

Roaming in Sub Saharan Africa

May 2012 Cotonou, Benin
SG3 Seminar
Vikram Raval - Roaming Regulation

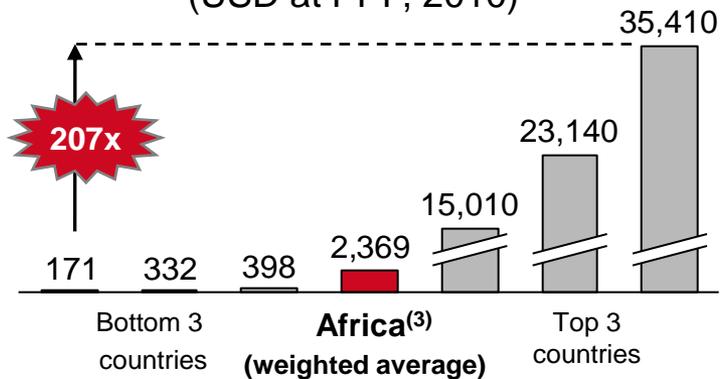


Agenda

- **Overview of African roaming situation**
- Regional challenges to roaming market development
- Market trends and opportunities
- Risk of regulating roaming
- Key Takeaways

Sub Saharan Africa is at disparate stages of development

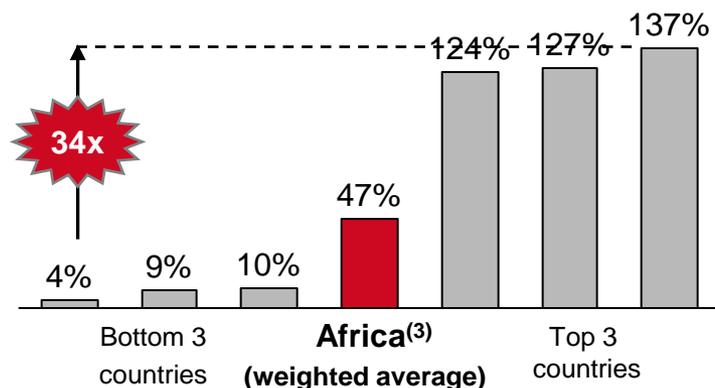
GDP per Capita (USD at PPP, 2010)



African countries are in different stages of economic development...

- GDP per capita can be up to **207x higher** in some countries and is on average **4x lower than the Arab World**
- In the last 2 yrs **local currencies** have **appreciated by up to 29%** and **depreciated by up to 61%** against the USD
- **EU member states homogeneous** (similar)

Mobile Penetration Rates⁽²⁾ (Percentage, Q2 2011)



...and vary in mobile market maturity

- **Penetration rates range from 4% to 137%**
- **Average revenue per user per month** ranged between **\$3 and \$14** in Q4 2010⁽¹⁾
- On average **97% of subscribers are prepaid** as of Q1 2011

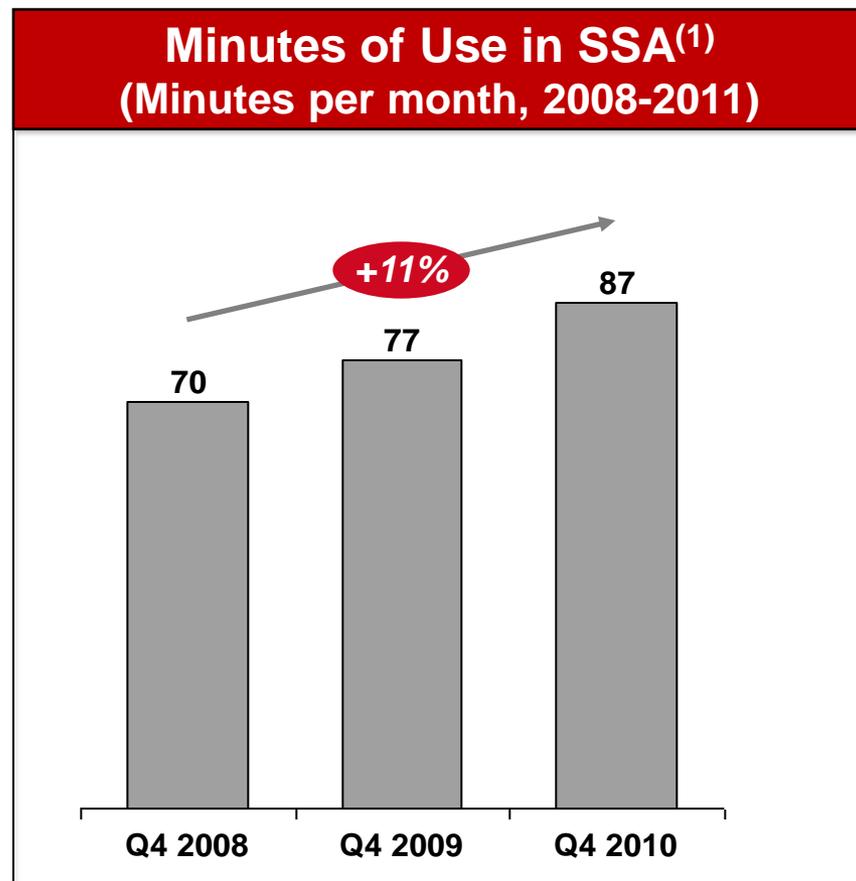
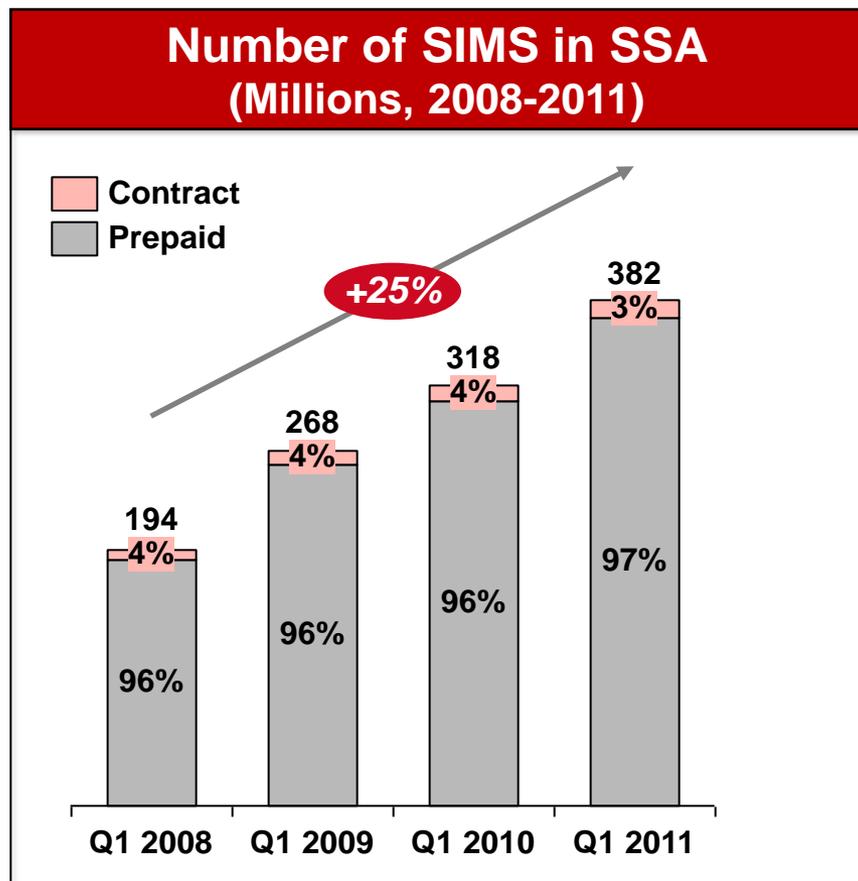
(1) From Wireless Intelligence and Merrill Lynch Wireless Matrix – based on available data

