

2G Success

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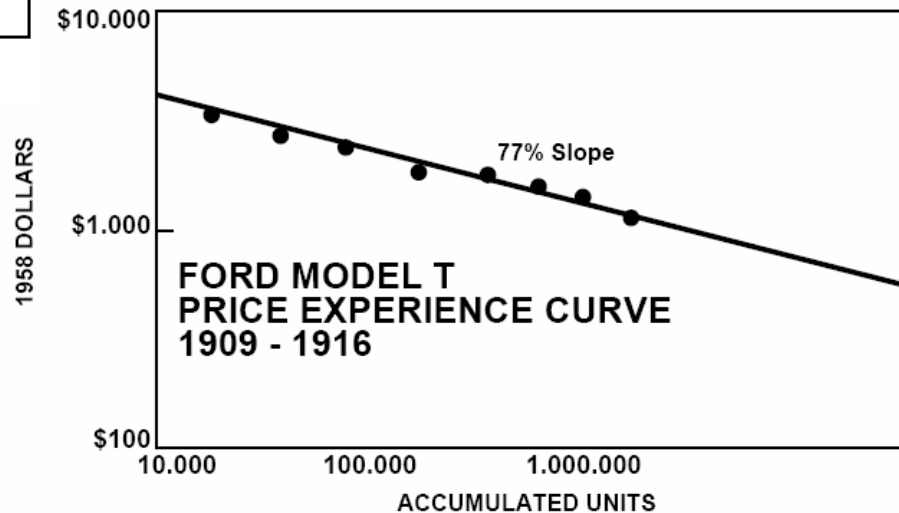
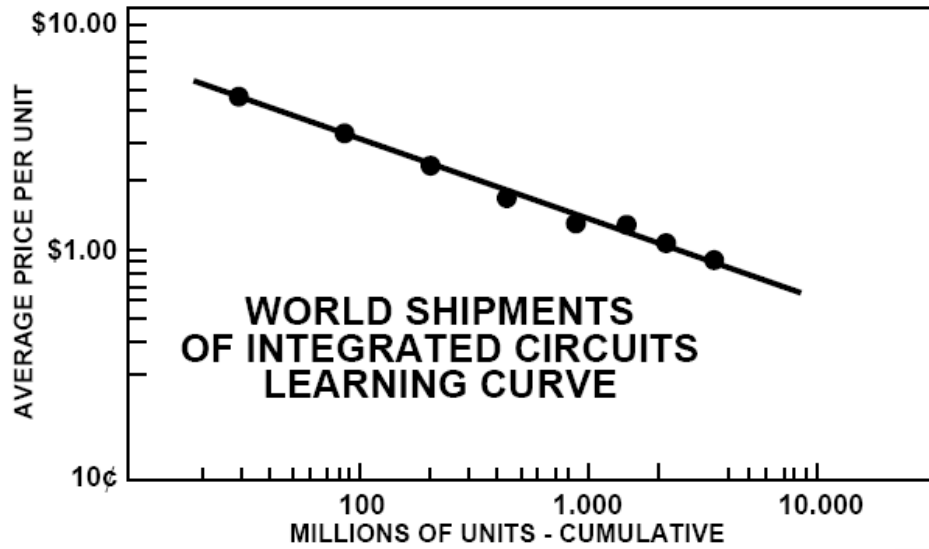
Second generation

- Competition
- Declining costs of equipment and operations
- High churn rates
- Expensive customer acquisition
- Expensive Mobile Termination Rates (MTRs)
- Cross-subsidies for handsets
- International mobile roaming charges

BCG Experience curve

- Boston Consulting Group “Law of experience”
- The unit cost of value added to a standard product declines by a constant percentage (typically between 20 and 30 percent) each time cumulative output doubles
- Savings are not automatic, but require:
 - management
 - additional investment

“The experience curve cost effects are an observable fact. They can be confirmed by observation. The principal problems encountered in application are those of defining cost elements and in defining the measuring unit of experience.” Bruce Henderson, BCG

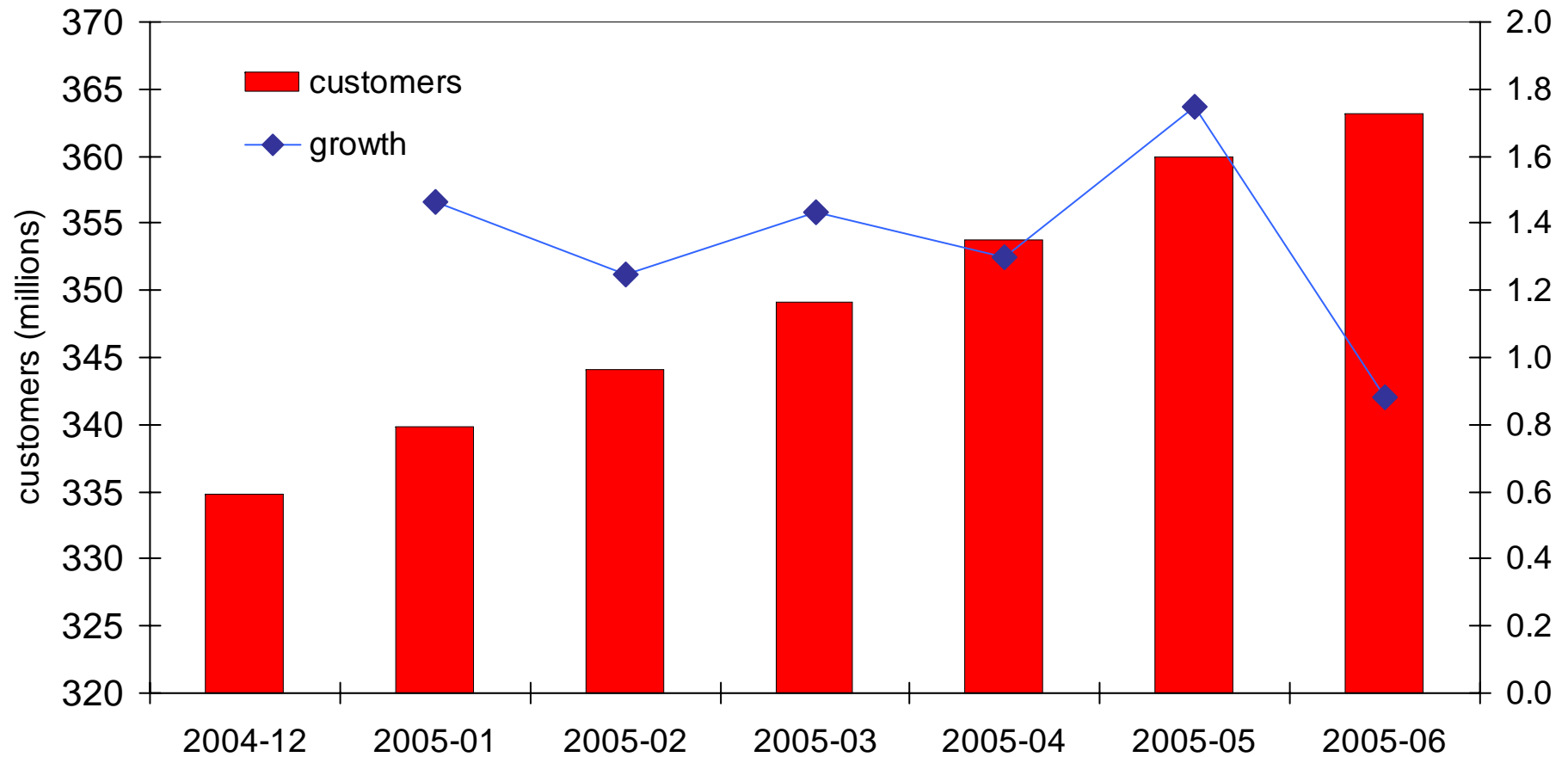


$$C_n = C_1 \times n^{-a}$$

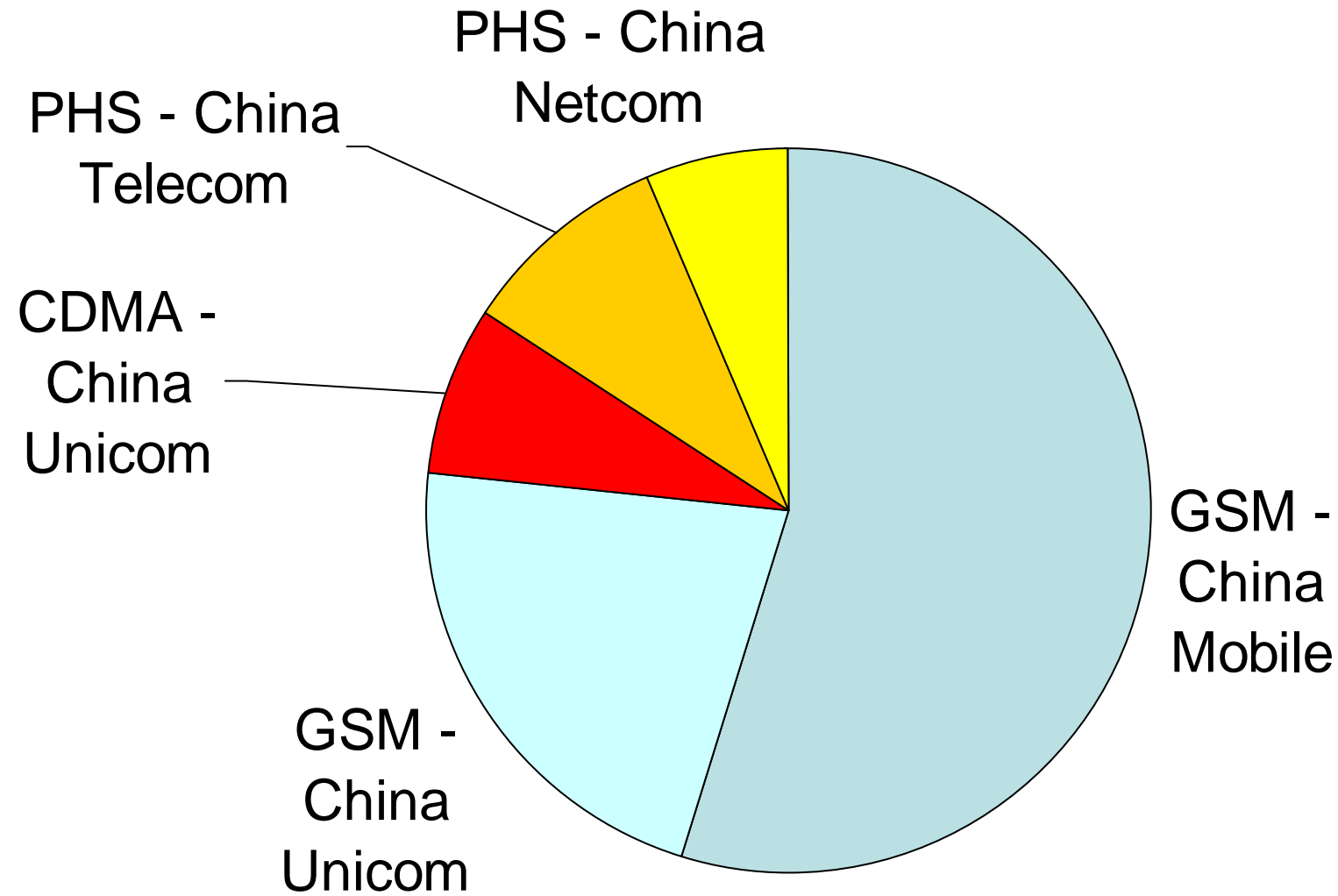
C is the cost of unit of production
 n is the cumulative volume of production
 a is the elasticity of cost with regard to output

Source: Boston Consulting Group.

