

150203 Pe on Telecommunications & Postal Services

# Telecommunications & South Africa's growth, employment and poverty reduction aspirations

*ICT 20 Years On* seminar  
Telecommunications & Postal Services Parliamentary  
Portfolio Committee

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Commissioner: NPC  
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## NDP focuses on three key elements of inclusive growth

- ▶ Country needs to grow in a way that creates employment
- ▶ Social services and wage goods should be affordable and accessible so that majority can achieve decent standard of living
- ▶ There should be channels to influence factors that influence citizens well being

ICT plays a critical role in these 3 areas

# Why is broadband important to NDP?

- ▶ What is broadband? It is essentially high speed internet
- ▶ Context:
  - the world is moving from voice communication to high speed data connection. Technology is converging towards data and the cloud. Those that are excluded, whether countries or people, will be left further behind
- ▶ Why is it important?
  - Communication is the foundation for everything
    - an inclusive market economy
    - increasingly a divider between those that can readily access services and those that are marginalised. In a context where technology to address access is now available off-the-shelf
    - It is key facilitator of citizen engagement
- ▶ The digital divide is deepening and this will entrench and deepen inequality
  - SA business is well connected – in upper third in global rankings
  - SA citizens and government are not- in bottom third of global rankings

# Three main pillars

- ◀ Modernising commerce and taking advantage of new industries for growth
  - SA business is already ranked high globally – in top third globally
  - In context of limited financial resources, policy can focus on sustainable competition and ensuring service, access and competitive pricing.
- ◀ Connecting government
  - SA government ranks very low – in bottom third. This is space where Rwanda and Kenya have leveraged to share leading space in Africa
  - This is the main focus of government spending right now, but it has very little impact on outcomes
- ◀ Universal access
  - SA citizen e-enablement ranks very low globally – in bottom third
  - This should not be confused with mobile phone diffusion which is widespread. Approx 1/3 of South Africans are connected with broadband, often on a smart phone. But this is concentrated in higher income communities

# South Africa Connect: the Government has set out a compelling vision for broadband in South Africa...

## Objectives

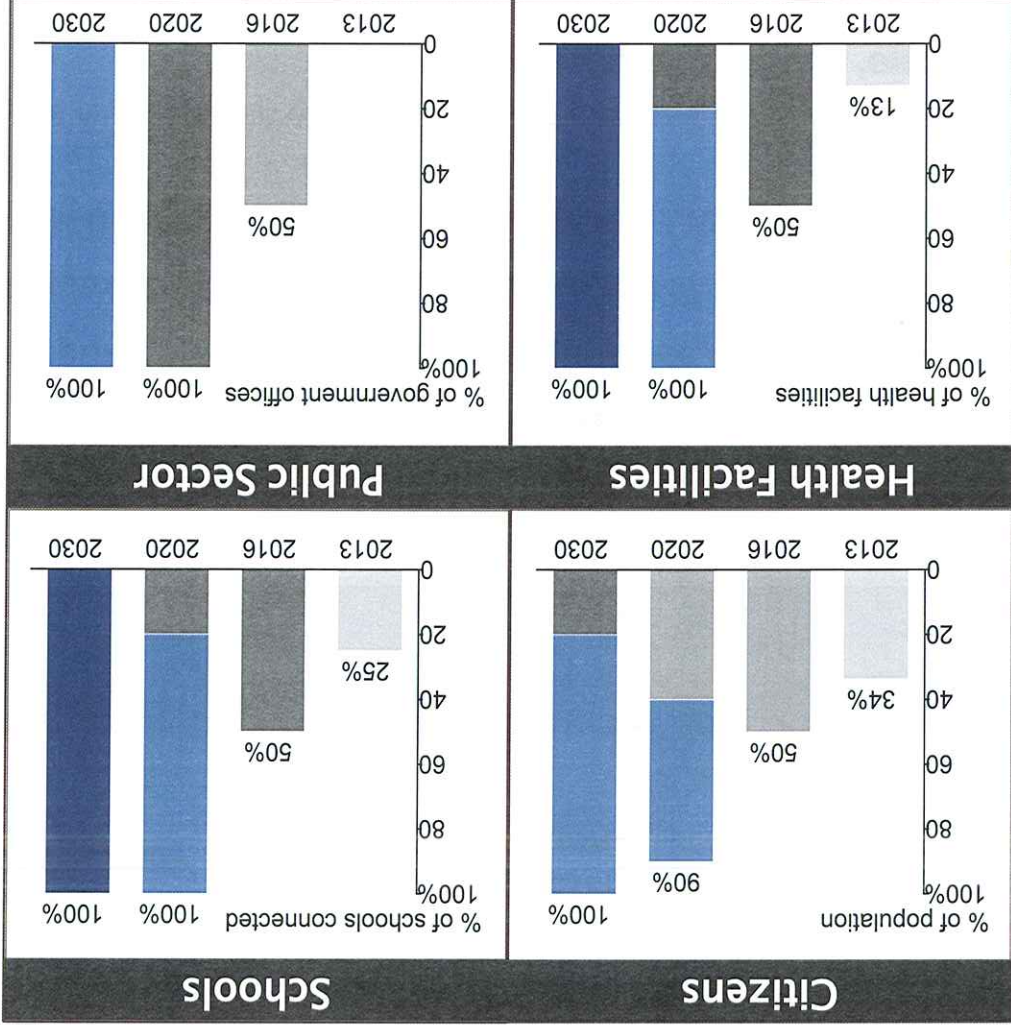
- **Affordable, ubiquitous broadband**
  - To meet the diverse needs of public and private users, formal and informal business, and consumers and citizens
- **Policy and regulatory conditions** that enable investment by public and private sector
- **Efficient public sector delivery**, including e-government services (national, provincial and local)
- **Fully exploitable broadband efficiencies** by public and private enterprise (formal and informal)
- **Strong national skills base** developed for the country
- Create an environment for a **vibrant creative and software industry**
  - Producing content and applications relevant to meet diverse needs of SA users