(2) Penetration rates are calculated using total connections over population

(3) Excluding Arab World

Source: EIU, Wireless Intelligence, Merrill Lynch Wireless Matrix, A.T. Kearney analysis

Africa's mobile market is rapidly expanding with the continuing domination of prepaid customers

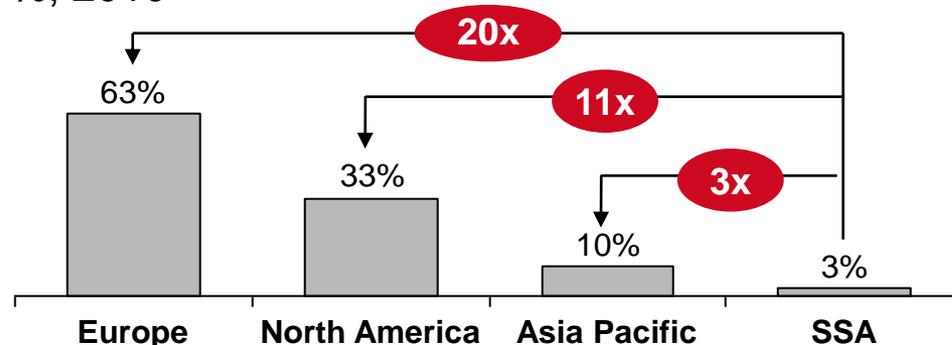


(1) Simple average based on a sample of 6 African countries
Source: Wireless Intelligence, 2011

However, Africa's roaming market is still nascent and accounts for just 5% of global roaming revenues

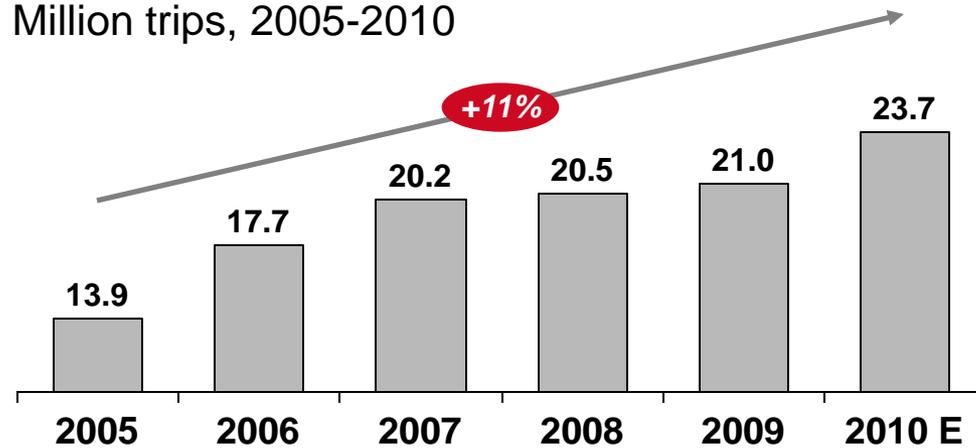
| Key Stats EU vs. SSA %, 2010, est. (2) | | |
|---|-------------|-------------|
| | EU | SSA |
| % of global roaming revenues | 39% | 5% |
| % of region's total mobile revenues | 3.8% | 1.8% |
| Population (million) | 500 | 773 |
| | | |

