SHIV BAKHSHI, PH.D.,
VICE PRESIDENT, INDUSTRY RELATIONS
GROUP FUNCTION TECHNOLOGY
ERICSSON AT A GLANCE

40% Of the world’s mobile calls are on Ericsson networks

30,000 Number of patents

110,255 Number of employees

950M Subscribers in networks that we manage

2.5B Subscribers on Ericsson supported networks

34B USD, Net sales 2012

180 Countries we operate in
AGENDA

DIGITAL DIVIDE & NATIONAL BROADBAND PLANS

MOBILE MARKET BY THE NUMBERS

MOBILE MARKET TRENDS

THE NETWORKED SOCIETY

SOCIAL IMPACT AND POLICY IMPLICATIONS

PARTING THOUGHTS
DIGITAL DIVIDE: WHAT IT MEANS

› Broadly construed, Digital Divide refers to inequality between groups in terms of access to, use of & knowledge of information and communication technologies

› The differential access to ICT has largely three dimensions: Spatial (i.e., the rural/urban divide), Economic (i.e., affordability) and Historical

› Of course, there are also whole bunch of socio-economic and cultural reasons, beyond mere demography

› Second Order Digital Divide: the Production Gap
› Refers to ‘divide’ between those who are capable of creating Internet content and those who are capable of merely consuming it
› This can be a serious power differential between groups and societies
NATIONAL BROADBAND PLANS

› In 2010, at the UN Summit on Millennium Development Goals, the ITU issued a report: “A 2010 Leadership Imperative: Towards a Future Built on Broadband”

› Declaring it a “basic human right” the ITU challenged politicians, UN agencies, and industry to ensure broadband access to more than half the world by 2015

› Result: Governments across the world have launched, or are launching, National Broadband Plans. The key element is inclusiveness

› Given dearth of fixed infrastructure, and for reasons of costs and speedy deployment, mobile broadband is widely seen as key to achieving policy goals
Every 10% increase in broadband penetration is shown on average to deliver a GDP growth of 1%.

Broadband access has a significant effect on economic growth, with 80 jobs created for every 1000 broadband connections.

Sources: World Bank, Charlmers Institute of Technology, Arthur D Little, Ericsson
THE AFRICAN ENVIRONMENT

- National Broadband Plans
- Wireless & mobile
- Africa - exponential growth in data
- Submarine cables landing
- HSPA+ & LTE
MANAGING TRAFFIC GROWTH

- Spectrum
- Technology
- Densification
TOOLS FOR CAPACITY GROWTH

SPECTRUM
Current
300-400 MHz
Required by 2020
1500-2000 MHz

TECHNOLOGY
LTE
HSPA
MIMO
AIR
Adaptive
Antennas
CA
CoMP

DENSIFICATION
Macro, Micro, Pico, WiFi
Heterogeneous Networks
MOBILE MARKET
BY THE NUMBERS
PACE OF CHANGE

1 billion connected places

5 billion connected people

50 billion connected things
BY 2018...

850 M
PCs and tablets subscriptions

3.3 BN
Smartphone subscriptions

6.5 BN
Mobile broadband subscriptions

9.3 BN
Mobile subscriptions
MOBILE SUBSCRIPTIONS Q4 2012

~ 6.3B

~ 140 M net additions

Source: Ericsson Mobility Report, February 2013 Interim Update
MOBILE PENETRATION PERCENTAGE Q3 2012

Central & Eastern Europe 128%
Western Europe 127%
Latin America 112%
Middle East 103%
North America 101%
APAC excluding China & India 96%
China 81%
India 72%
Africa 67%
Global penetration 91%

Source: Ericsson (November 2012)
MOBILE SUBSCRIPTIONS BY REGION, 2009-2018

Source: Ericsson (2012)

M2M subscriptions not included
MOBILE SUBSCRIPTIONS BY TECHNOLOGY, 2009-2018

Source: Ericsson (2012)

- LTE
- WCDMA/HSPA
- GSM/EDGE
- TD-SCDMA
- CDMA
- Other

M2M subscriptions not included
SUBSCRIPTIONS BY TECHNOLOGY & REGION, 2012 & 2018

Source: Ericsson (2012)
SMARTPHONE GROWTH

› 40% of phones sold during 2012 were smartphones
› 3.3 B Smartphone subscriptions by the end of 2018

MOBILE DATA TRAFFIC FOR SMARTPHONES WILL GROW ~14 TIMES BETWEEN 2012 AND 2018
MOBILE TRAFFIC UPDATE

Based on actual measurements

MOBILE DATA TRAFFIC DOUBLED BETWEEN Q3 2011 AND Q3 2012

Source: Ericsson (2012)

DVB-H, Wi-Fi, and Mobile WiMax not included
14 TIMES MOBILE DATA TRAFFIC BY END OF 2018

Source: Ericsson (2012)

- Data: mobile PCs, tablets and mobile routers
- Data: mobile phones
- Voice

Monthly PetaBytes ($10^{15}$B)
MARKET TRENDS 2013

1. Everything gets connected and smart, not just phones
2. Expansion into digital services to find new revenues
3. Tiered, shared, bundled and real-time pricing models
4. Customer experience driving operator transformation
5. Differentiation through superior network performance and quality
Everything gets connected and smart, not just phones

