Nadia Bulbulia

SA Broadband and Spectrum Challenges

Broadband Backbone and Spectrum Challenges

Provision of infrastructure toward achieving goal of universal access*

- Requires access to intl networks, national backbone and local networks
- Radio frequency spectrum a scare resource – usage informed by public interest
- Promote developmental goals (economic, employment, knowledge economy, e-govt, health and education are priorities)

*(ICT access point within 2km radius in sparsely populated area, DoC B'band Policy Document)

Spectrum Challenges in Africa

- Informa Telecoms estimates that by 2015, 20% of Internet traffic on the continent will be carried by cellular networks, compared to the global average of 3%
- Spectrum trading, use-it-or-lose-it conditions and wholesale and open-access networks will deliver the broadband growth governments in SA and sub-Saharan Africa (Convergence Partners, 2012)
- Demand for additional spectrum in sub-Saharan Africa is likely to be even greater than in high-income countries owing to the phenomenal mobile growth in Africa as wireless and mobile broadband only supplements wireline broadband in the first world (it is not their primary means of access to the Internet)

Stats, demand side data?

Minister states that there are no authoritative statistics on broadband penetration in South Africa. “We have thus decided to conduct a study into broadband coverage, penetration and speed in South Africa,” (Minister Pule, April 2012)

SA's Aggressive targets

The DoC together with the ICT industry, has committed to delivering 100% broadband penetration and delivering a million jobs by 2020...It is estimated to cost between 60 and R89billion to roll out b'band to all citizens (Minister Pule budget vote 2012).

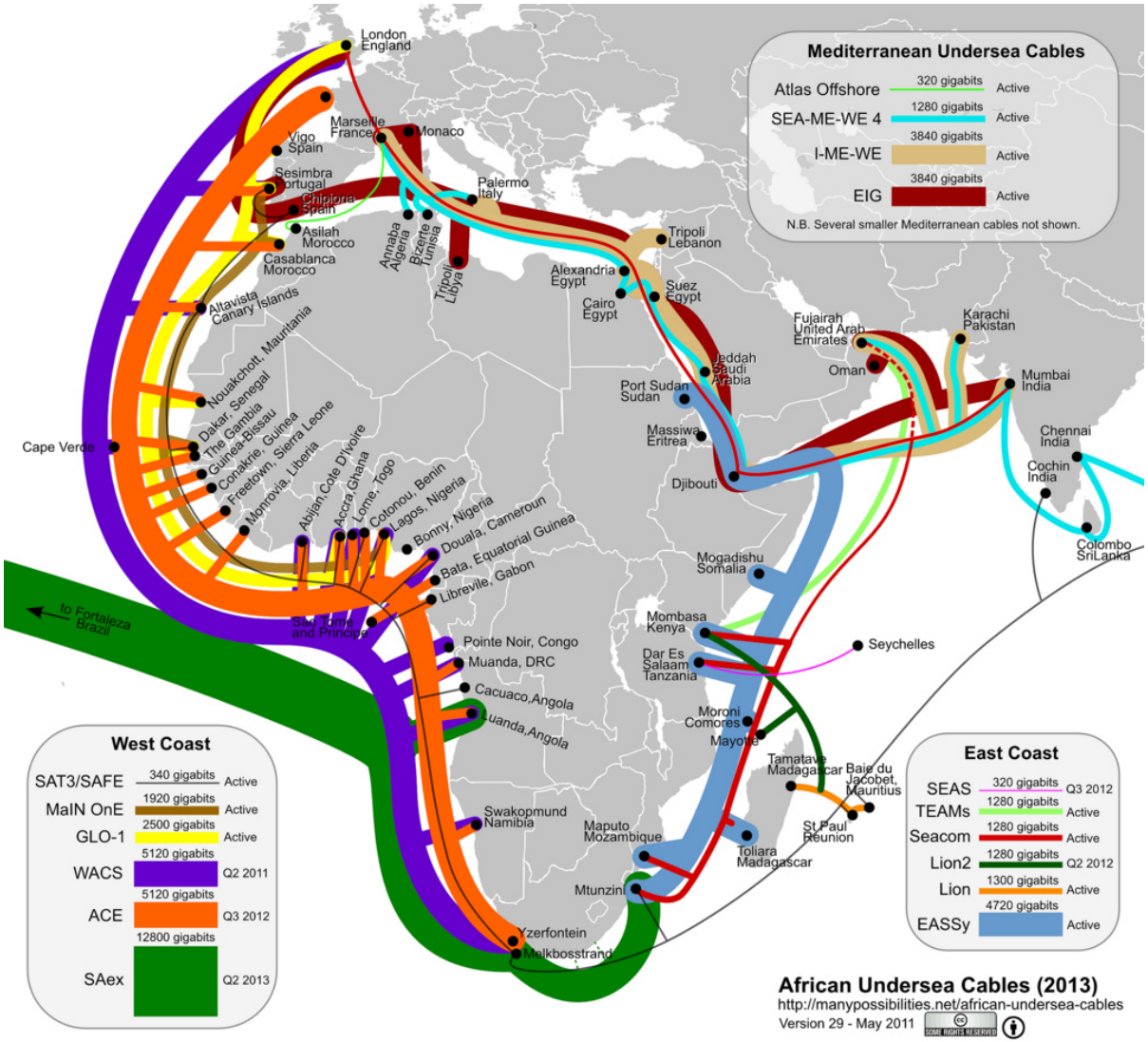
- Affordability and access remain a challenge in face of undersea cables – access to terrestrial backbone