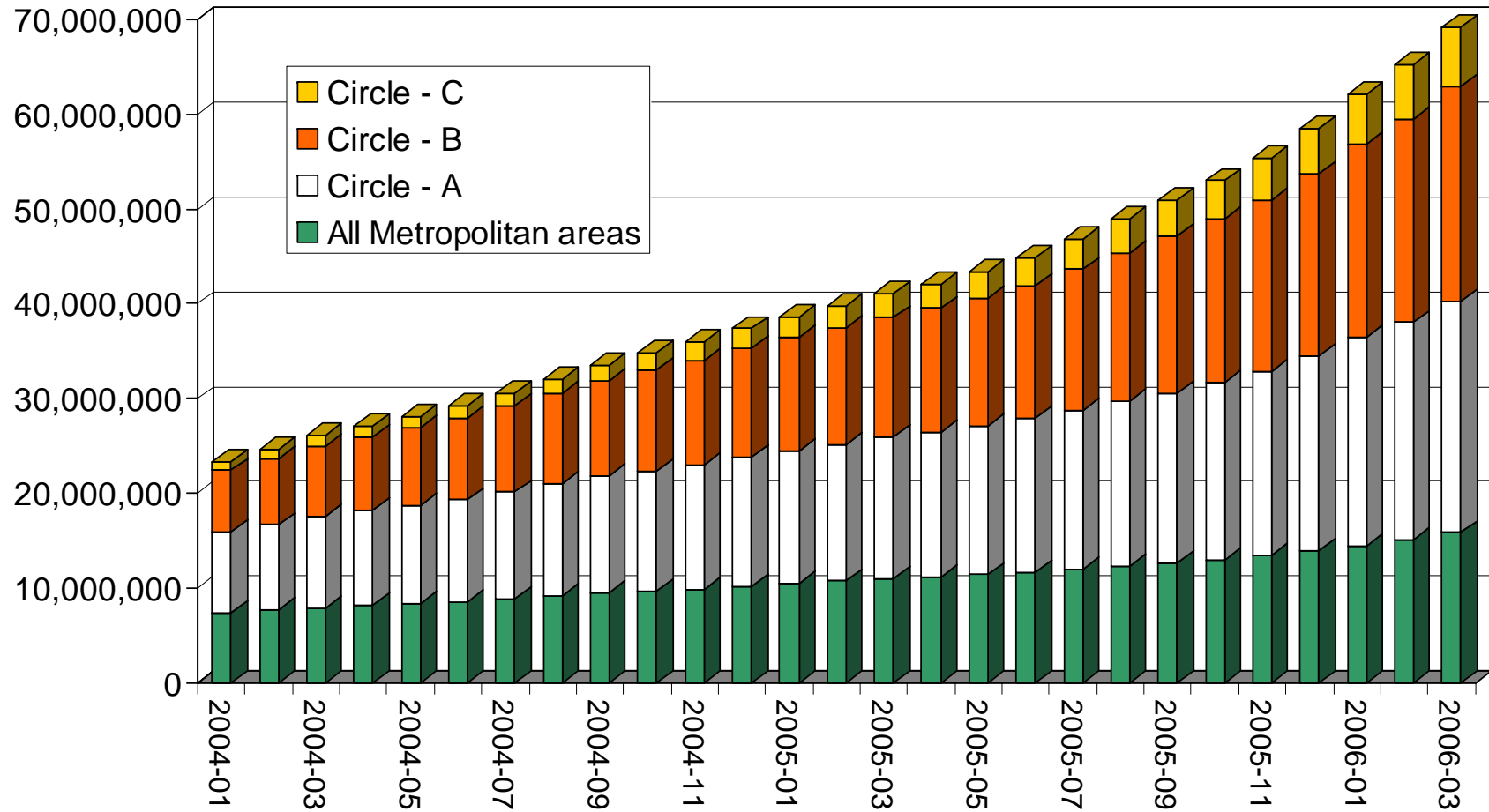
China - mobile growth



China – 2004 Q4



India



<http://www.coai.com/>

Africa

- Initial resistance to competition
- Eventually, competition drove growth
- Most countries have at least two operators
- Little or no investment in the fixed network
- GSM has grown to dominate markets
- ARPU has declined as the customer base has widened
- Highly profitable
- Operators are looking for new revenues:
 - m-banking
 - m-commerce

GSM Association claims

- The operators make a “profound” economic contribution:
 - employment
 - increased business efficiency
 - tax revenues
 - GDP
- Yet, there are many examples where regulation is not best practice:
 - a lack of appropriate sector legislation and clearly defined regime
 - a lack of clear regulatory policy in particular for licensing and long term allocation of spectrum
 - a lack of independent dispute resolution
 - regulators that are not independent from political intervention
 - a significant danger of “copying and pasting” policies from elsewhere, without appropriate “impact” assessments

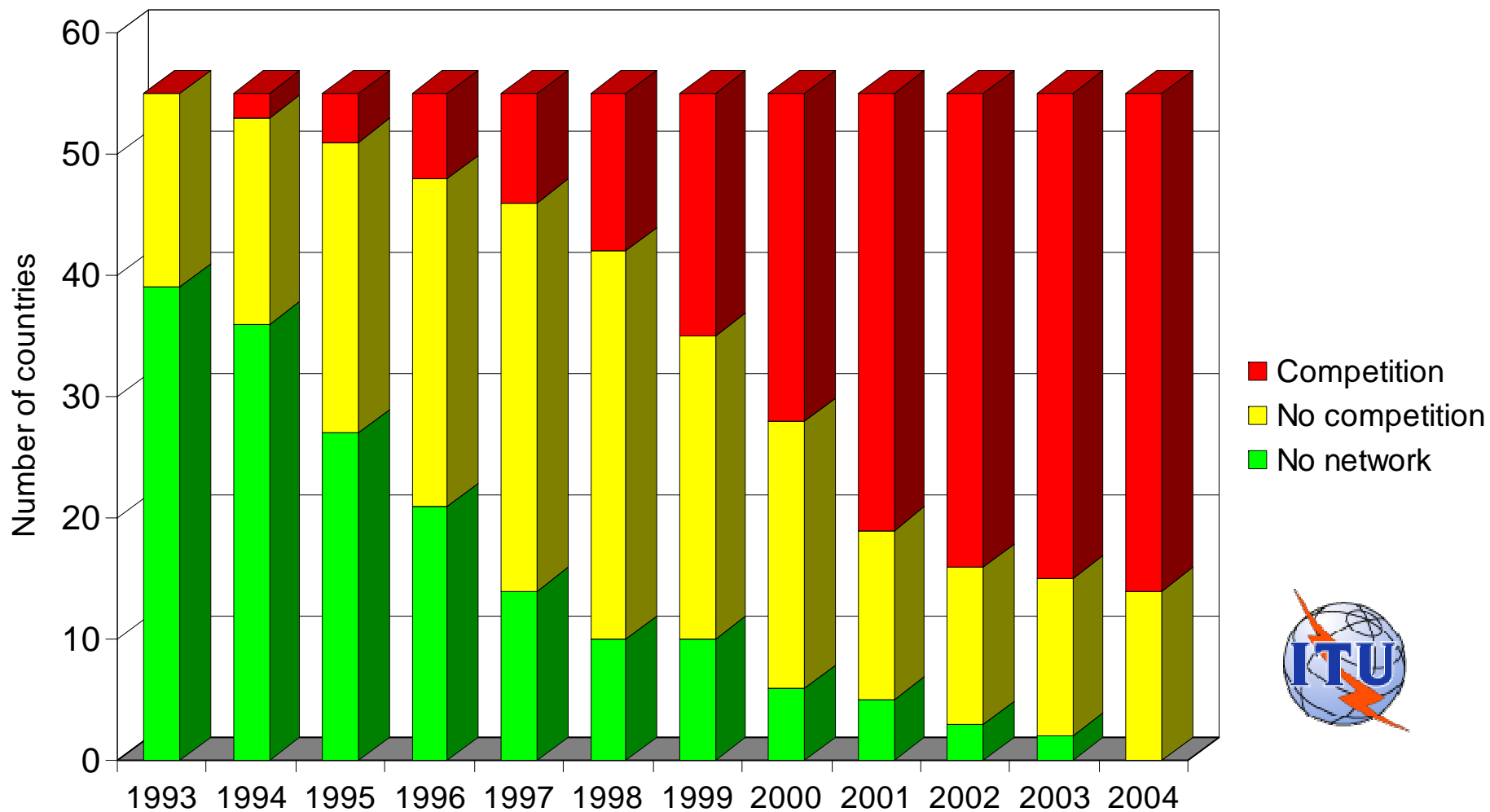
GSMA (cont'd)

- Operators are exposed to “significant levels” of regulatory risk:
 - raising the cost of capital or return demanded by investors
 - leading to sub-optimal level investment
- Best practice regulation could have increased
 - mobile investment to date by approximately 25%
 - equating to US\$ 4.6 billion
 - leading to an increase in mobile subscribers of:
 - up to 20% or
 - 17 million extra subscribers
- Best-practice regulation, would reduce operators’ capital costs leading to a lower Total Cost of Ownership (TCO) for consumers by around 10%
- Given elasticity of demand, this would result in:
 - up to 8.25 million additional customers

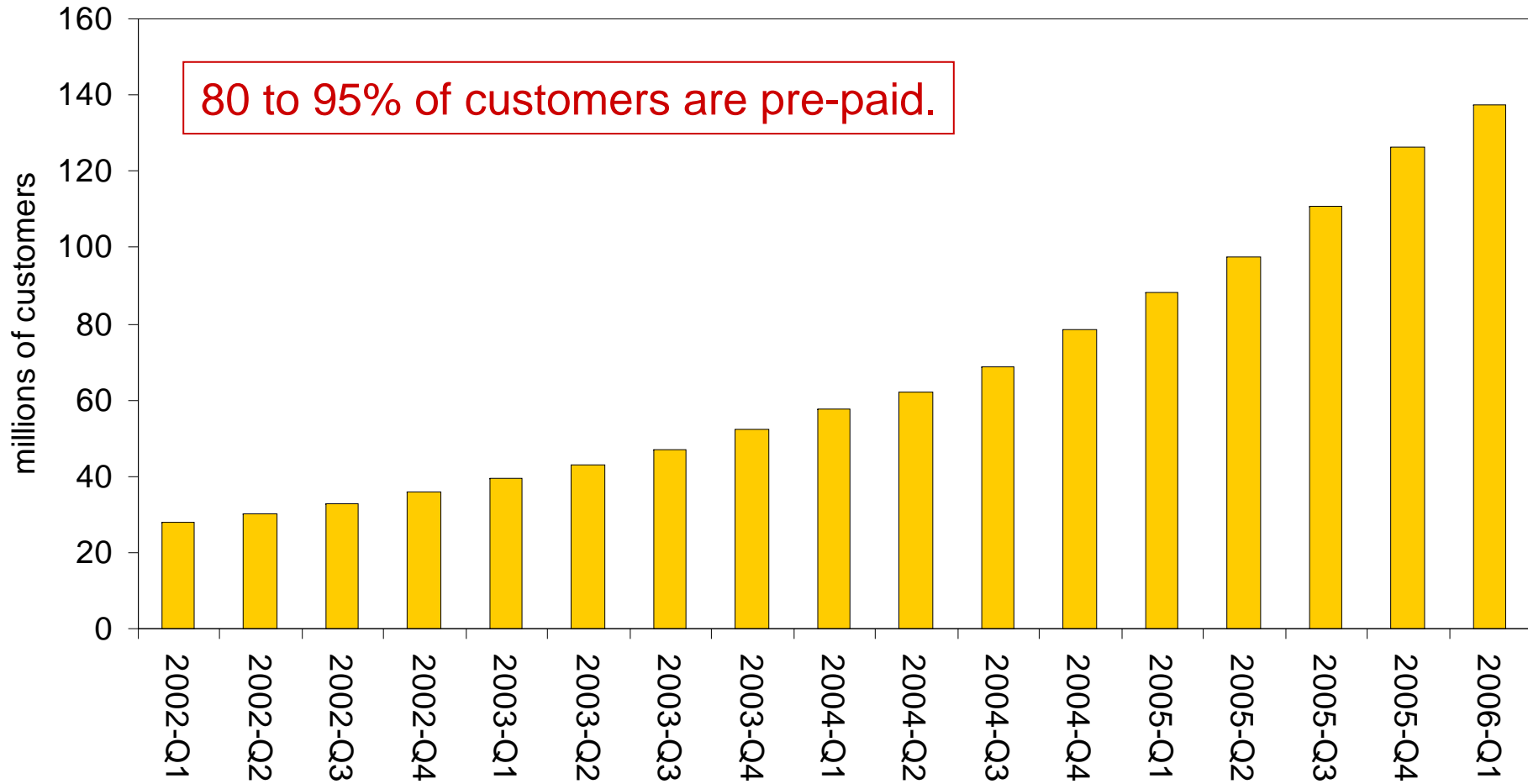
User complaints

- High call charges, especially on pre-paid
- High fixed-to-mobile rates
- High rates for SMS
- Lock-in through handset “subsidies”
- Exorbitant international roaming charges
- High prices for data services
- Poor customer care
- Lack of competition, leading to:
 - higher charges
 - price shadowing by operators