## Four Key Strands

| Digital Readiness   | Digital Development                                       | Digital Future             | Digital Opportunity   |
|---|---|----------------------------|---|
| Enabling policy & regulatory frameworks; institutional capacity | Public sector demand aggregation to address critical gaps | National Broadband Network | Skills & institutional capability, R&D, Innovation & entrepreneurship<br>Content and Applications |

Source: South Africa Connect presentation (Department of Communications)

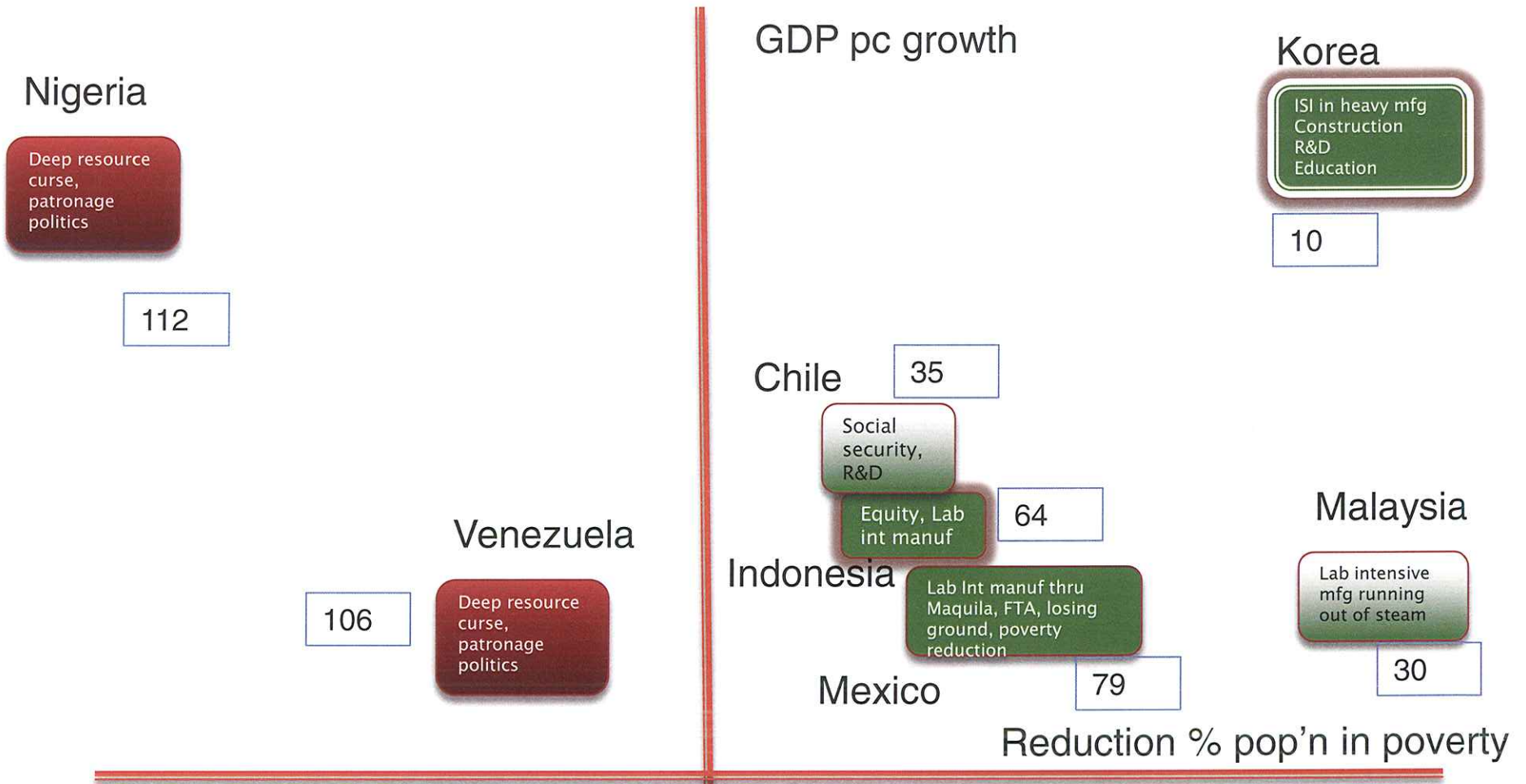
... with ambitious targets to be achieved by 2020