Ratio of international trips to population⁽³⁾
%, 2010



Trips originating from SSA⁽⁵⁾

Million trips, 2005-2010

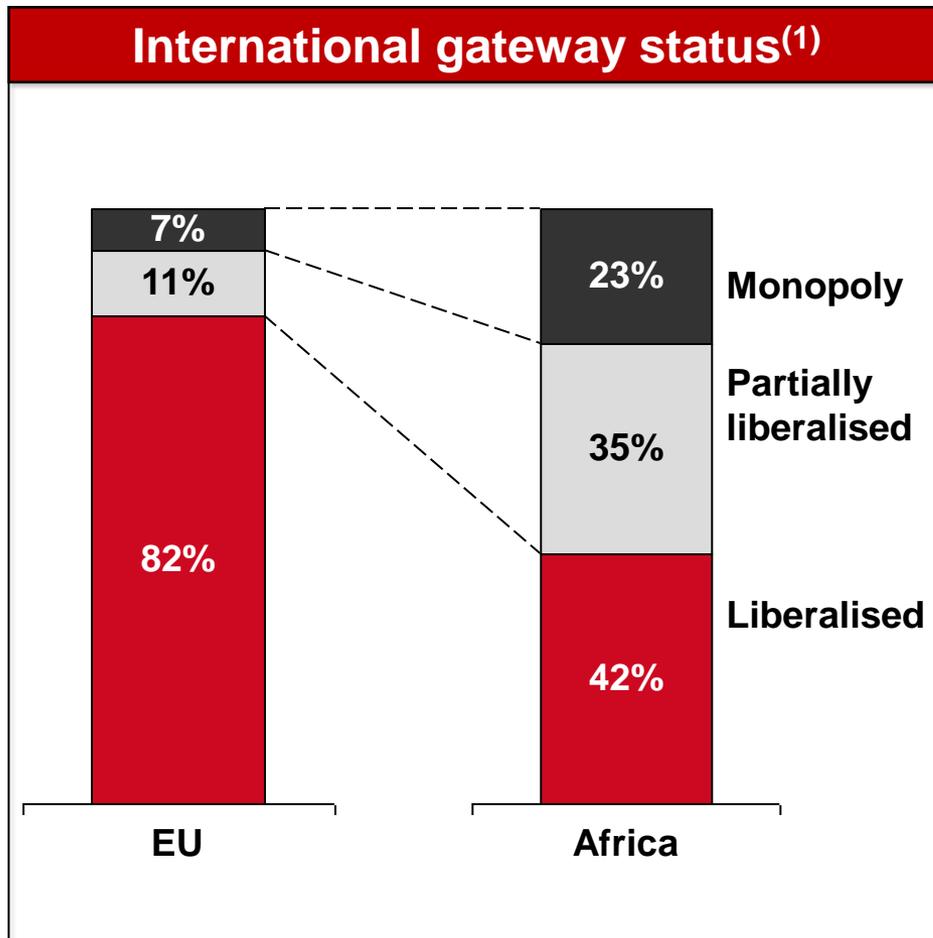


(1) The review and assessment presented in this document has been performed by A.T. Kearney based on market information and limited operators' input. This document provides an high level assessment of the roaming market, further input from operators would be required to provide a more granular view.
 (2) Based on detailed bottom up data for EU. SSA based on high-level estimate. Includes wholesale & retail revenues for intra- and inter- region roaming
 (3)Based on number of trips divided by population so overestimates % of unique roamers; (5)Trips include intra and inter-region, 2010 is estimated
 Source: Confidential operator data, Gartner, Informa, UNWTO, EIU, A.T. Kearney analysis

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Even with widespread use of roaming, prices could remain high on routes with monopolised IGW's



IGW: International Gateway

(1) Based on ITU 2005-2010 data. Sample for Sub Saharan Africa based on 31 countries – data not available for 12

Source: ITU, GSMA Gateway Liberalisation Report 2007

IGW status in Africa

- Around 2/3 of roaming calls are international calls back home
- Although there has been much improvement in the level of competition, international gateway monopolies still exist in at least 56% of African countries

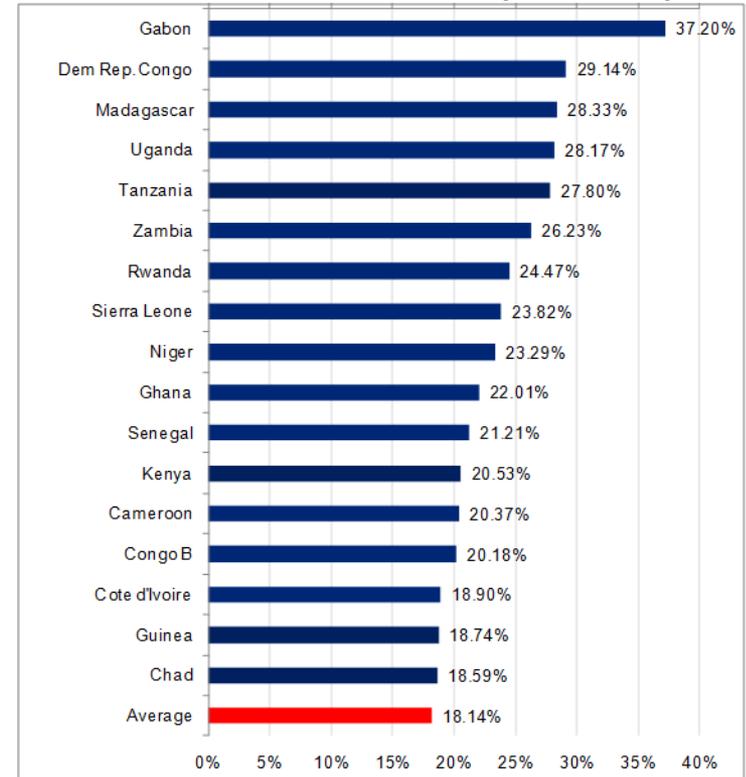
Implications for end-users

- IOT's for monopolised roaming routes are likely to remain high
- Even with volume growth, there is no bargaining power for operators whilst gateways are not liberalised
- **International roaming call prices between Arab countries with liberalised gateways are significantly lower than between Arab countries with gateway monopolies. We would expect the same to occur with liberalisation in Africa**

Sector-specific taxes on mobile telecoms have negative impacts

- Mobile telecoms is a significant contributor to national economies
 - Direct monetary contribution
 - Mobile services stimulate activities in the wider economy further boosting GDP
 - Provides sustainable employment opportunities to millions across the region
 - Improves productivity of employees and businesses
 - Social benefits (e.g. m-money)
- Sector-specific taxes on mobile telecoms are harmful
 - Dis-incentives consumer take-up of mobile services
 - Discourages consumer usage
 - Hinders investment in networks and services