Mobile not Fixed

- Research by World Wide Worx shows that the internet directly contributes around 2% to the South African economic output, over six million South Africans have access to internet…growth attributed to the increase in mobile broadband users of smartphones.
- Mobile broadband grew by 31% in 2011 to reach 4.2 million people in the country
- Estimates put broadband penetration at 2% for fixed-line broadband, around 4% for mobile PC broadband.

- However broadband prices remain very high

Undersea Cables



Enabling regulatory environment

- Infrastructure based competition (self-provide)
- Service based competition
- Physical infrastructure sharing – Cost reduction, environmental impact, efficiency (facilties leasing)
- Alignment of policy objectives across national, provincial, local govt, SOE's, & private sector
- Open access and non-discriminatory regime
- Subsidise infrastructure roll-out (through USF)

Digital Dividend Spectrum

- Prime spectrum around the 700MHz and 800MHz bands -particularly suitable for the deployment of high-speed broadband services using technologies such as LTE and 4G
- to spur new competition in the broadband market, drive down prices and improve market penetration

Spectrum Deployment

- Efficiency in allocation (use it or lose it)
- Universal service objectives to be met
- Competitive bids – technology neutral
- Spectrum Auctions – SA withdrew
- Spectrum trading – to achieve broader development goals (defence departments)
- Re-farming
- Spectrum Management Agency

Regulatory issues

- Public interest and efficiency debate
- Market efficiency - affordable access
- Consider artificial scarcity – barrier to entry
- SA redress challenges – premium on price of capital
- Balance next generation networks and national objectives
- Spectrum usage fee regime

SA…toward Spectrum Auction

- The process for the licensing framework and regulations for spectrum on demand started in November 2006
- ICASA issued a position paper and draft regulations in July 2009 and hearings took place in October 2009
- May 2010 ICASA published the regulations and issued an invitation to apply (ITA) for the 2.6 and 3.5 GHz spectrum
- The deadline for applicants was 30th July 2010
- The granting methodology would follow an Auction approach, however timelines and details of the process were excluded from the ITA
- ICASA stood firm on a 30% BEE/HDI shareholder requirement
- ICASA criticised and DoC lobbied – subsequently the entire auction process was withdrawn….still no movement in 2012 (6years later)

Research and critical analysis…

Audits of spectrum usage below 1GHz required to inform decisions about the size of the digital dividend…

- "Spectrum management in South Africa remains significantly under-developed and will remain so until this fundamental uncertainty has been dealt with" (ISPA)
- Paucity in local research on spectrum issues
- Delays, bottlenecks, policy and regulatory uncertainty
- Universal service and development goals on hold
- Renew investor confidence – projections, scenario planning, pro-competition, incentives
- Advocacy, think tanks
- Policy intervention – roadmap for implementation
- A single national open access wireless network

The future…..is it here yet?

- A vision of the evolution of Broadcasting

“ Anything, anytime, anywhere…” Choice Mobility Interactivity Platform independence Better quality - HDTV More realism- 3D TV

(Source: Communications research centre, Canada)

Digital Broadcasting Policy -DTT

- Ministerial Digital Broadcasting Advisory Committee-2002 (SADIBA 1997)
- SADC switchover 2013, ITU deadline 2015
- Digital Dzonga – policy,standard-DVB-T2, 'go-digital'
- What are the issues?
  - Affordability / Universal Access
  - Telcos and b'casters at odds over USF funds
  - Dual illumination – costs (incumebents vs new entrants)
  - Sentech (national carrier – requires ZAR1.8 billion)

- High definition, digital television broadcasting is no longer a privilege of those who are well-off. In 2005 the International Telecommunications Union announced that countries in Africa and other regions must move their television broadcasting to a digital platform. Since then, the Department of Communications has been working hard to ensure that all the necessary work is done to enable a smooth transformation of our broadcasting.