High targets set on speeds (100Mbps, 1 Gbps) implies a key role to play in delivery of SA Connect

Source: South Africa Connect presentation (Department of Communications)

# what kind of economic path?



xx This is broadband ranking by WEF, out of 148 countries

- 70 – South Africa
- 85 – Rwanda
- 92 – Kenya

Not to scale



# The future of employment & growth



# Growth & employment in a middle income minerals economy

- ▶ SA is middle income resource economy:
  - Middle income is an appearance, as ‘rents’ are poorly distributed. This is common to African middle income resource economies
  - Manufacturing is a falling share of employment globally. Especially true in resource economies (partly due to exchange rates)
  - SA is big exporter of metals and slightly processed products, while new employment comes mostly from services.
  - Danger of “middle income trap” – must compete on product & technology

*Diagnostic asked what kind of economy do we have. Resource economies are a challenge. Can break out, but requires sustained commitment*

## .....most jobs are in services

- ▶ More than 70% of employment created is in services. Very common globally
- ▶ Services account for rising share of global trade.
- In 2012, value of knowledge intensive trade (where R&D of skilled labour contributes large share of value) = about 1/2 of value of trade of goods, services and finance (McKinsey)
- We need to give more attention to stimulating ICT related sectors, investing in R&D and in e-enablement, to create right complement of job opportunities
- ▶ The NDP gives attention to industrial promotion of services due to its role in job creation.
- For eg it is suggested that we should aim to stimulate the creation of 700,000 jobs in IT enabled services over the period of the plan.
- ▶ SA does not take advantage of global trade in services – as compared to Malaysia, Korea, Indonesia, Turkey etc
- Success will depend on telecommunications platform, product & innovation, skills base, and competitive relations with countries like USA

# Employment scenarios

| Sectors  | 2010               | 2030                 | 2030                    | 2030           |
|--|--------------------|----------------------|-------------------------|----------------|
|  | employment in 2010 | S1 mediocre minerals | S2 magnificent minerals | S3 diversified |
| Agriculture  | 627 000            | 513 547              | 627 000                 | 803 788        |
| Mining   | 297 000            | 268 047              | 388 497                 | 436 937        |
| Manufacturing  | 1 556 000          | 1 879 487            | 2 168 477               | 2 288 057      |
| Leader & high paid services (eg finance, transport)  | 2 025 000          | 3 009 437            | 3 565 137               | 4 187 781      |
| Follower services (eg retail, personal services)     | 1 927 000          | 4 180 710            | 4 874 585               | 4 966 878      |
| Construction & utilities                             | 828 000            | 1 053 622            | 1 277 699               | 1 407 060      |
| Informal sector & domestic work; excl EPWP           | 2 922 000          | 4 093 532            | 4 604 434               | 5 012 101      |
| Public sector, private social services & parastatals | 2 529 000          | 3 277 650            | 3 518 023               | 4 225 313      |
| EPWP   | 420 000            | 5 483 277            | 2 644 291               | 431 120        |
| Total  | 13 131 000         | 23 759 840           | 23 759 840              | 23 759 840     |
| Avg GDP growth pa                                    |                    | 3,3%                 | 5,0%                    | 6,4%           |
| %WAP working w/out epwp                              | 41,0%              | 47,1%                | 54,4%                   | 60,1%          |
| UE w/out epwp  | 25%                | 27,7%                | 16,5%                   | 7,7%           |