Competition in mobile

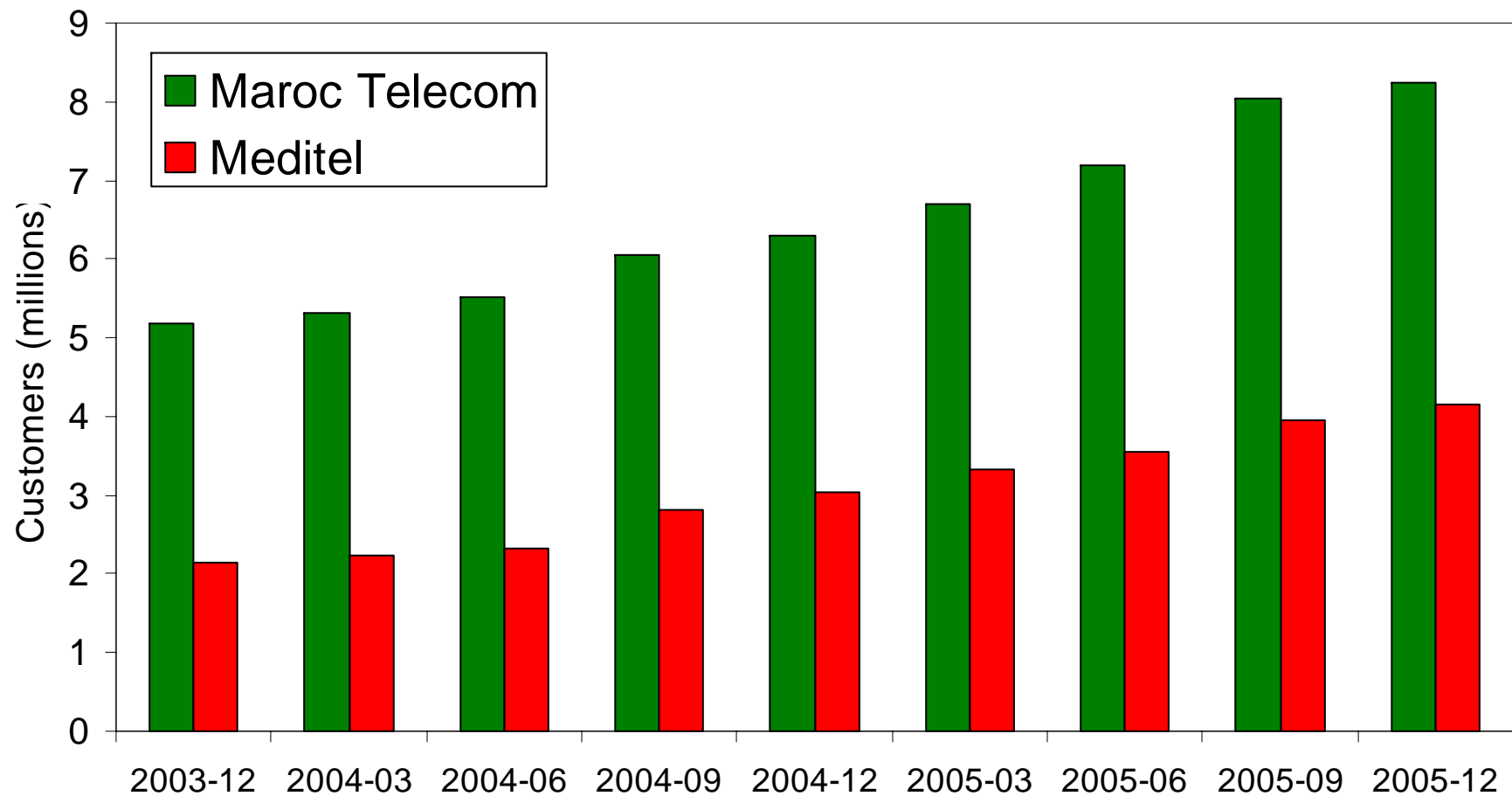


Growth of GSM in Africa



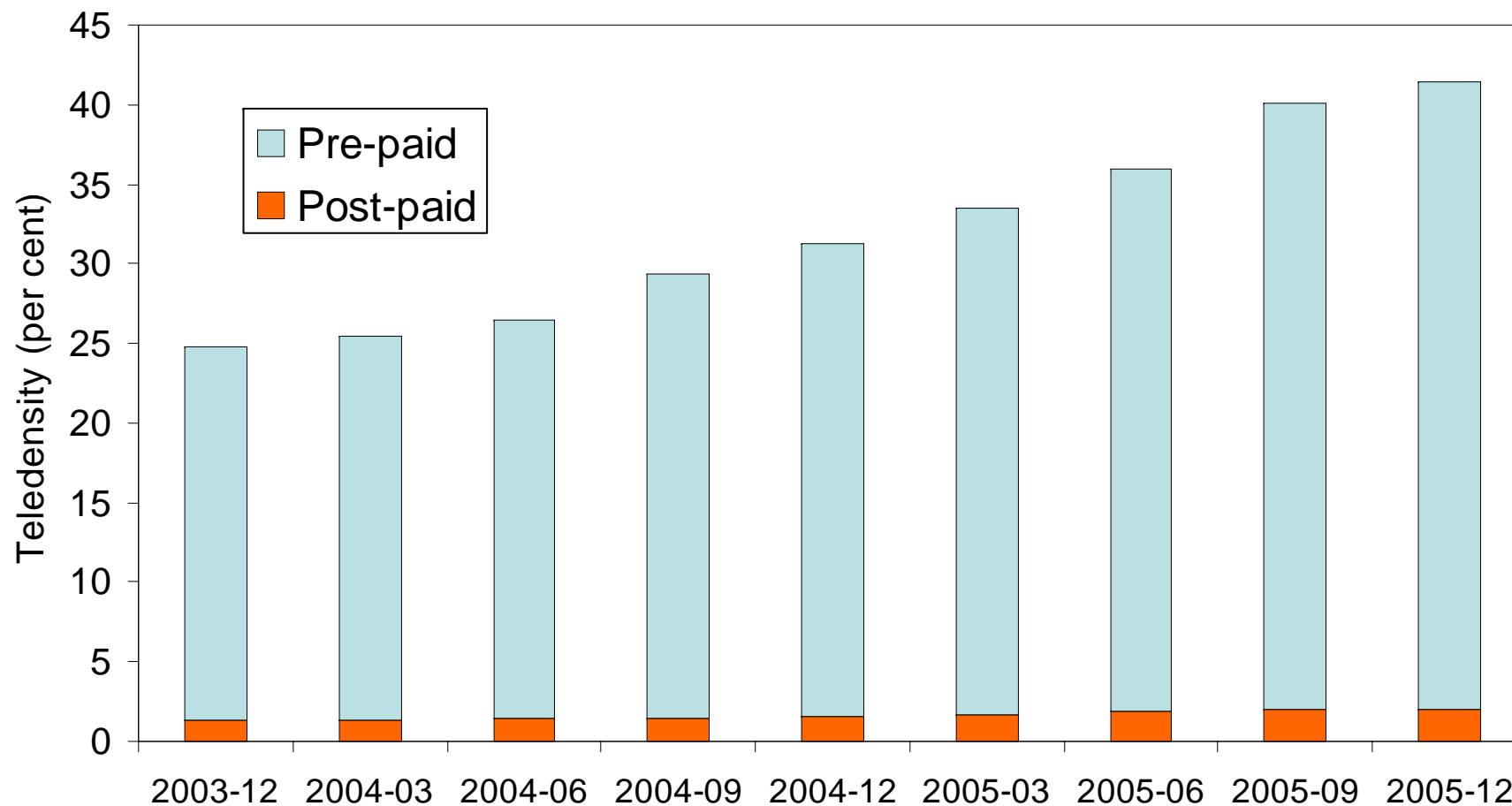
http://www.gsmworld.com/news/statistics/pdf/gsma_stats_q1_06.pdf

Morocco – competition



Source: ANRT

Morocco – growth of pre-paid



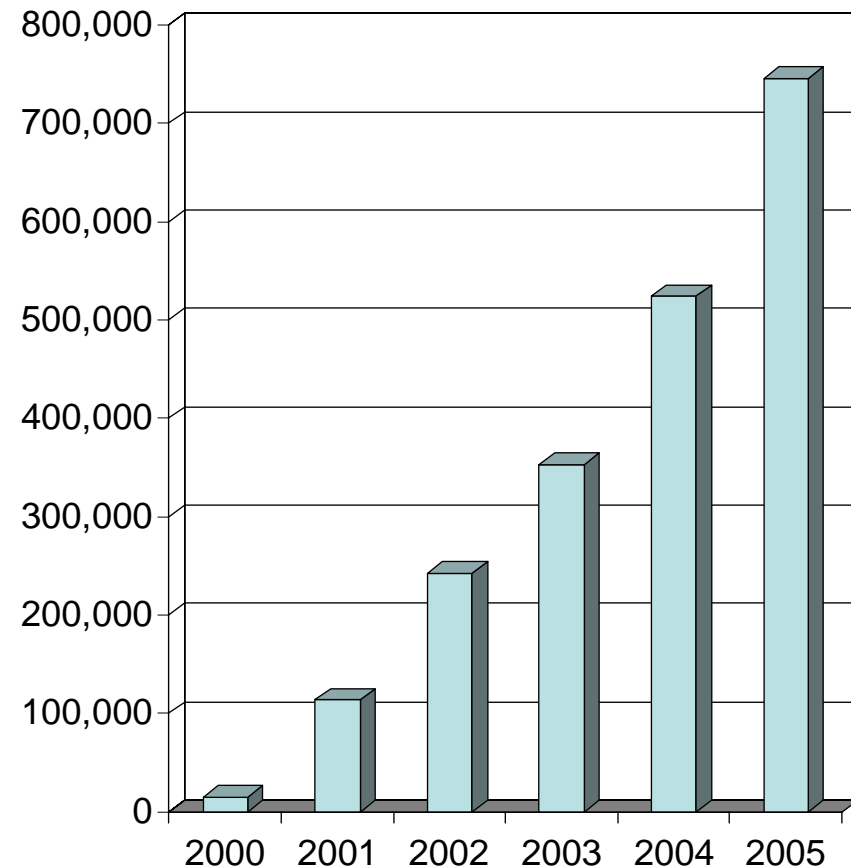
Source: ANRT

Mauritania

- An average of 3 people per km²:
 - 1,000,000 km²
 - 3,000,000 people
- 25% mobile teledensity
- Mauritel (fixed incumbent)
 - 46% Government
 - 42.3% Maroc Telecom
 - 8.7% private Mauritians
 - 3% employees
- Mauritel Mobiles is 100% owned by Mauritel
- Mattel is the second MNO:
 - 51% Tunisie Télécom
 - 49% Private Mauritians
- Licence announced for a third mobile operator