40% of all phones sold during 2012 were smartphones

15% of global user base with smartphones

Volvo is bringing Spotify to the car

Connected vehicle cloud
Expansion into digital services to find new revenues

Thank You for your interest in AT&T Digital Life™

With AT&T you’ll get professionally monitored home security, along with the latest in home automation. The best part is, you’ll be able to access and control your home using our state-of-the-art user interface from anywhere, anytime with any web-enabled device - smartphone, tablet or PC. Sign up today to be among the first to know when AT&T Digital Life™ is available in your neighborhood.
Tiered, shared, bundled and real-time pricing models

Source: http://tigo.com.co/node/1721

<table>
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<tr>
<th>Package Turbo Button</th>
<th>Price</th>
<th>Short Code Activation</th>
<th>Keyword</th>
<th>Validity</th>
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<tr>
<td>Turbo Button</td>
<td>$2,500</td>
<td>203</td>
<td>day</td>
<td>To 23:59 on the date of purchase</td>
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COP 2,500 = 1.39 USD

Easy SMS based activation

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Pocket Buddies
Unlimited internet and lots of SMS

<table>
<thead>
<tr>
<th>Price (Rs.)</th>
<th>22</th>
<th>88</th>
<th>128</th>
<th>198</th>
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<tbody>
<tr>
<td>2G Data*</td>
<td>Unlimited</td>
<td>Unlimited</td>
<td>Unlimited</td>
<td>Unlimited</td>
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<tr>
<td>3G Data**</td>
<td>100 MB</td>
<td>250 MB</td>
<td>500 MB</td>
<td>1 GB</td>
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<tr>
<td>High Speed Up to</td>
<td>Up to 3.6Mbps</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>SMS Local/National#</td>
<td>600</td>
<td>3000</td>
<td>6000</td>
<td>6000</td>
</tr>
<tr>
<td>Validity (Days)</td>
<td>3</td>
<td>15</td>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>

Get the "Pocket Buddies" experience today and enjoy unlimited internet and lots of SMS. Always stay connected with your friends and family all the time, and send them whenever you go.
Customer experience driving operator transformation

Figure 2: Global mobile operator satisfaction levels

Figure 3: Elements that make up the consumer experience

CUSTOMER RELATION
- Initial purchase process
- Billing and payment process
- Account management
- Service and support
- Loyalty building

SERVICE USAGE
- Network and service performance
- Price plan/offers
- Smartphone apps/ ecosystem/other devices

Source: Ericsson ConsumerLab 2012
Differentiation through superior network performance and quality
How likely are you to stay…?

Users with Medium NW satisfaction
- 50%

Users with High NW satisfaction
- 78%

Top NW satisfaction drivers:
- Coverage
- Speed
Rethink Coverage
From Voice to Apps

APP coverage changes things

ITU Regional Forum for Arab Region, Tunis, Tunisia, May 7, 2013 | Page 29
OPERATORS RE-THINK

Applications & Services

Systems & Platforms

Connectivity & Communication

Service provider

Service enabler

Service creator
RECAP OF MARKET TRENDS

› Technology Innovation energy is high – mobility, broadband, cloud

› Business Models are stressed – experimentation ongoing

› Consumer Experience in focus – pull effect for innovation

› Multiple evolution options exist – multiple capabilities needed

› Exciting times ahead!
MAKING SENSE OF IT ALL: THE NETWORKED SOCIETY
ON THE BRINK OF A NETWORKED SOCIETY

When one person connects, their world changes.

With everything connected, our world changes.
Impact of a networked society

People
- Lifestyle
- Health
- Convenience

Businesses
- Productivity
- Cost efficiency
- Globalization
- Assets

Societies
- Sustainability
- Safety
- Security
- Social cost

Technology Enablers

Everything that benefits from a network connection will have one.
PHASES OF THE NETWORKED SOCIETY

1771-1829: The industrial revolution
1829-1875: Steam, coal, iron & railways
1875-1908: Steel & heavy engineering
1908-1971: Automobile, oil, mass production
1971-1990: IT & telecommunication

Two different periods of each technological revolution

INSTALLATION

20-30 years

DEPLOYMENT

20-30 years

TURNING POINT

More efficiently solving old problems - winners among old players

Applying paradigm to innovate across society – new winners

NOT EVERY GEOGRAPHY MOVING INTO THE DEPLOYMENT PHASE AT THE SAME PACE

Source: Professor Carlota Perez
Universities of Cambridge, Tallinn and Sussex
MANAGING TRAFFIC GROWTH

Spectrum

Technology

Densification
SPECTRUM: LIFEBOOD OF MOBILE

Different Regulatory Approaches

Licensed – large area, QoS

Unlicensed – small area, best effort

Licensed shared access

ASA/LSA authorized-licensed shared access for mobile broadband in under-used spectrum
IMPLICATIONS FOR POLICY

› To exploit scale (and scope), harmonize spectrum

Policy

Technology

Markets

MUTUAL INTERDEPENDENCE
Harmonized spectrum is key for affordable MBB access as well as for successful realization of national policy goals based on standardized products operating in licensed spectrum.

- Economies of scale (based on a mass market)
- Easy cross-border coordination
- Cross-border operation (between countries)
- Global roaming capabilities
- Interoperability choice and convenience
- Efficient use of spectrum (also in border areas)

Providing affordable services and applications for all
IMPLICATIONS FOR POLICY

- To exploit scale (and scope), harmonize spectrum
- Policy players must seek to provide regulatory certainty
- Recognize & govern telecom as critical social infrastructure, not a mere vertical industry
- Not a cow to be milked, but a horse that will drive the buggy of the economy

MUTUAL INTERDEPENDENCE
RETTHINK the opportunity

REALIZE the potential to unleash digital vitalities of African/Maghreb economies

Key moment in history and a golden opportunity to light up Africa!