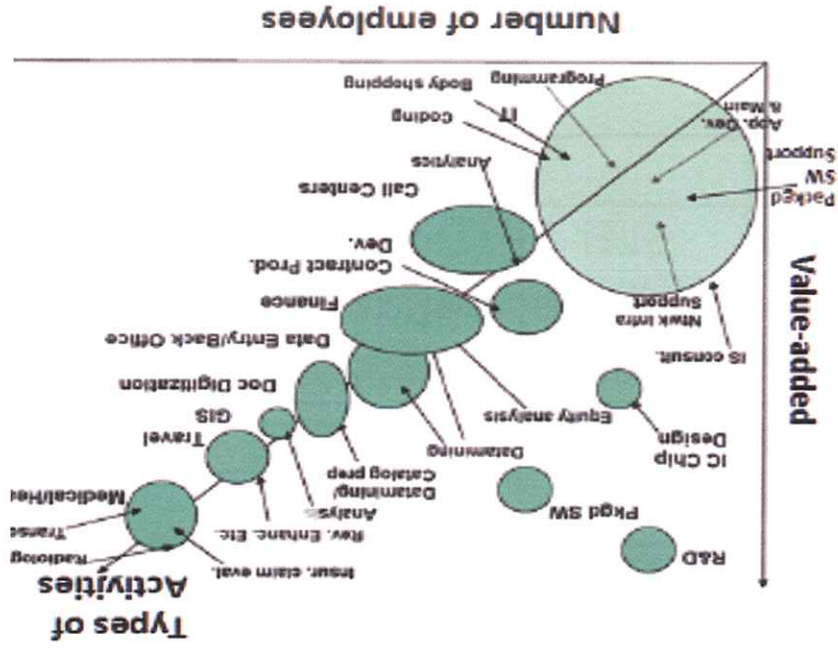
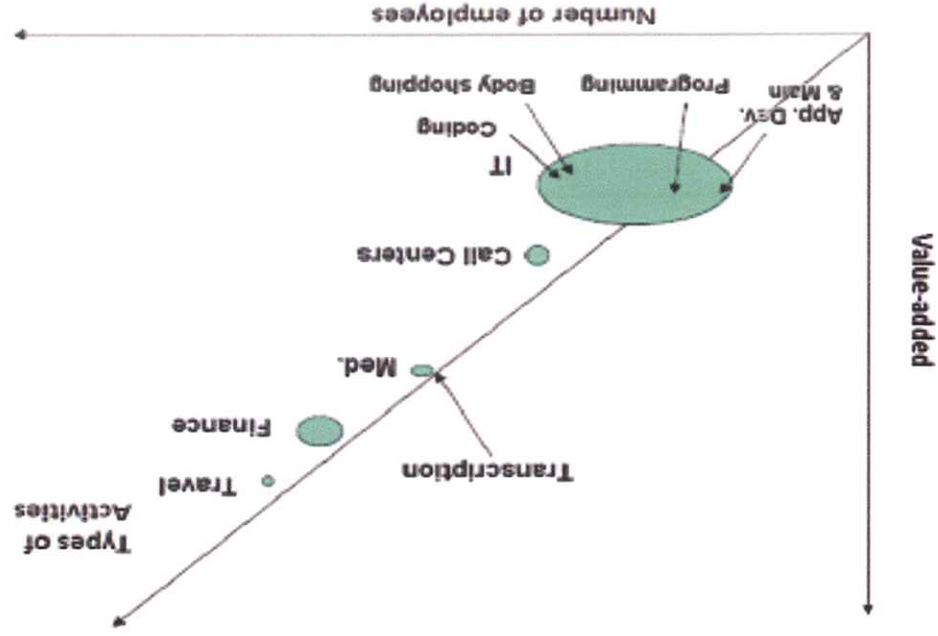
# Example of how we could create jobs and growth through IT enabled services

Employment in India's BPO & Industry

| Year | IT services | exports | BPO exports | IT BPO domestic | IT BPO domestic |
|------|-------------|---------|-------------|-----------------|-----------------|
| 2000 | 162000      | 513000  | 70000       | 198114          | 430714          |
| 2005 | 1145000     | 513000  | 415000      | 365000          | 1293000         |
| 2010 | 1145000     | 513000  | 835000      | 560000          | 2340000         |

Source: Calculated from [NASSCOM 2010](#)

Change in IT enabled services provision, India, 2000 & 2006



Source: Dossani & Kenney (2007, Figure 2 page 44, and Figure 4, page 46 respectively).

# There are a number of ways that a country can leverage broadband to drive economic growth.

Countries have chosen to focus on different strategies but these strategies are not necessarily sequential and can be implemented in parallel.

**1**  
**Enable individual digital citizenship**

Using ICT/BB to empower citizens and build new industries

*Illustrative country examples*

*Estonia  
Lithuania  
Kenya*

**2**  
**Promote economic growth of industries and ITES industries**

Using ICT/BB to improve the efficiency of industries and build out ICT/BB enabled product or service deliver (e.g. SMEs, BPO, call centres, manufacturing)

*India  
Malaysia  
Philippines*

**3**  
**Demonstrate leadership for key ICT products or services**

Using ICT/BB to boost exports, domestic markets or national ICT/BB capacity. ICT/BB based goods (e.g. hardware, software and applications development)

*India  
South Korea*

South Africa should deploy a multi-pronged ICT strategy but focus on building a critical mass of digital citizens and key industry users (government and SMEs) in order to drive bb demand alongside its development mandate.

Some principles for strengthening  
impact of Government on e-  
enablement



# ICT for service delivery and pulling citizens online.....

- ▶ Private sector plays a critical role in rolling out broadband and services. But in a highly unequal country like SA, Government has to step in to drive equitable access
- ▶ SA Connect is comprehensive policy framework. There are some design principles that could strengthen its impact:
  - Approach to public sector ICT projects and programmes
  - Understanding the technology mix
  - Stimulating R&D, innovation and adoption in key areas like education, health and safety
  - Playing a closer role in the framing of industrial policy and in education



**High impact public spending:**  
Fragmented spending across 3 spheres of Govt  
This is the *biggest challenge* to any focused effort to e-  
enable government services

National budgeting challenges:

- The majority of government ICT expenditure takes place in provinces and metros
- While billions are spent, it is fragmented and has not had substantial impact on e-enabling government