<http://www.mauritelmobiles.mr/>
<http://www.mattel.mr/>

GSM customers

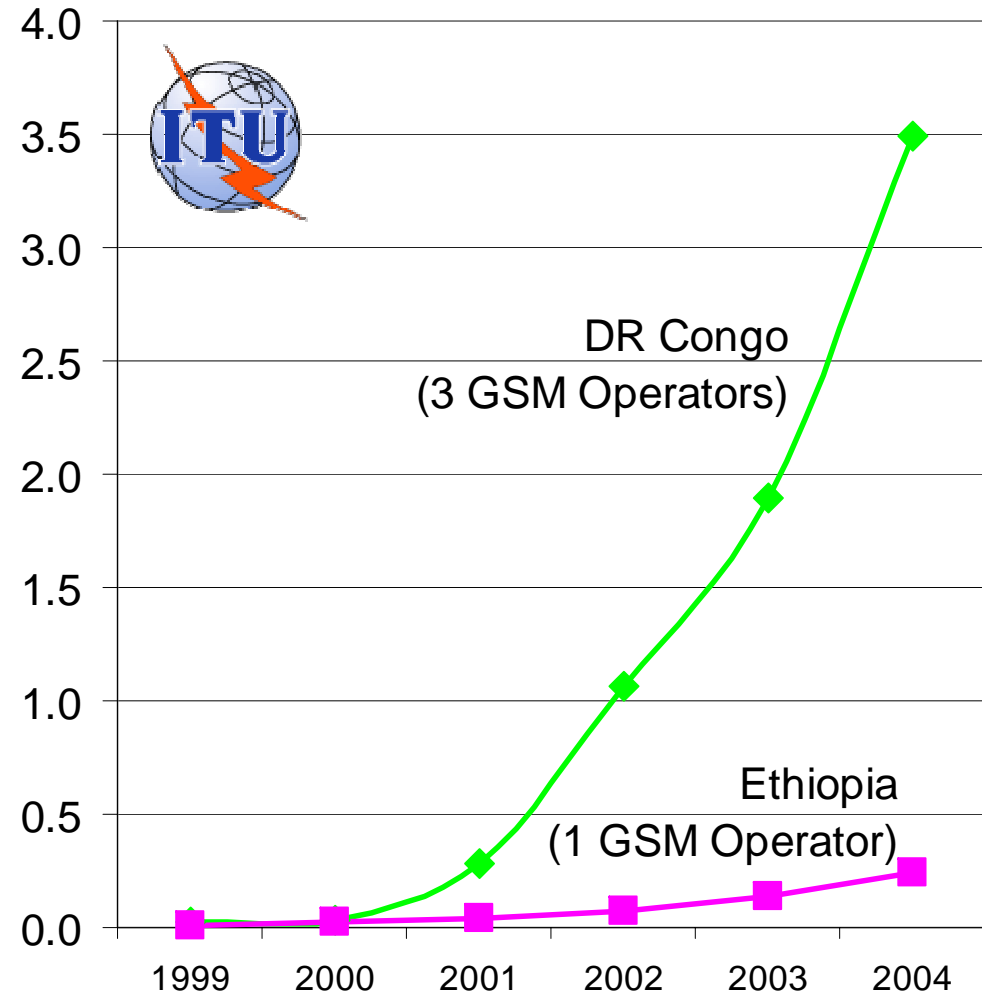


<http://www.are.mr/>

Democratic Republic of Congo

- Competition is well established
- Operators:
 - Celtel Congo
 - Congo Chine Telecom
 - Oasis (S.A.I.T. Telecom)
 - Supercell
 - Vodacom Congo
- 2006 Q1 estimated to be 3.5 million customers or about 6.3%
- Licensing 3G in 2006

Mobile subscribers per 100 inhabitants, 1999-2004



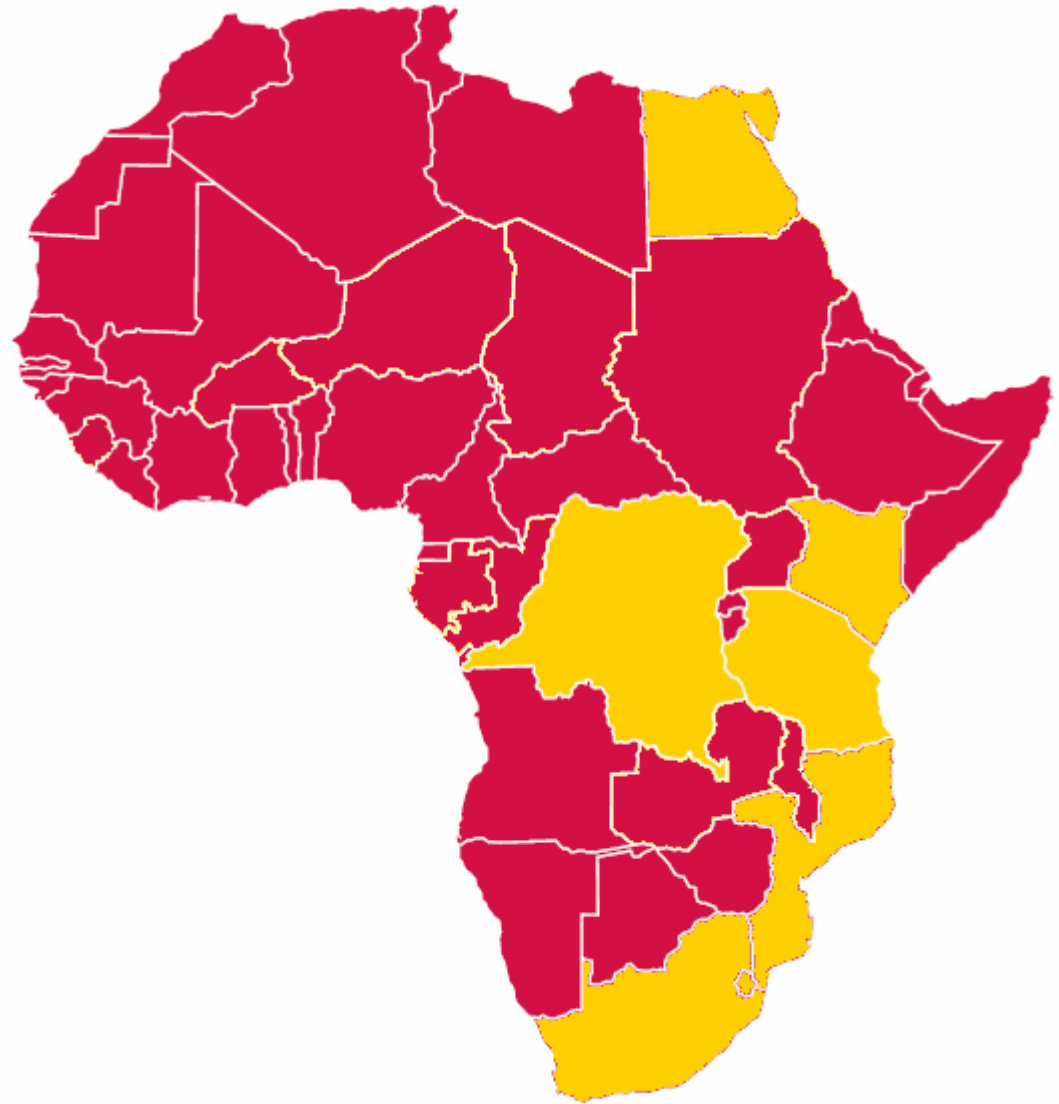
Vodafone Group plc

- April 2006 restructuring:
 - developed markets
 - emerging markets
 - new business and innovation
- Investments in Africa:
 - Vodafone Egypt (50.1%)
 - Kenya Safaricom (35%)
 - Vodacom (50%)

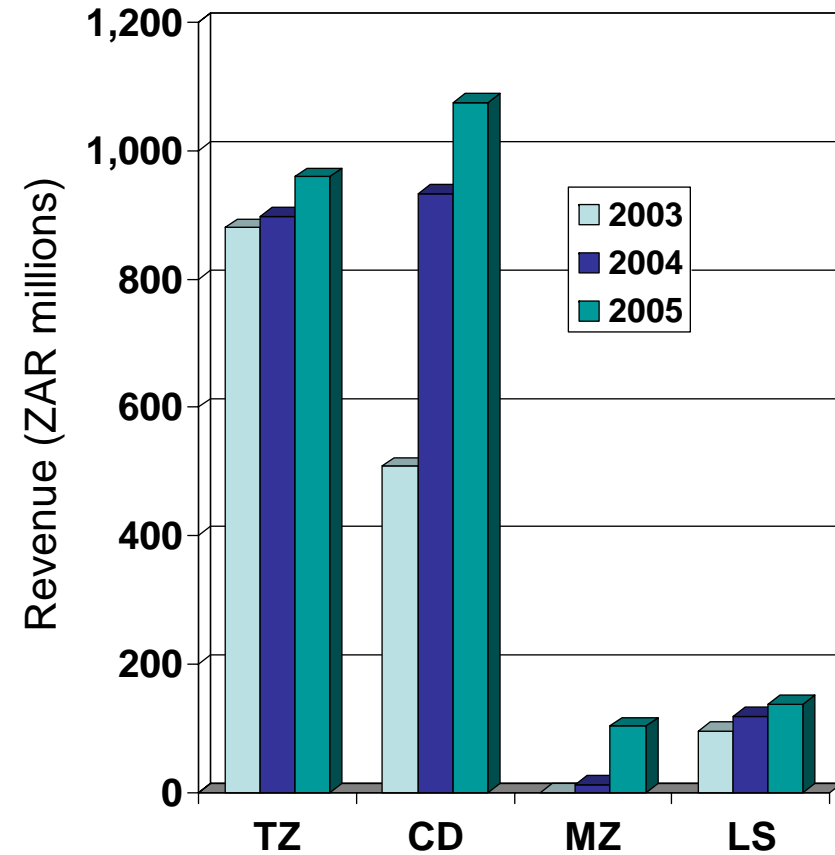
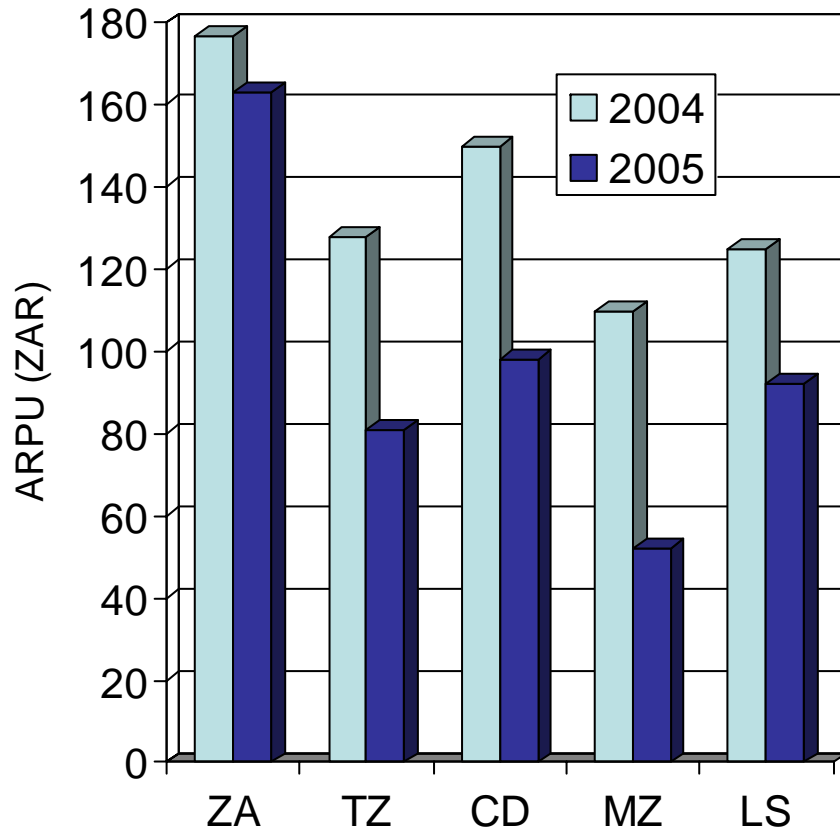
Vodacom