Tax as a proportion of total cost of ownership in some countries in Africa are above global average



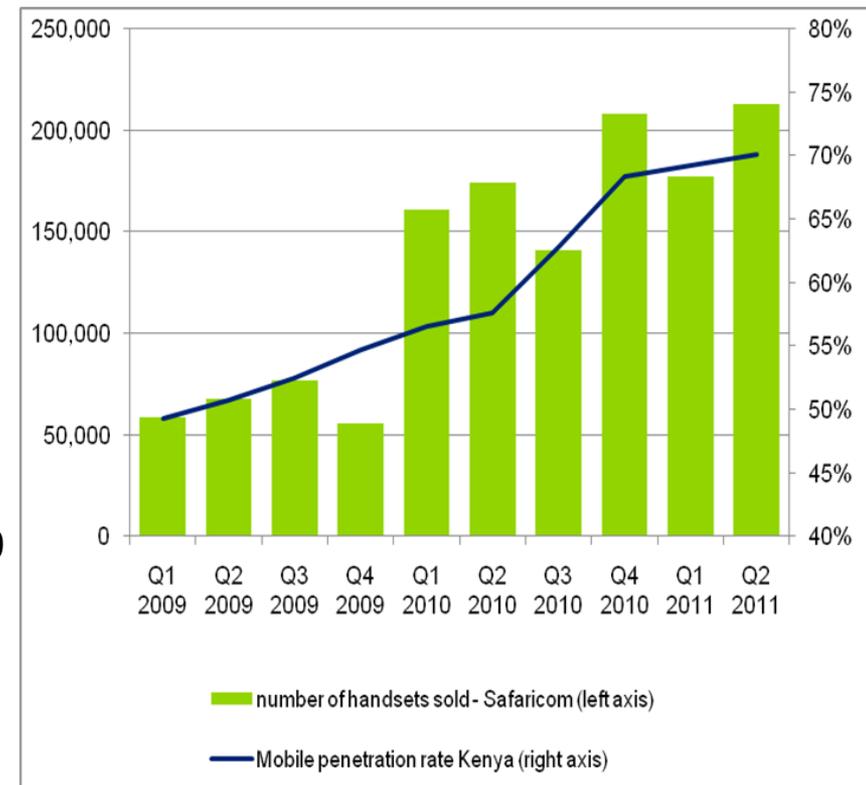
Source: GSMA/Deloitte Global Tax Review (2011)



Reducing sector-specific taxes on mobile telecoms benefits consumers, business and governments

- High taxes send the wrong signals on consumption and investment
 - Limits the value creation potential of mobile
- Reducing mobile taxes could be beneficial
 - Increases take-up of mobile services
 - Encourages usage of mobile services
 - Stimulates economic activity (*multiplier effect*)
 - Could generate more revenue in taxes
- Kenya abolished taxes on handsets in 2009
 - Increased take-up of services
 - Created more revenue for government

Mobile take-up and handset sales increased in Kenya after handset taxes were removed



Source: GSMA/Deloitte Case Study on Kenya (2011)



Technological constraints still exist although investment has been undertaken in recent years

Technology Challenges

(1) Pre-paid roaming

- Operators have invested to enable pre-paid roaming but there are still many more post-paid routes available
- Pre-paid platforms such as CAMEL are generally very expensive to implement

(2) Interoperability

- Different GSM/3G spectrum allocations prevent many low-cost handsets from roaming

(3) Coverage

- Network coverage is still patchy as operators continue to build out their networks
- 3G coverage and mobile broadband is limited and still emerging in many countries within SSA

Required Investments

- Technical implementation costs, including system upgrades and expansion of prepaid roaming, which will burden smaller operators most severely
- Enforcement and monitoring costs, which will disproportionately burden least developed countries
- Consumer communication and marketing costs will need to increase to promote roaming and ensure transparency

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Market Innovation - local prices across Africa

One Network footprint in Africa

- Airtel

Africa Nigeria, Burkina Faso, Niger, Malawi, Kenya, Tanzania, Uganda, Gabon, Chad, Congo DR, Madagascar, Sierre Leone, Zambia, South Africa

Arab World Bahrain, Sudan , Kuwait, Jordan, KSA (Saudi Arabia)

Other Bharti India, Seychelles, Sri Lanka, Bangladesh, Jersey Airtel

May 2012

http://www.africa.airtel.com/wps/wcm/connect/africaairtel/ghana/Home/Our_coverage/One_Network/One_Network_Countries

Comments

- Current **One Network** offers local tariffs for African roaming, as well as Zain operators in Arab World and Airtel India
- Prepaid customers can **top-up with local cards** in visited countries or use cards brought from home
- Customers are **billed at local currency** for prepaid
- **Cross-border trade is facilitated** with the abolishment of the roaming charges

Other operators with pan-African offer innovative tariffs to drive consumer usage

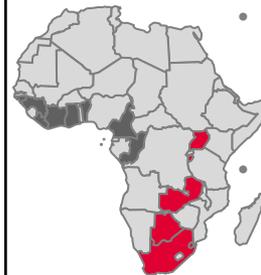
Innovative tariffs in Africa

Kama Kawaida



- Alliance of **major East African** operators (Vodacom Tanzania, Safaricom Kenya, MTN and UTL Uganda, MTN Rwanda, UCOM Burundi)
- Ability to **top up with local cards** and **make calls at local rates**
- **Incoming calls are free**

MTN One World & Seamless Roaming



- Current phase has two blocks – Seamless Roaming for East & Central Africa and One World for West Africa – plans exist to unify the blocks
- Make calls at local rates **and incoming calls are free**, and low rates for on net calls. Call rates accommodate charge on incoming international traffic