Essential design principles needed:

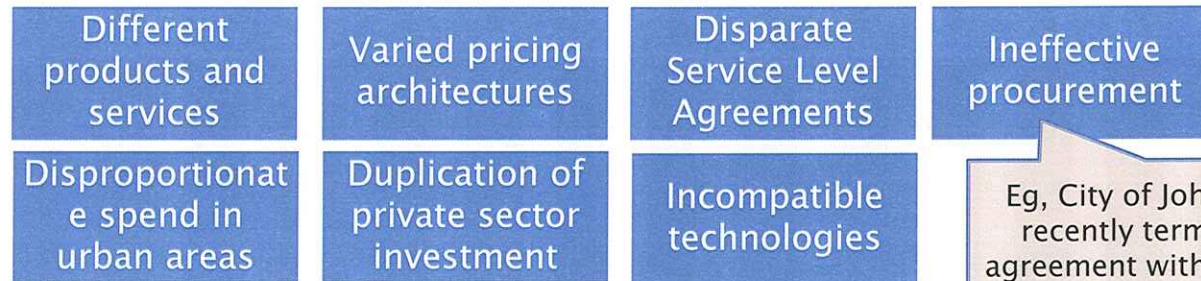
- Guidelines needed across government for public sector ICT projects to ensure benefits realised, likely issued by Treasury
- Expenditure alignment towards equitable access
- Fund public infrastructure, and don't rely on indirect obligations





# Require interoperability: 'Free for all' in infrastructure build by local government will potentially lead to reduced effectiveness and efficiency of National Broadband Plan

*Fragmented approach  
will create potential  
inefficiencies...*



Eg, City of Johannesburg recently terminated an agreement with its Ericsson partners after breaches of obligations were found

*...leading to risk of  
NBN which falls short of  
full potential on reach  
and cost effectiveness*

Full NBN with significant added costs and complexity in roll-out

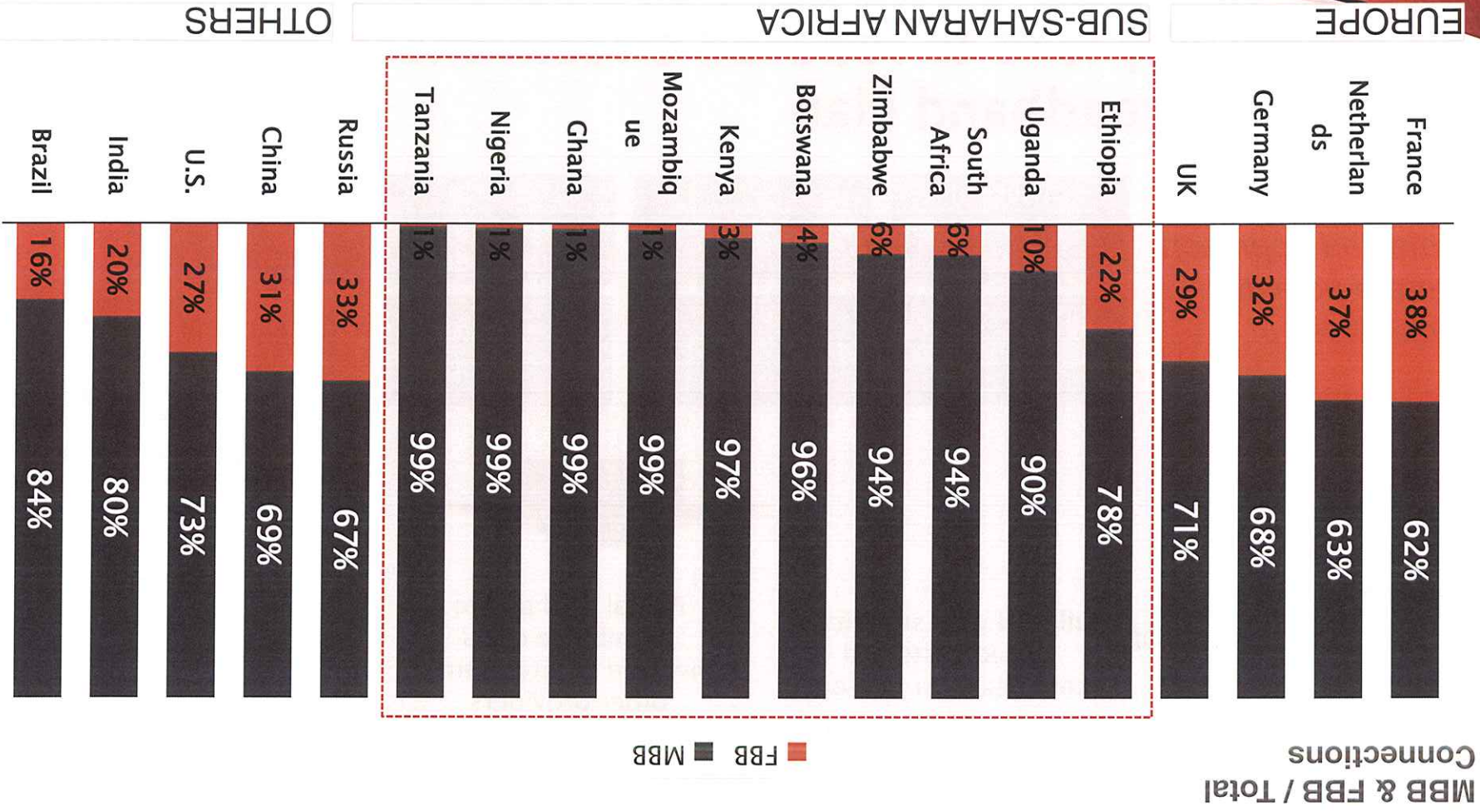
Partial NBN due to prohibitive costs involved in integrating other providers