Total customers:

- up 38.0% in one year to 15.5 million
- South Africa up 32.0% to 12.8 M
- DRC up 54.0% to 1.0 million
- Tanzania up 75.6% to 1.2 million



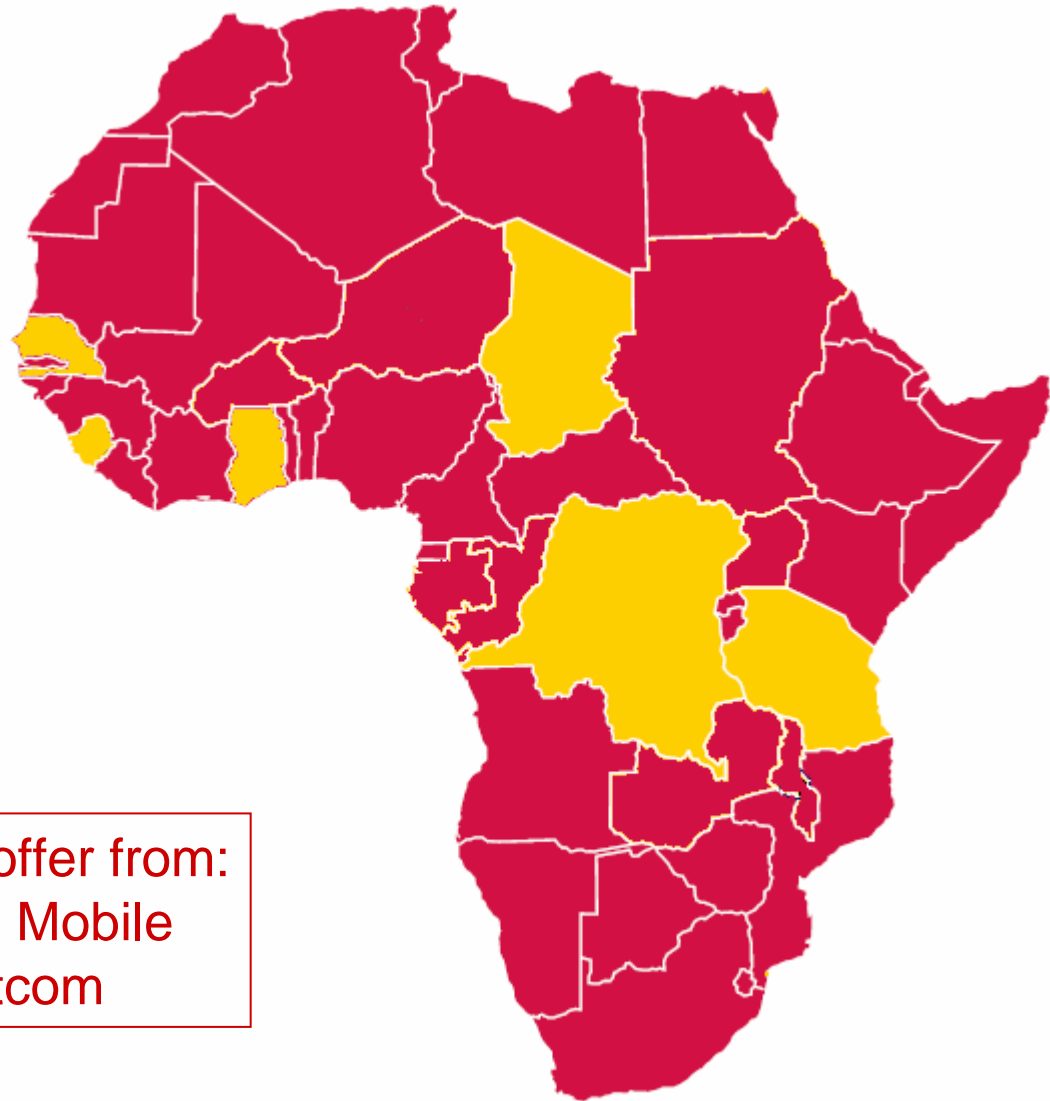
Vodacom



<http://www.vodacom.co.za/>

Millicom

- African countries plus:
- Mauritius
- El Salvador
- Guatemala
- Honduras
- Bolivia
- Paraguay
- Pakistan
- Sri Lanka
- Cambodia
- Laos

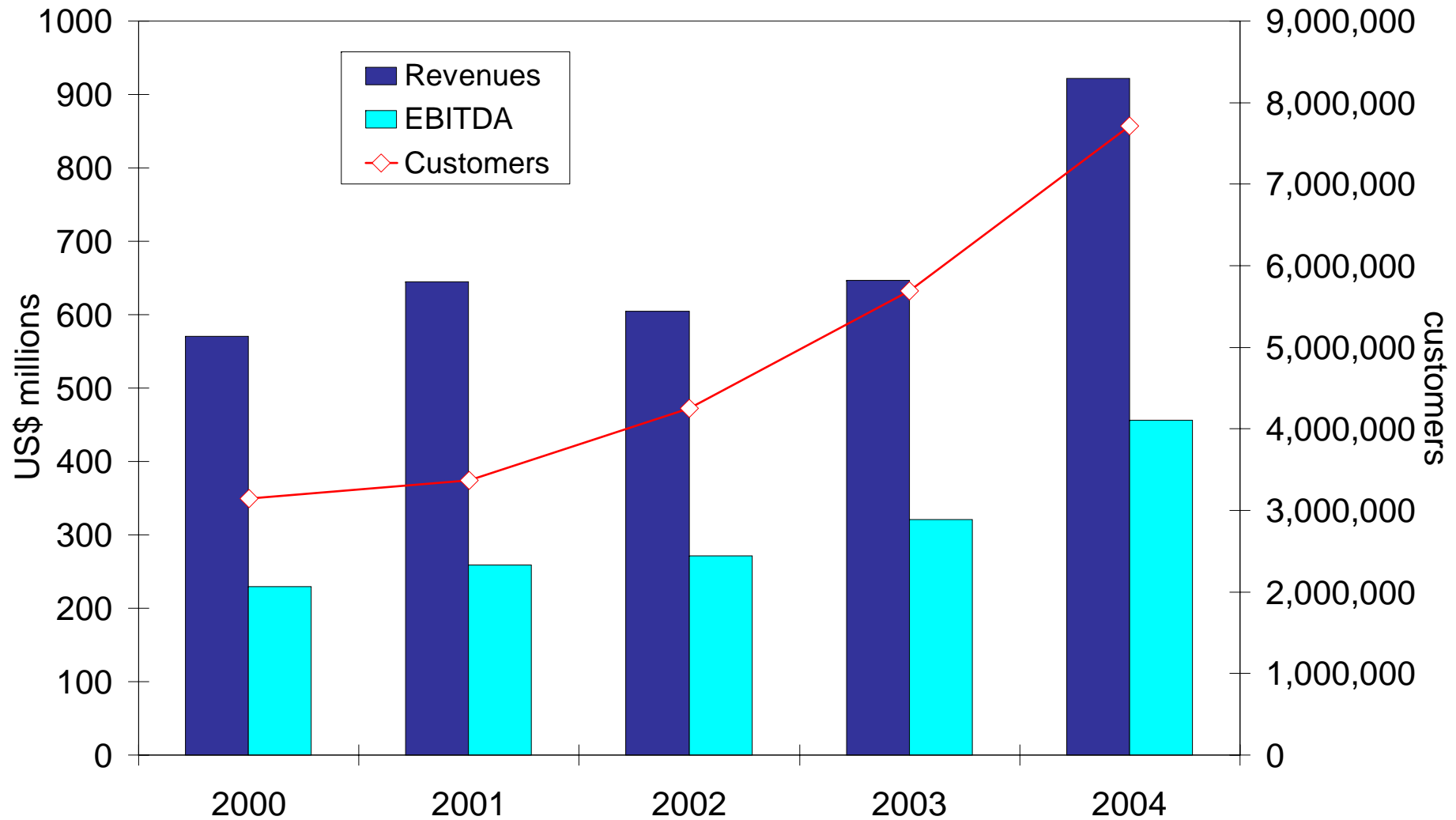


Under offer from:

- China Mobile
- Investcom

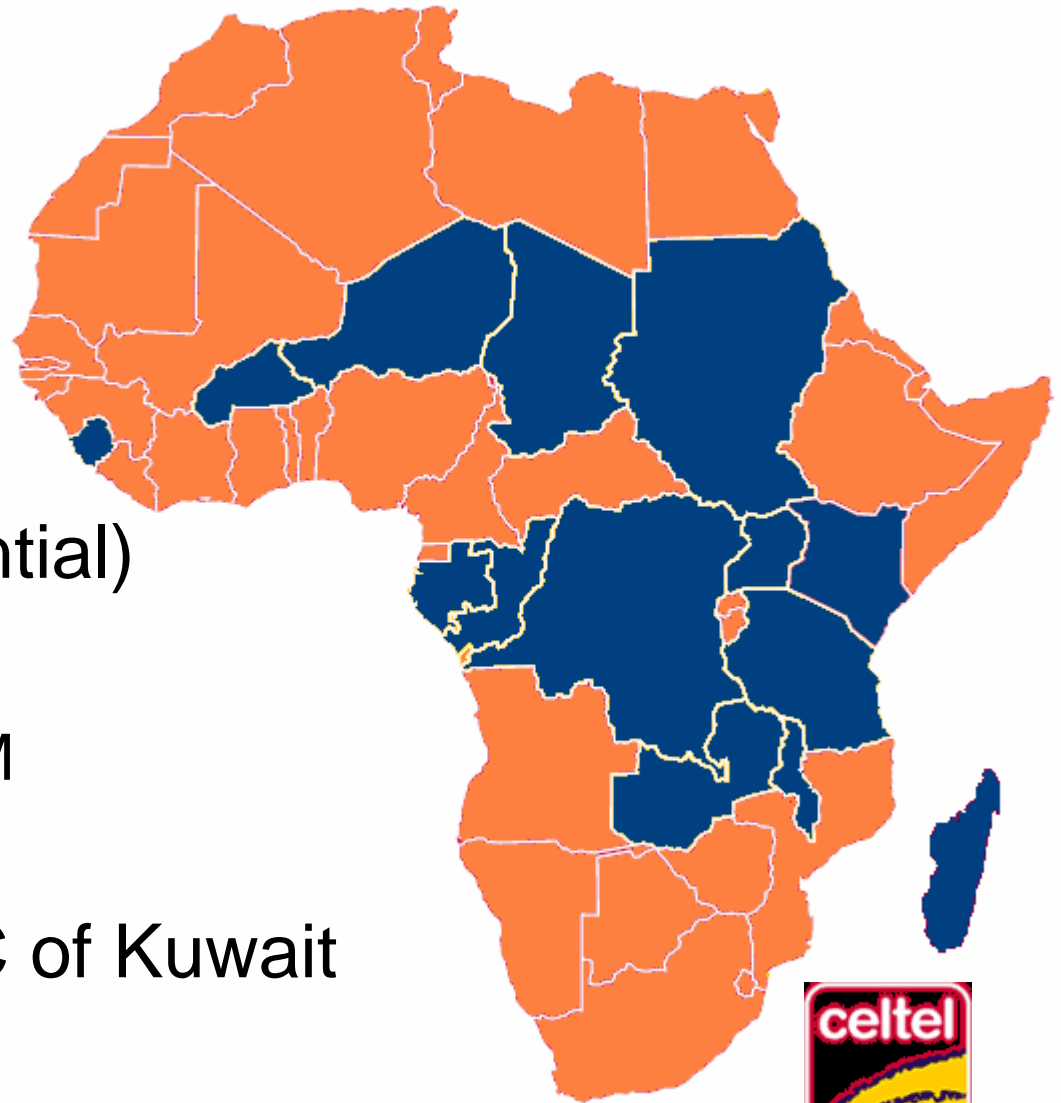
<http://www.millicom.com/>

Millicom



Celtel

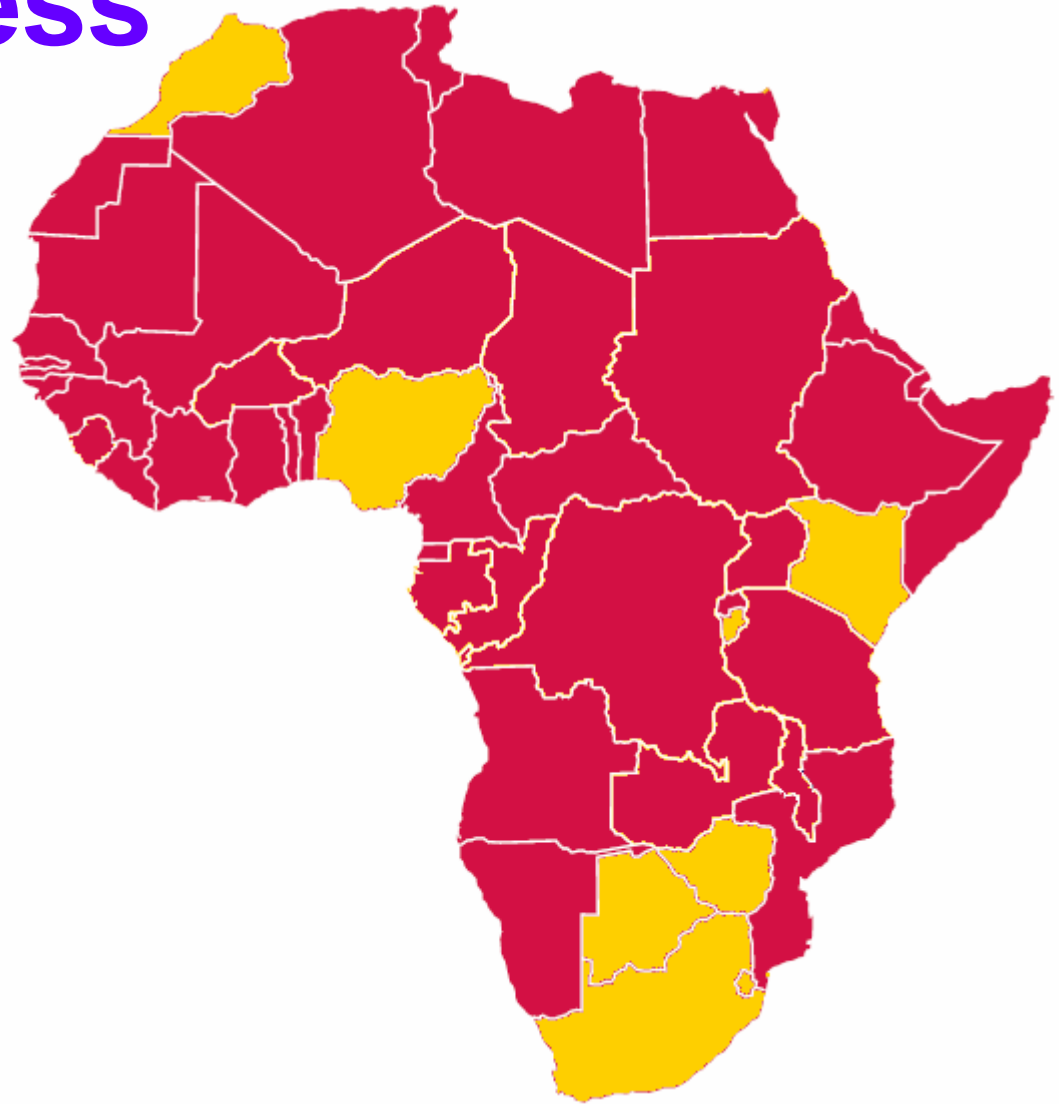
- 14 countries
- 8.5 M users
- 270 M citizens
(lots of growth potential)
- 2003
 - Turnover US\$ 446 M
 - EBIDTA US\$ 151M
- Now owned by MTC of Kuwait



<http://www.celtel.com/>

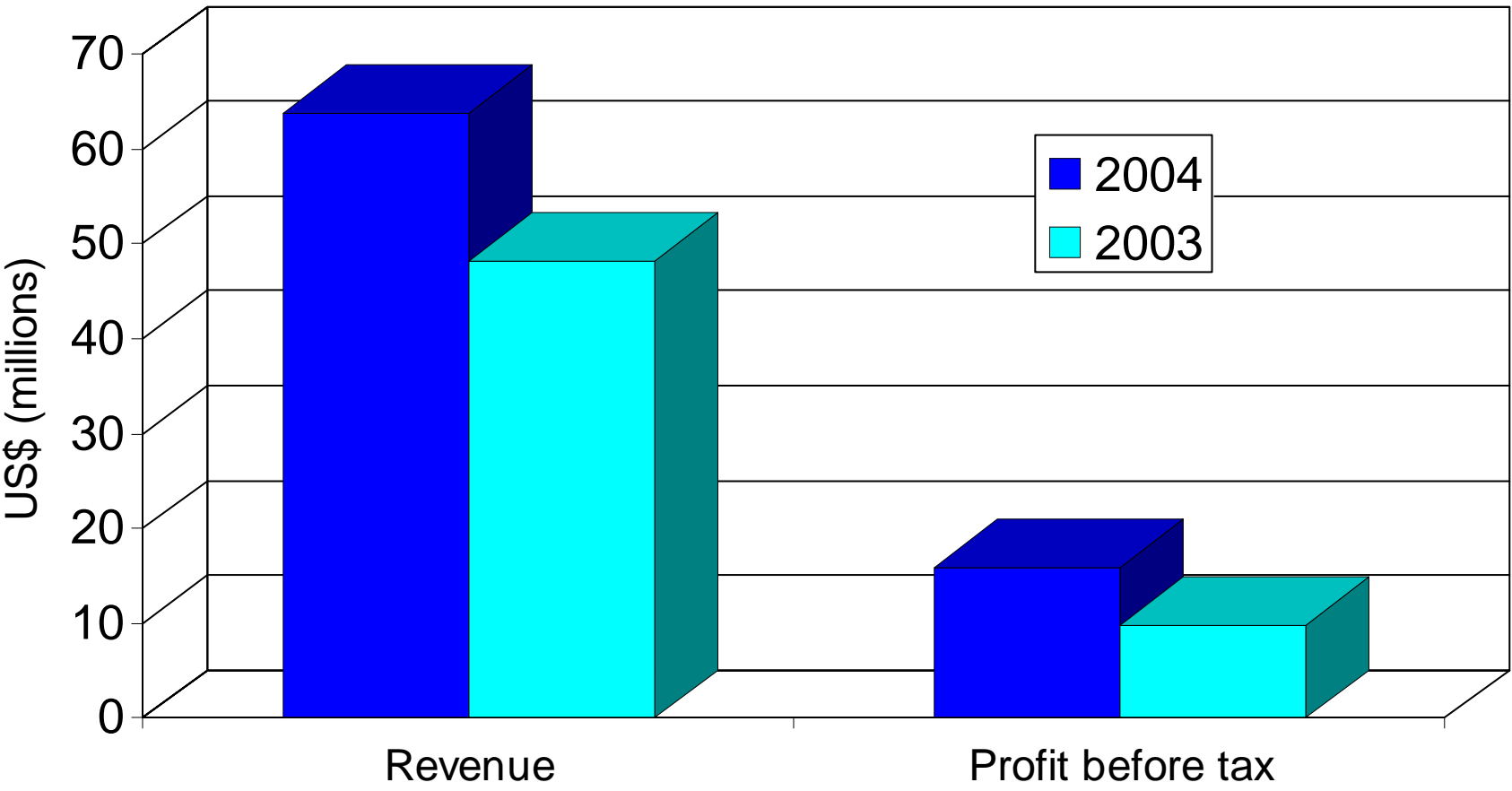
Econet wireless

- “To provide international standard telecommunication services to all the peoples of the world, beginning in Africa”
- Also in New Zealand
- 5 million customers
- Carrier services business based in the UK