Orange Zone



- Preferential rates for Orange operators in West Africa (Senegal, Niger, Guinea, Guinea-Bissau, Cote d'Ivoire, Mali)
- Low outgoing tariffs **and incoming calls are free**
- Also preferential roaming between bordering Uganda and Kenya

Vodacom Africa Family (April 2012)

- From the 4th April, Vodacom offers savings when travelling 6 African countries where Vodacom and Vodafone operator including Democratic Republic of Congo, Ghana, Kenya, Lesotho, Mozambique and Tanzania.
- Local rates for outgoing calls, **free incoming.**

Innovative offers will further increase competition in the market and drive retail price reductions

Transparency operators continue to increase customer experience

Best Practices

Simple, clear websites to inform consumers

- Clear and concise explanatory website
- Simplified and easy to understand roaming tariffs
- Tariffs priced in local currency and/or access to accessible conversion rates
- Clear, banded pricing based on geography not network

Simplified retail tariffs in local currencies with zones

- Countries are classified into different zones and retail tariffs are published in local currencies according to the zone
- Customer avoids bill shocks by knowing what rate would be charged regardless of which operator he/she is roaming on and avoids currency fluctuations

Top-up with local cards while travelling

- Local cards and home cards can be used for prepaid top-up
- Easy accessible, free of charge customer support when abroad

Examples



Orange Mauritius

As from 1st August 2010, for your greater convenience when travelling abroad, Orange has come up with a simplified tariff plan.

The world has been divided into 4 zones namely Africa, Europe, Indian Ocean, Asia & rest of the world.

| Zone | Countries |
|-----------------------------|--|
| Africa | Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central Africa, Congo, Ivory Coast, Egypt, Equatorial Guinea, Ethiopia, Gabon, Gambia, Ghana, Guinea Conakry, Kenya, Lesotho, Liberia, Malawi, Mali, Morocco, Mozambique, Namibia, Niger, Nigeria, Senegal, Sierra Leone, Sudan, Swaziland, Tanzania, Togo, Togo, Tunisia, Uganda, Zambia, Zimbabwe. |
| Europe | Andorra, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Gibraltar, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, Norway, Netherlands, Poland, Portugal/Romania, Slovakia, Spain, Sweden, Switzerland, Turkey, United Kingdom, Yugoslavia. |
| Indian Ocean & South Africa | Comoros, Madagascar, Mayotte, Reunion, Seychelles, South Africa |
| Asia & Rest | Afghanistan, Albania, Argentina, Armenia, Australia, Azerbaijan, Bahrain, Bangladesh, Belarus, Cambodia, Canada, China, Hong Kong, India, Indonesia, Japan, Kazakhstan, Korea, Kuwait, Kyrgyzstan, Laos, Lebanon, Lithuania, Luxembourg, Macao, Malaysia, Maldives, Mexico, Monaco, Myanmar, Nepal, New Zealand, Oman, Pakistan, Panama, Paraguay, Peru, Philippines, Qatar, Romania, Russia, Saudi Arabia, Singapore, South Korea, Sri Lanka, Taiwan, Tajikistan, Thailand, Timor-Leste, Turkmenistan, Ukraine, United Arab Emirates, Uzbekistan, Vietnam, Yemen. |

MTN Nigeria

You can make and receive calls and SMSs to any of the countries mentioned below at affordable rates. Now you can even buy local airtime vouchers in Southern and Eastern Africa (Zambia, Uganda, Swaziland, Rwanda and Mascom in Botswana). This is a first from MTN!

How to load airtime while roaming?

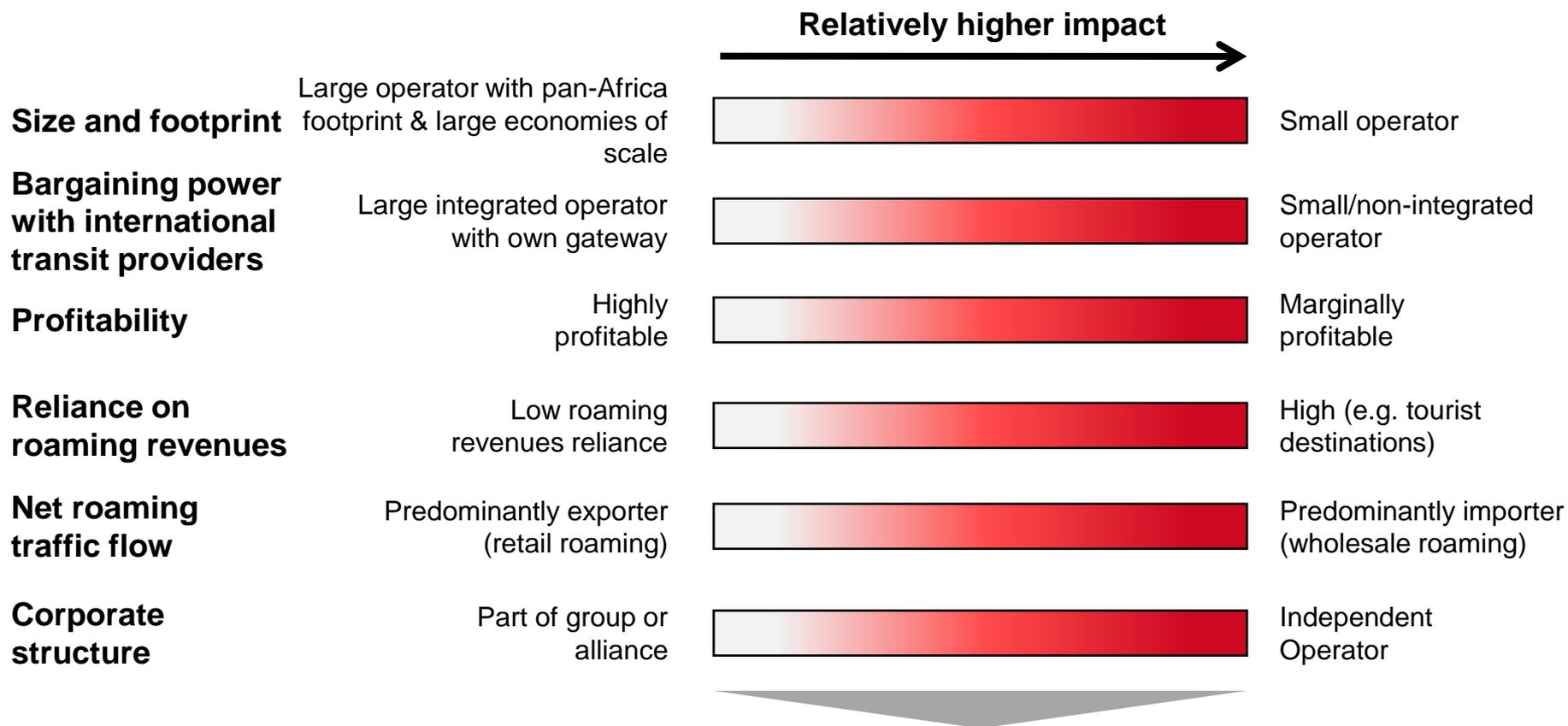
It's easy as A, B, C. Dial *222* PIN number # on your phone while roaming in Southern Eastern Africa regions.