'Patchwork' NBN with ability to run eGovernment services on a national basis compromised

**Decision to roll out NBN and ICT expenditure policy review needs to occur ASAP to increase access and avoid cost / complexity of eventual integration**

# Mobile broadband dominates in Sub-Saharan Africa region

Technology mix



Connections

■ FBB ■ MBB

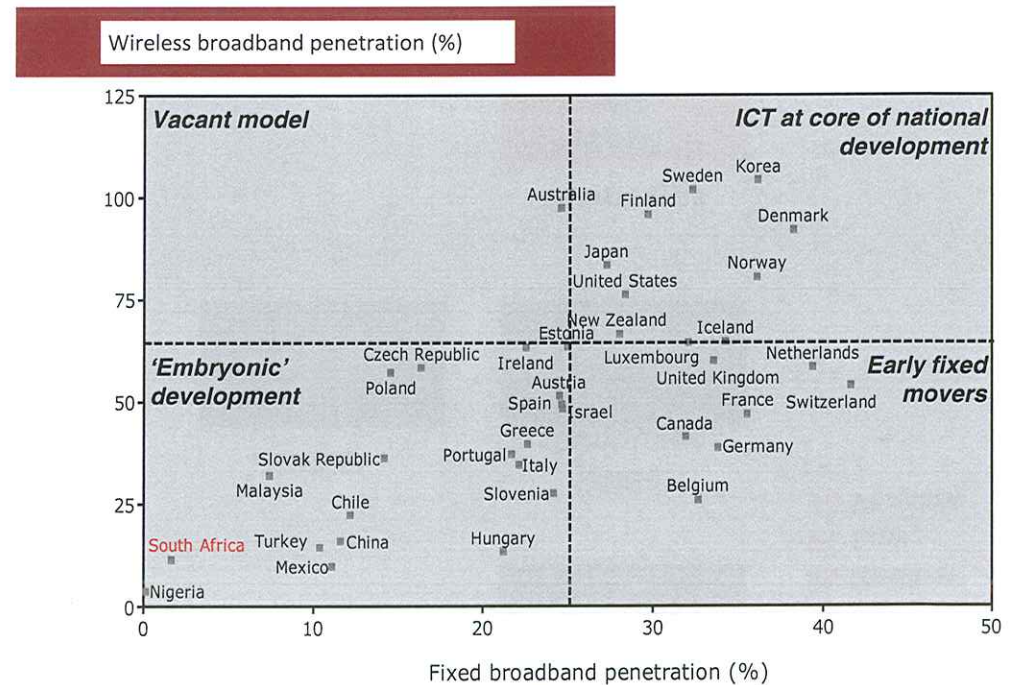
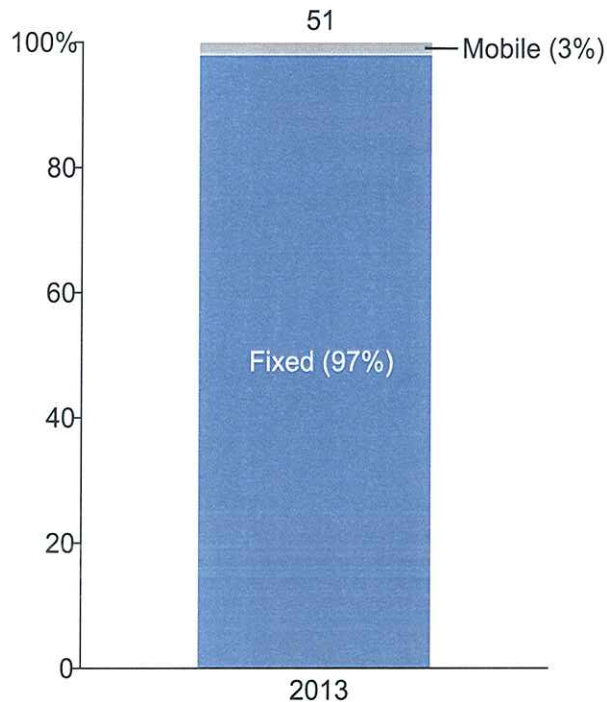
# Technology mix: ICT development in South Africa will not happen without a strong role for Fixed broadband