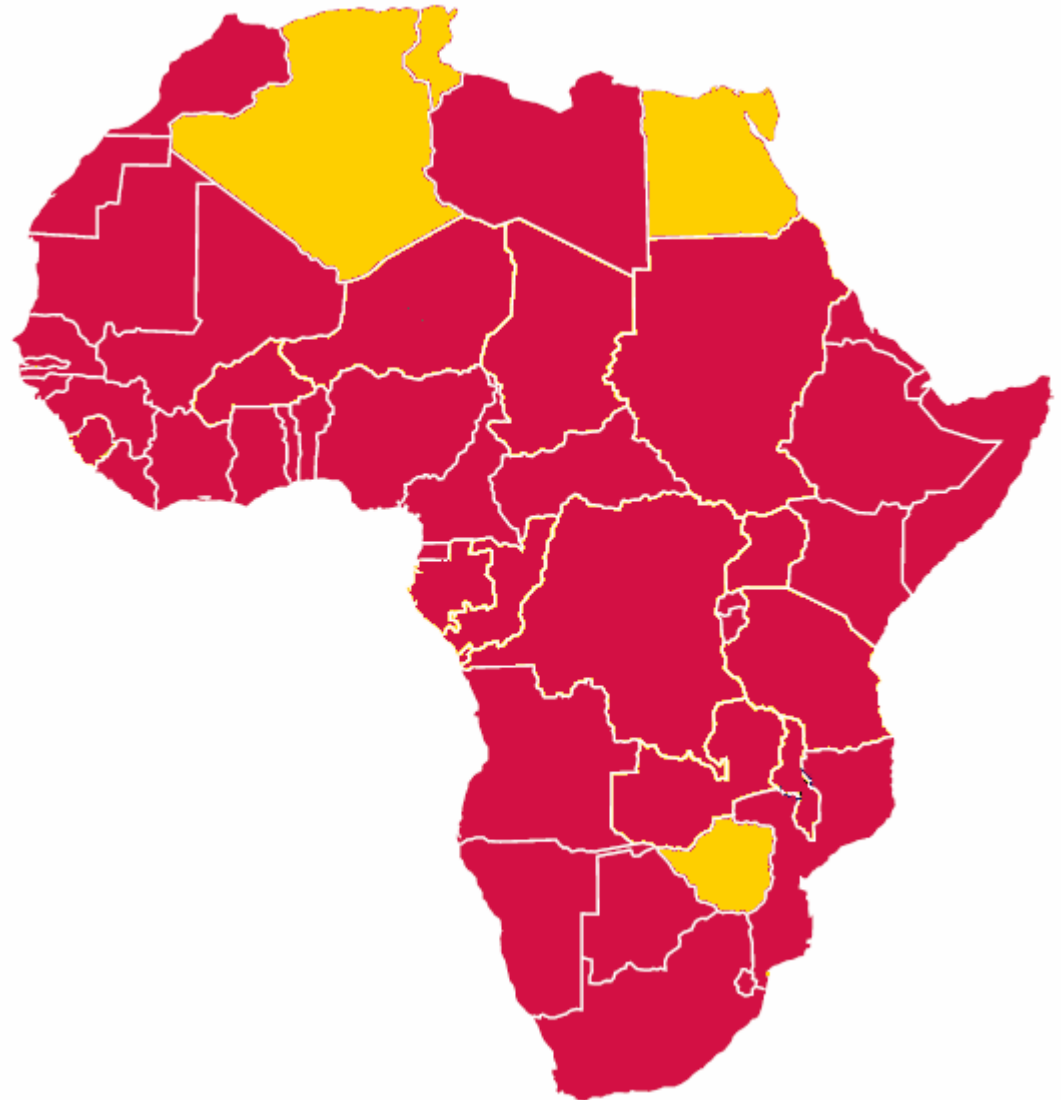
<http://www.econetwireless.com/>

Econet - financials



Orascom Group

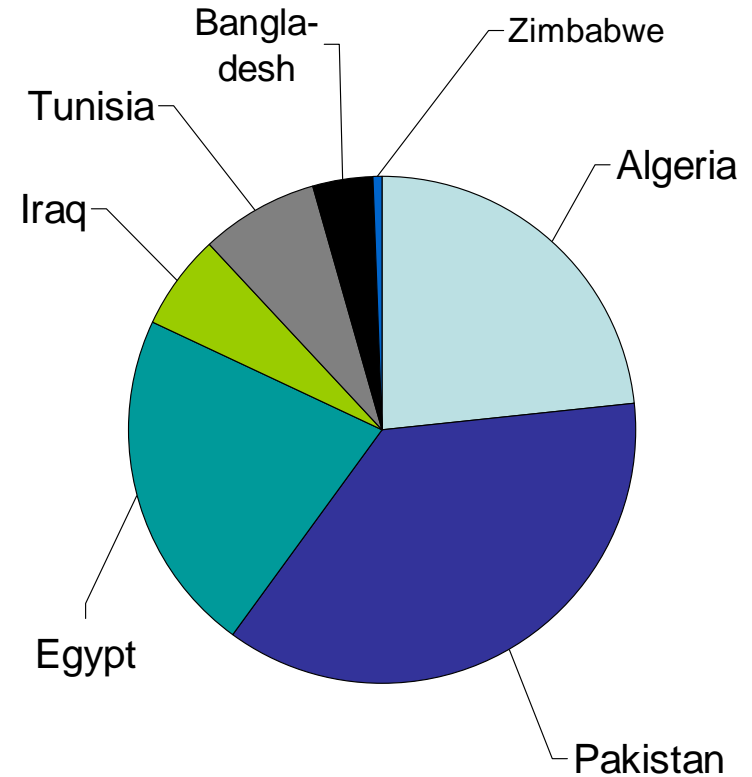
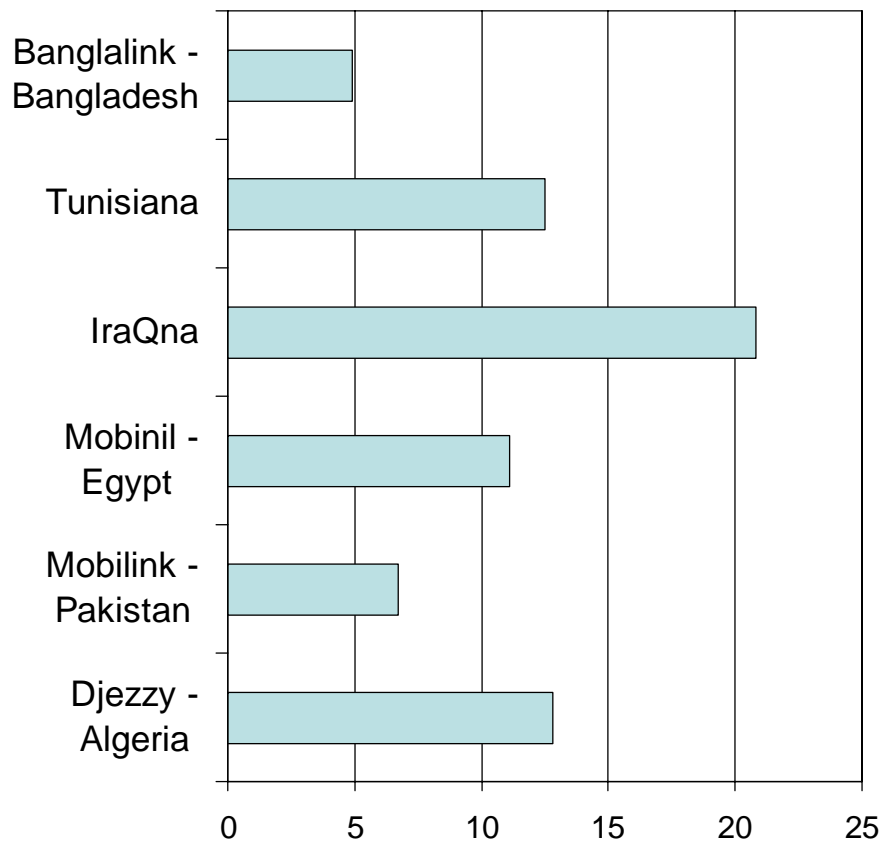
- Several businesses of which one is telecommunications
- Also in Pakistan and Bangladesh
- Purchased Wind (GSM and 3G) in Italy in 2005



Orascom Telecom

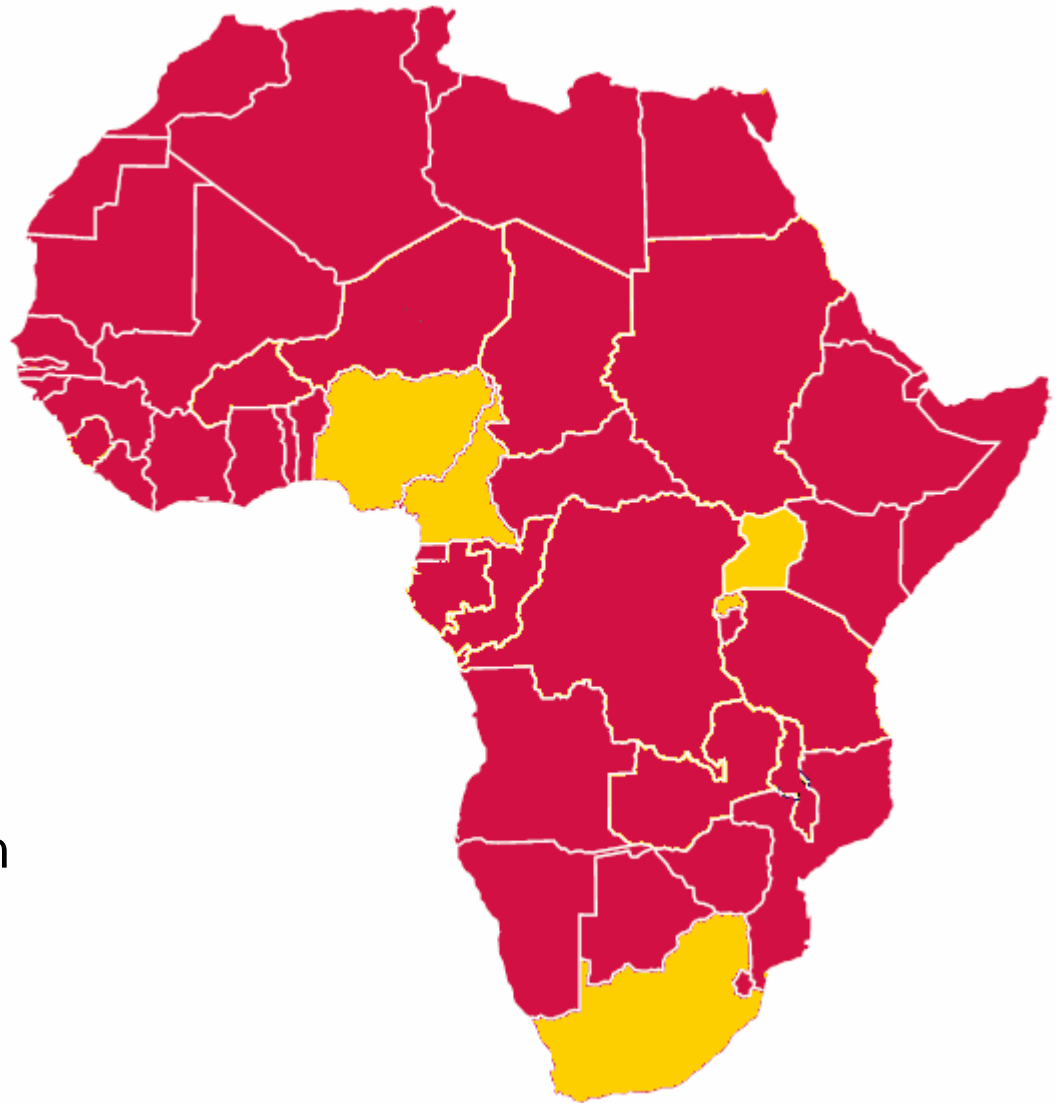
30.4 M customers at 31 December 2005

ARPU (US\$)