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Whilst all operators would be impacted by regulation, some will be disproportionately disadvantaged

Operator Segmentation Parameters and Impact



Differential revenue impact across different operator types and countries

Regulation - additional risks for consumers and to industry investments via unintended consequences

Driver

Potential unintended consequences of price cap regulation

1

Market disparity

- Uniform price cap regulation does not consider economic market differences and could cause distortions over time and impact industry's ability to fair mark-ups

2

Investment in development

- Investment in network development could be hampered if roaming revenues are reduced
- Reducing revenues will reduce taxes from the telecoms industry, which could impact state investment in less developed economies

3

Waterbed effect

- Reducing roaming revenues could drive increases in domestic prices, especially if there is a peg between international rates and IOT's

4

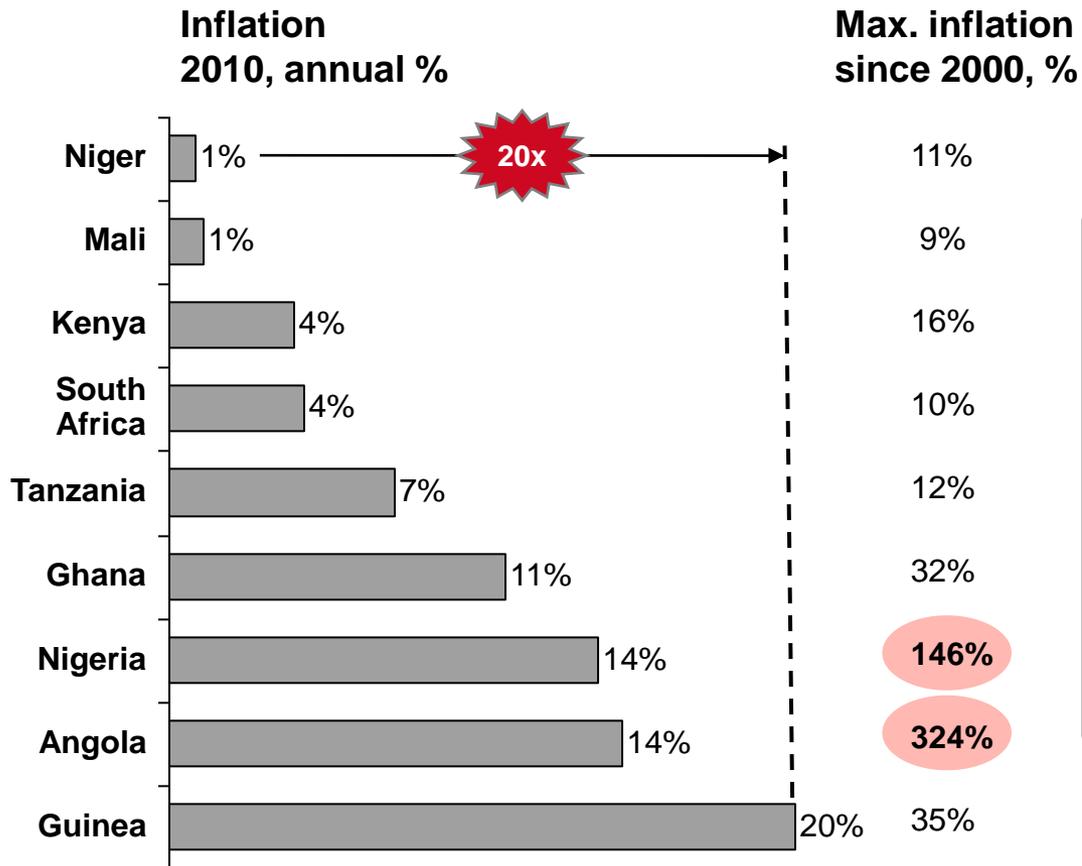
Competition and Innovation

- Competition and innovation in roaming tariffs are likely to suffer as the result of regulation



