU World Telecommunication Indicators Database.
Supplying Mobile

Worldwide cellular subscribers by technology, 1998

- 1st generation, analogue
- 2nd generation, digital
- 3rd generation, IMT-2000
  - global roaming
  - multimedia (Internet, data, video, voice)
  - multi-mode (in-building, terrestrial, satellite)

Analogue systems include: AMPS (Advanced Mobile Phone System), NMT (Nordic Mobile Telephony), TACS (Total Access Communications System). Digital systems include: CDMA (Code Division Multiple Access), GSM (Global System for Mobile), PDC (Personal Digital Cellular), PHS (Personal Handyphone System), TDMA (Time Division Multiple Access).

Source: ITU, adapted from Ericsson, Dataquest, GSM MoU, CDMA Development Group.

Status of Mobile in SADC region

- Mobile established fairly recently in all countries of SADC region
- GSM is dominant standard
- Roaming agreements evolving

Source: ITU.
Regulating Mobile

Number of countries with mobile cellular competition

- A relative lack of regulation
- <1% of world market under monopoly
- Key issues: Coverage and interconnect

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>28</td>
<td>38</td>
<td>49</td>
<td>61</td>
<td>72</td>
<td>93</td>
</tr>
</tbody>
</table>

Source: ITU World Telecommunication Indicators Database.

Market structures, SADC

- Private sector participation in all but one SADC country
- Competition in 6 SADC countries

- 100% state-owned
- Fixed PTO+private investors
- Competitive with fixed PTO participation
- Competitive no fixed PTO participation

Number of mobile operators
**Mobile Access**

*Pre-paid mobile cellular subscribers, 1998, as % of total*

- Mobile can enhance access
- Pre-paid has given access a major boost, esp. in Europe
- Mobile is becoming preferred form of access in many developing countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Total pre-paid (m)</th>
<th>% Pre-paid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td>15.2</td>
<td>74%</td>
</tr>
<tr>
<td>Mexico</td>
<td>2.0</td>
<td>60%</td>
</tr>
<tr>
<td>Portugal</td>
<td>1.6</td>
<td>53%</td>
</tr>
<tr>
<td>S. Africa</td>
<td>1.3</td>
<td>50%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>0.4</td>
<td>40%</td>
</tr>
<tr>
<td>Austria</td>
<td>0.8</td>
<td>37%</td>
</tr>
<tr>
<td>Greece</td>
<td>0.7</td>
<td>35%</td>
</tr>
<tr>
<td>Philippines</td>
<td>0.6</td>
<td>35%</td>
</tr>
</tbody>
</table>

Source: ITU World Telecommunication Indicators Database.

---

**Mobile as a tool in achieving Universal Service**

- SADC operators have few Universal Service Obligations
- Except in South Africa where they had to install 30’000 cellular payphones in 5 years
- Cellular is quicker to implement and less prone to copper theft

©ITU / A. de Ferron
Pricing Mobile

Relationship between mobile price and density in Western Europe

- High prices stunt network development
- Specialist mobile companies doing better than integrated fixed/mobile
- Prices falling by around 4% p.a.

Note: Price basket based on monthly subscription plus 50 mins peak and 50 mins off-peak use.
Source: ITU World Telecommunication Indicators Database.

Mobile prices in SADC region

- Prices still relatively high compared to other regions
- Significant variations within the region
- Pre-paid schemes are widening access base (e.g., >50% of Vodacom’s subscribers)

Source: ITU adapted from published operator tariffs.
A mobile future

Actual and projected subscriber growth, fixed-lines and mobile, millions, 1990-2010

- Mobile has overtaken fixed-lines in Cambodia, Finland and Italy
- Mobile subscribers to overtake fixed-line worldwide before 2010?
- Mobile revenue to overtake fixed-line after 2004?
- Fastest growth in developing countries


Cross-over between fixed and mobile subscribers, S. Africa

Subscribers per 100 inhabitants

January 2000, at density 11.85 ??
For more information ...  
- Publication launch:  
  10 October 1999  
  (TELECOM ‘99)  
- Available on paper and online (PDF format)  
- World Telecom Indicators Database available online  
- Website: [http://www.itu.int/ti](http://www.itu.int/ti)

Other reports launched at TELECOM ‘99
- Direction of Traffic 1999: Trading Telecom Minutes  
- Trends in Telecom Reform 1999: Convergence  
- Internet for Development (updated with latest data)