Technology mix

**VIRTUALLY ALL OF THE WORLD'S  
INTERNET TRAFFIC IS CARRIED VIA FIXED  
NETWORKS**

**NO EXAMPLES OF COUNTRIES WHICH HAVE  
MOVED TO HIGH PENETRATION WITHOUT FIXED<sup>1</sup>**

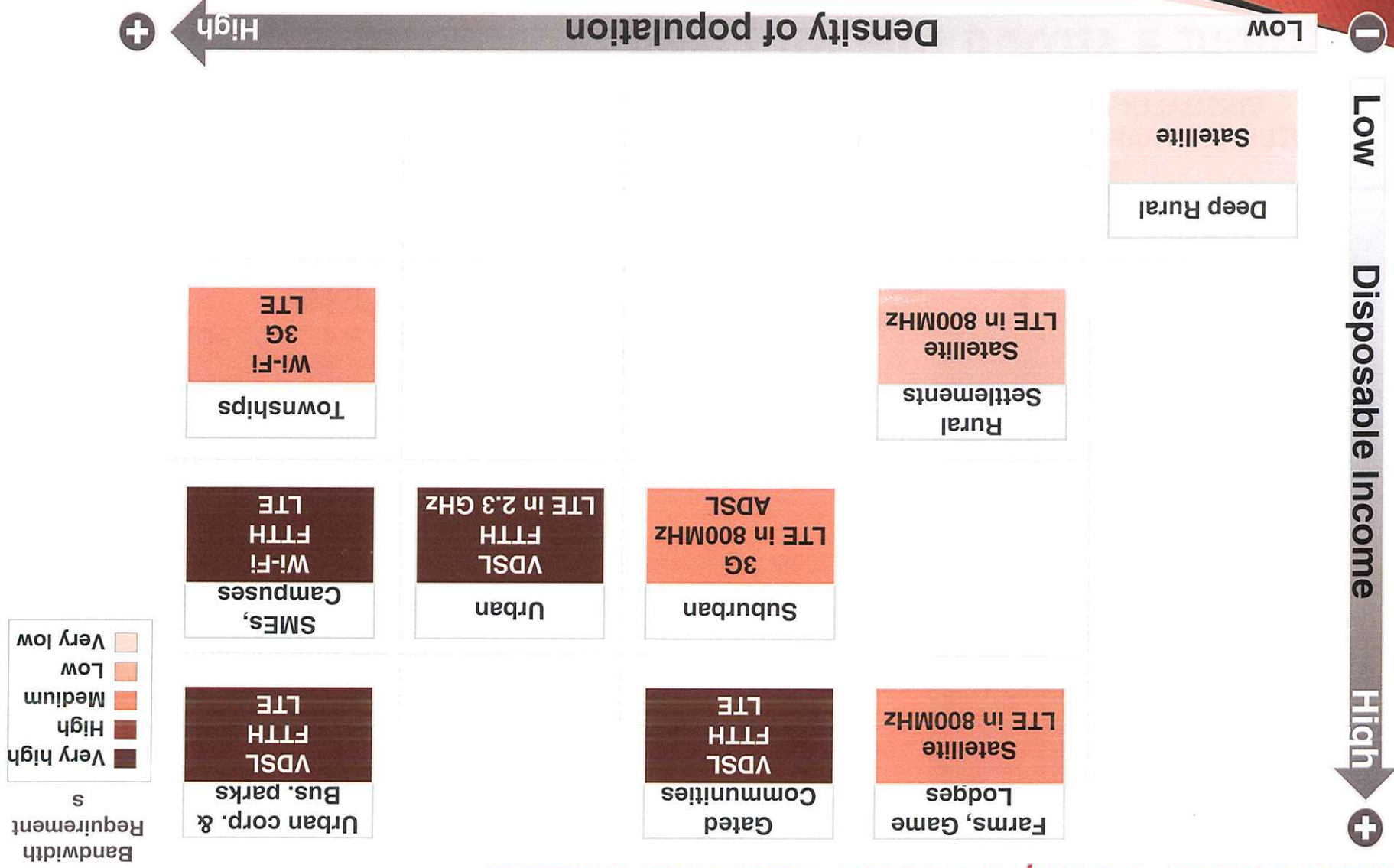
Global IP Traffic (Exabyte per month, 2013)



Note: 1. Figures per 100 inhabitants and may understate number who have access to fixed broadband – e.g.. because fixed is often a shared /household or business resource  
Source: CISCO VNI, 2013; Fixed including Managed IP, OECD (2012)

## Technology mix

Technology mix should be adjusted to the specific connectivity needs of different tele-density and socio-economic clusters



Cloud based services and interoperable systems will rely on fixed broadband NDP asked whether dominance of mobile broadband services is sustainable