1 Uniform price cap regulation ignores the impact of inflation, and could result in margin squeeze

Inflation rates across Africa⁽¹⁾



Implications for Operators

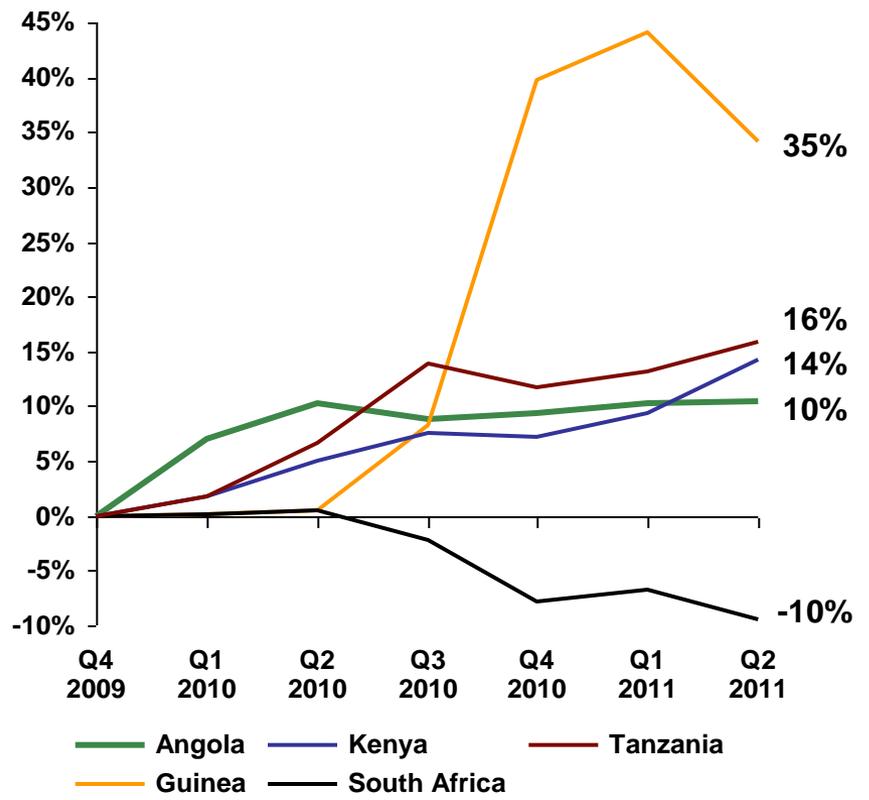
- There is huge disparity in inflation among countries and across time, which impact operators' costs
- Uniform price caps across the region ignore variation in inflation rates
- Operators in countries with high inflation will be disproportionately affected as their costs increase faster
- Increasing traffic will decrease unit costs, but in some cases inflation will offset this reduction, resulting in margin squeeze

(1) Percentage change (YoY) in consumer prices in local currency
Source: Economic Intelligence Unit, 2010

1 Applying caps in uniform currency could squeeze margins and reduce transparency due to FX volatility

Quarterly exchange rates of selected currencies

To USD, indexed with Q4 2006 = 0%



Implications

Margin squeeze if tariffs are priced in USD

- Operators must incur fixed costs in local currency, which remain the same
- A fixed USD price cap would prevent retail tariffs from rising if local currency strengthens
- This would squeeze operator margins – e.g. for a \$1 call with costs of 80 LCU:

| | \$/min | \$:LCU | Revenue | Cost | Margin |
|-----|--------|--------|---------|------|--------|
| Y | \$1 | 100 | 100 | - 80 | = +20 |
| Y+1 | \$1 | 80 | 80 | - 80 | = 0 |

Poor transparency if tariffs are priced in LCU

- Tariffs priced in local currency could require frequent price adjustments to comply with a USD price cap which would reduce consumer transparency

LCU: Local Currency Unit
Source: OANDA, as of August 9th 2011

2 Investment in development could be negatively impacted as a result of reduced roaming revenues

Reduced roaming revenues

Loss of Government tax revenue

- All countries in Africa are developing and GDP per capita can be as low as \$170
- Such countries rely on private sector taxes to fund government development initiatives
- Taxes⁽¹⁾ received by governments could decline after roaming regulation in countries where:
 - Telecoms industry represents a large % of GDP
 - Roaming services for some operators can represent a large % of total industry revenue⁽³⁾

Loss of operator investment in technology development

- There are large variations in technological and network development across the region, e.g. interoperability, coverage, pre-paid roaming availability, network deployment
- Many operators are in the process of developing roaming services, network upgrades, and increased network coverage in part to support tourism industries
- Roaming revenues often subsidise domestic services and necessary technology improvement
- Impact on mass consumer access to the internet