MTN Group

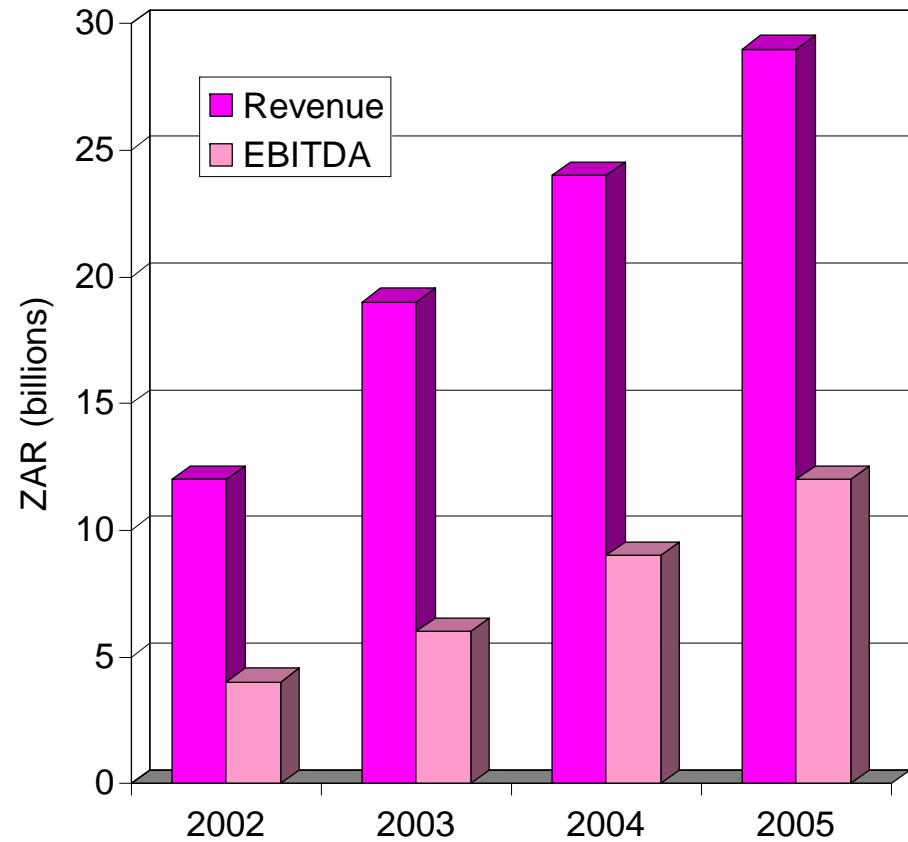
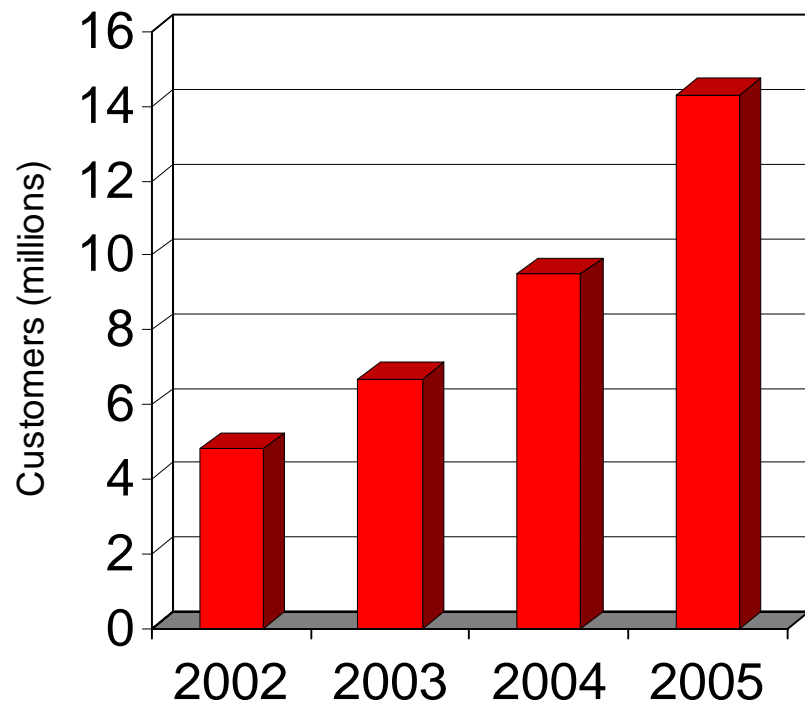
- South Africa
8 million customers
 - 4,500 cell sites covering:
 - 19,200 km of road
 - 900,000 km² of land
 - 96% of the population
- Nigeria
4.4 million subscribers
 - 1 600 cell sites covering
~ 58% of the population
 - 6,400 km of transmission
infrastructure
- other markets:
1.9 million customers



<http://www.mtn.co.za/>

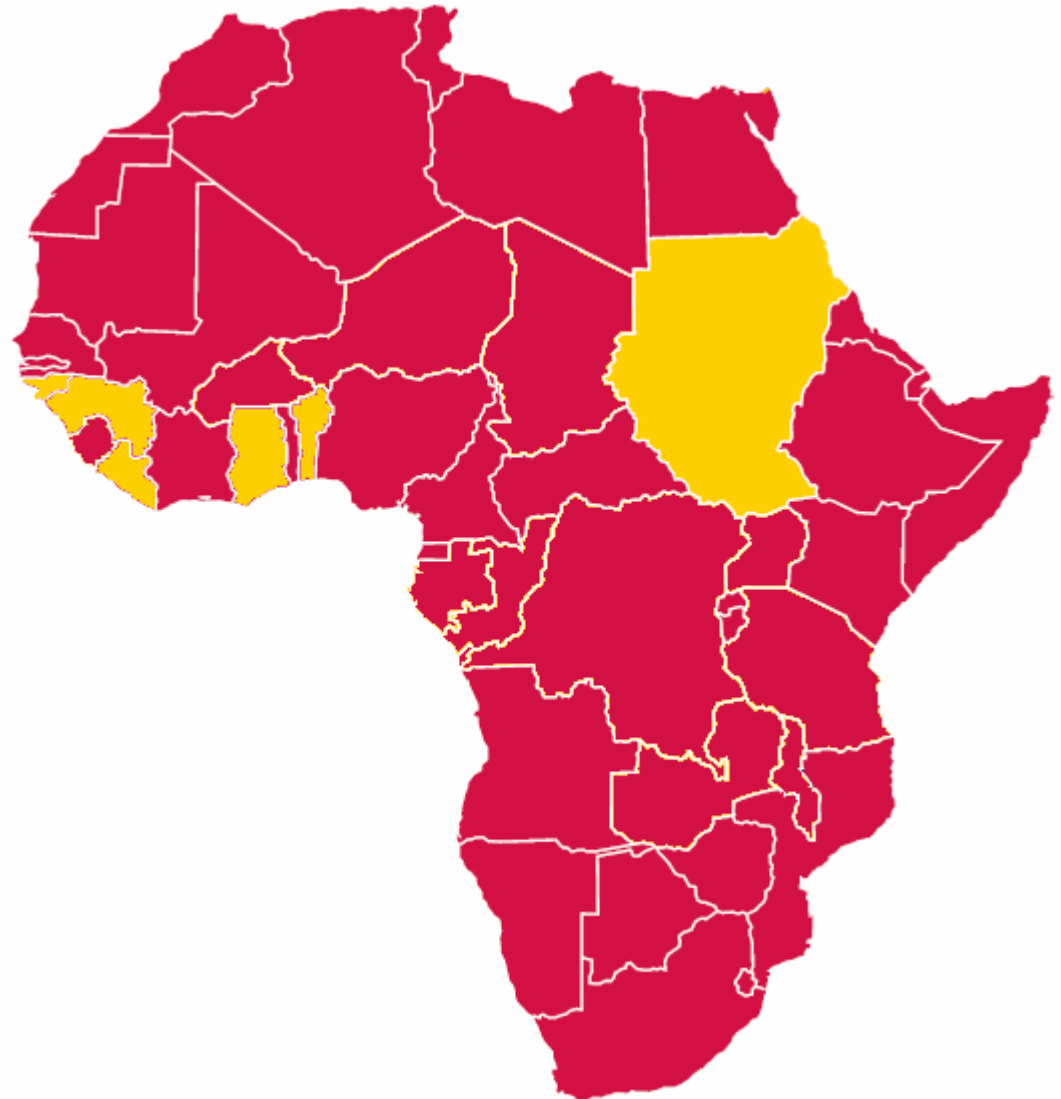
MTN Group results

14.3 million customers



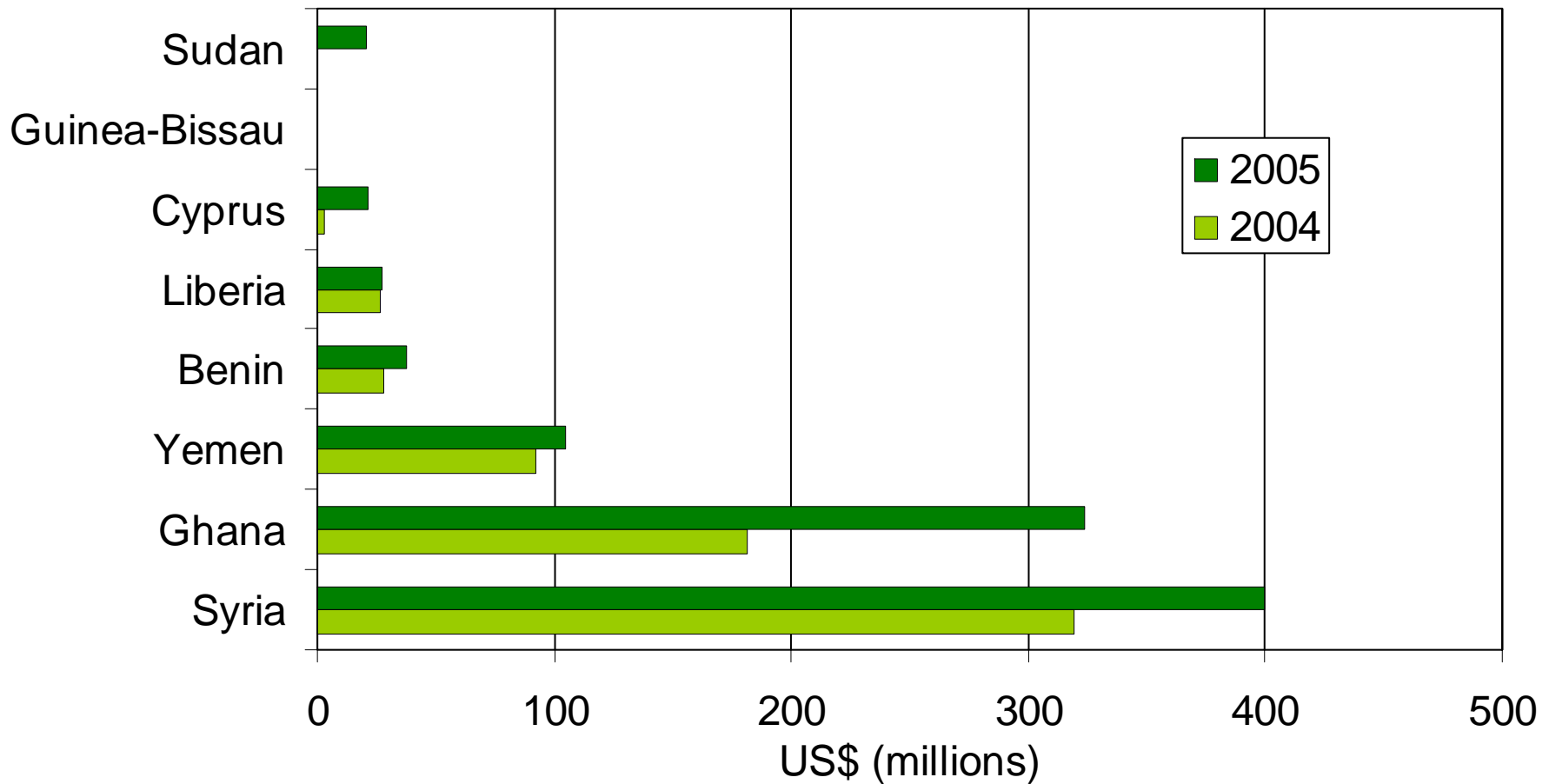
Investcom – Areeba brand

- Led by former prime minister of Lebanon
- Operating in:
 - Africa
 - Syria
 - Yemen
 - Cyprus
- Recent licences in:
 - Afghanistan
 - Guinea



Investcom

Gross operating revenues



Conclusions

- Enormous growth in 2G in Africa:
 - past
 - future
- Highly profitable
- Private investment with no need for government money
- Declining ARPU as more but poorer customers are added
- Operators are in multiple countries to:
 - achieve economies of scale
 - spread risks
 - accelerate growth
 - learn faster about customer needs
- Operators are almost exclusively African and Arab

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