# Telkom in the NDP

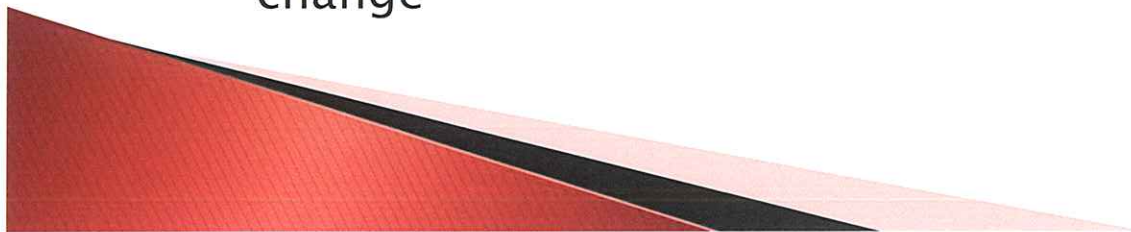
- ▶ Telkom mentioned many times in NDP, mostly as barrier to progress. More needed to be said about the state of competition and role of the state in a converged, multi-technology world
- ▶ But fixed line services will be critical to the success of SA Connect in a digital world
- ▶ Context: every fixed line company globally has to go thru major transition
  - Legacy technology (voice) to New technology (BB&cloud)
  - Emerging from monopoly status “phone company”
  - Low volume/high margin to high volume/low margin
  - Culture change – especially in customer service
  - In converged world, competing directly with firms that have inherently lower cost base and global presence

## Developments in Telkom: Are NDP concerns being addressed?

- ▶ Retail wholesale separation from April 1, 2014. We are considering deeper forms of separation. Why does this matter? It creates transparency and offers access to the network.
- ▶ Independent wholesale strategy in development that will see falling prices, improved bandwidth and value added products. Movement to wholesale open access model, but still being defined. This will be market transformative, but has many risks
- ▶ Addressing concerns about quality of fixed line service:
  - Annual capital investment over past decade (on balance sheet) = about R5.5 billion. About R250m invested annually to repair and replace stolen copper
  - There are almost 2000 exchange areas. At most 1 / 3 are profitable.
- This is being addressed through improved efficiency, customer service and technology
- Telkom is investing in a next generation fixed line network (NGN) in economically feasible areas. This is mixed copper and fibre. Recently announced plans for fibre to the home
- Telkom is undertaking a technology transformation in less profitable exchanges. To the extent that there is a concerted national broadband drive, technology choice would be impacted
- LTE - Telkom is rolling out the fastest broadband network in the country with 2.3GHz LTE, and seeks to supplement this with the use of High Demand Spectrum once allocated. Telkom is only operator without sub-Gig spectrum.

# Approach to public sector projects

- ▶ The NDP discussion on ICT is mainly located in the infrastructure chapter
- ▶ ....but ICT is different to other areas of infrastructure as it is *transformative technology* requiring substantial systems change within economic, social and governance systems to have any real impact.
- ▶ This requires effective piloting that is well monitored and evaluated for impact on efficiency, service delivery and outcomes
  - Home Affairs offers a good example of step by step systems change



# Emphasis on education

- ▶ Education should be top focal area as way of creating e-enabled population and also pulling people online.
  - Move away from “prestige” projects towards eco-systems with people at the centre
  - End-to-end connectivity
  - Cloud platform
  - Compelling content
  - Design of blended learning appropriate to the times
  - Low cost device strategy
  - Appropriate financing models (affordable and includes opex) Support and services
  - Monitoring and evaluation of roll out and of outcomes



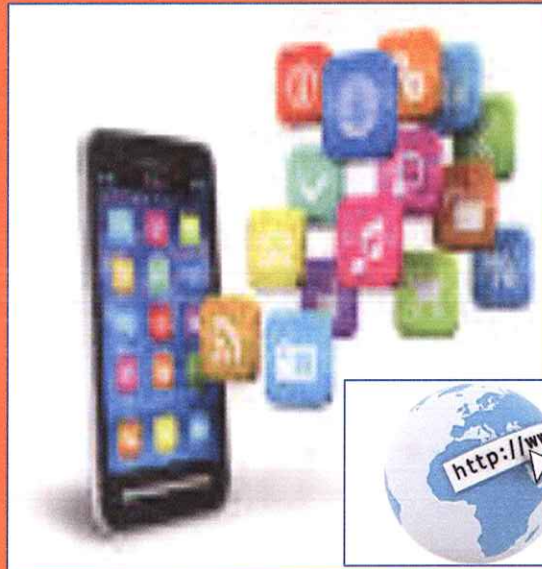
# Communications trajectory



Baby boomers  
& Generation X



Generation Y



# In conclusion.....

- ▶ ICT will play a critical role in reaching NDP employment, growth and poverty reduction objectives
  - ▶ Reach of broadband currently will entrench poverty and inequality in an increasingly digital world.
  - Business is enabled but Government and Citizens are not.
  - Government will have to play a leading role to pull citizens online.
  - SA Connect is comprehensive framework
  - But will not have desired impact unless public sector practices in spending and programme design are reformed
- ▶ Future of work is in services – population and economy must be prepared to participate and compete. *E-enablement of the population will be key to leverage opportunities*

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