Reduced investment in development

(1) Taxes may include VAT, indirect taxes, regulatory fees

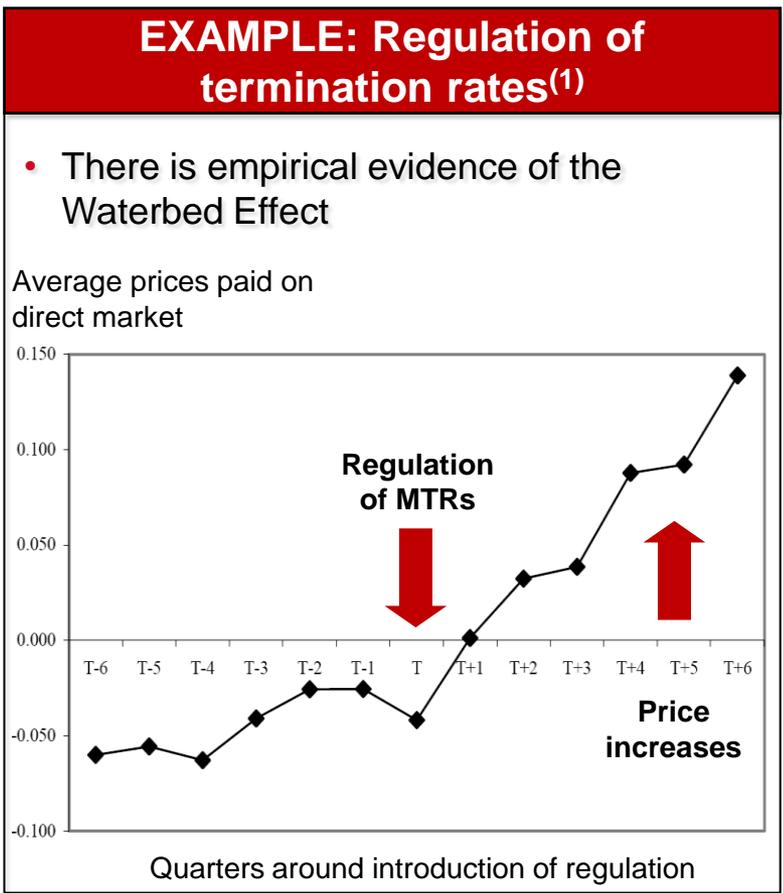
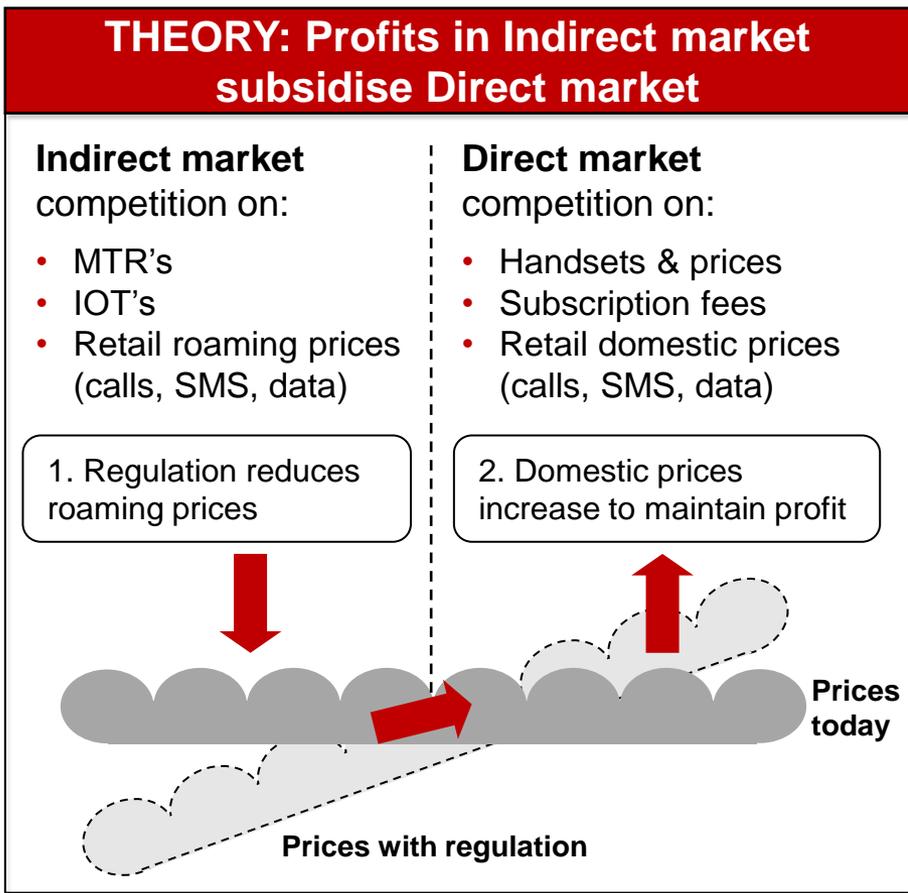
(2) Source: World development indicators, 2005

(3) Based on confidential operator data, mobile roaming revenues can represent over 1/3 of total telecom industry revenues and roaming revenues can represent up to 50% of mobile revenues in countries such as Mauritius

Source: World Bank, Confidential operator data, EIU, CRASA

3 The Waterbed effect could lead to increases in domestic retail prices or other domestic services

“Waterbed” effect of regulation in a two-sided telecoms market



(1) Fixed-to-mobile termination rates, based on a sample of 20+ countries and controlled by other influencing variables
 Source: Genakos/Valletti (CEP/London School of Economics) 2007, A.T. Kearney analysis

4 Regulation imposes commercial restrictions that could impact innovation and transparency

Examples of commercial constraints due to regulation

Tariff Innovation

- Compliance and investment costs could hinder tariff innovation, as was the case in voice roaming in the EU
- Enforcing simple per-unit price caps reduces operator's scope to innovate with better-value product bundles
- Zoning of retail prices could be unfeasible due to high variations in IOTs (especially with International Gateway monopolies)
- If not all countries adopt any future regulation, innovative regional tariffs would be more complex

Transparency

- If operators advertise in local currencies but price caps are pegged to one currency (e.g. USD) consumer transparency could become complex as frequent price changes would be required
- If not all countries adopt any future regulation, customers will face different prices in different countries across the region

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The African roaming market is nascent and faces unique challenges compared to other regions

Factors to consider

Sub Saharan Africa is different to other roaming markets such as the EU

The market is nascent and rapidly growing

The market still faces some challenges...

...but market trends are positive and the industry is committed to take the lead

Key takeaways

- Different countries in the region are at different stages of development. Regulation across the region is not viable due to differences in inflation rates, currency exchanges, labour costs, GDP/head variations and other factors
- Some countries are starting from penetration rates as low as 4%
- Mobile market is rapidly expanding but roaming is just emerging with ratio of international trips to population 20x lower than the EU
- Growth in tourism, business travel and prepaid accessibility will drive roaming usage
- Non-liberalised IGW's inflate end-user prices
- Eradicating fraud and ensuring widespread prepaid roaming require further investments
- Prices are declining and operators continue to develop innovative offers
- Many pan-SSA operators have effectively abolished roaming charges, offering consumers tariffs in line with visitor country local prices
- Operators are investing in prepaid route availability and interoperability
- Operators are committed to improving consumer transparency

The industry is committed to improving the consumer experience and the market should be allowed to develop unrestricted

Approach to regulation

- Encourage operators to take measures that enhance consumer awareness
- Address structural barriers that increase costs for service providers and consumers, such as double taxation and international gateway monopolies, including those barriers that hold back the development of market based substitutes
- Only consider price regulation as a last resort after:
 1. The other measures have been given sufficient time to conclude there is a persistent problem;
 2. It is clearly shown that operators offering roaming services have market power - that is, competition in the market for roaming services is limited;
 3. It is clearly shown that the firm derives its market power from owning a natural monopoly; and,
 4. It is clearly shown that the benefit exceeds the cost of regulation.