(slides that follow are from webpage of SA's godigital - www.godigital.co.za)

Why digital TV in SA?

- The main aim is to bridge the so-called 'digital divide' (the gap between people with effective access to digital and information technology, and those with very limited access or none at all).
- This will redress the unequal acquisition of skills needed to make the best use of this technology to improve one's knowledge and quality of life.
- It will also help to grow the economy, e.g. Set Top Boxes (required to receive a digital signal) will be built in South Africa and will therefore create jobs. The introduction of digital television in our country also opens up a host of other economic opportunities for the ICT sector and the local content and creative industry.
- SOS – scheme for ownership support for poor families who cannot afford a STP *(source: go digital website)*

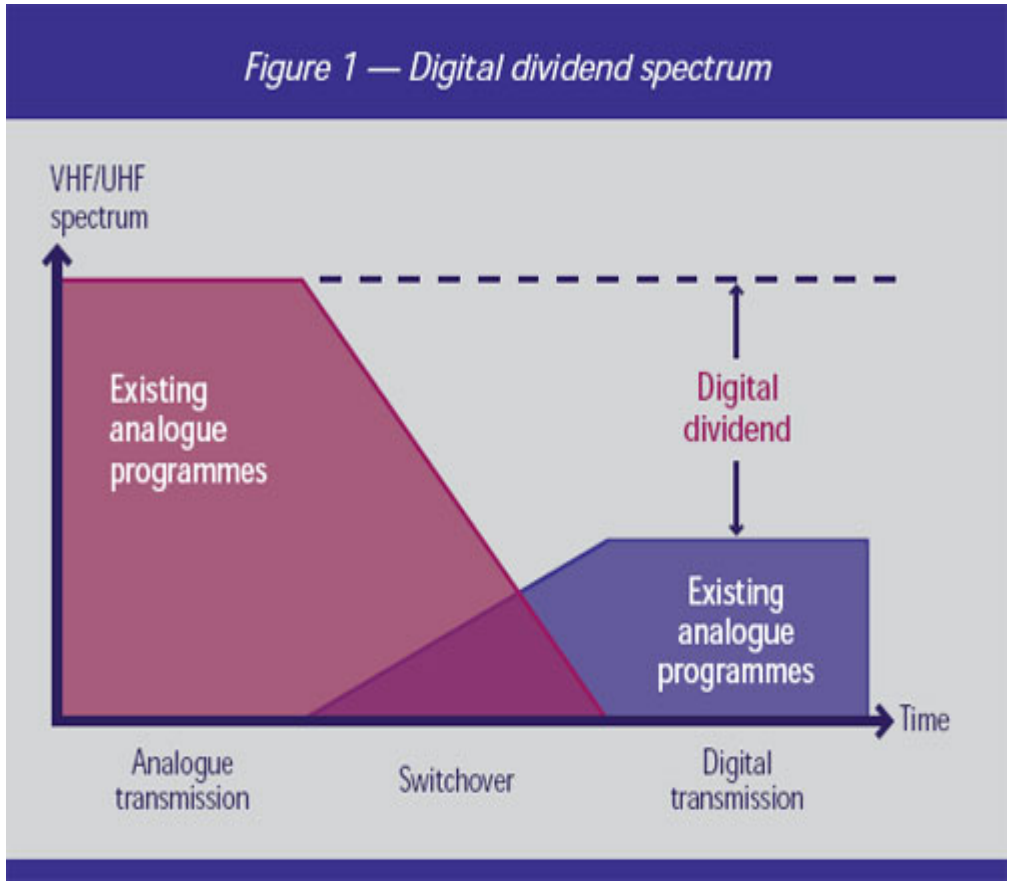
Digital Dividend spectrum

- The digital dividend spectrum is located between 200 MHz and 1 GHz. These frequencies possess superior signal propagation characteristics to those at, for example, 2.4 GHz.

- This would mean that less infrastructure would be required to provide wider mobile coverage, all resulting in lower costs for communication services, especially in rural areas.

- What are the policy objectives in each country?

Digital Dividend Spectrum (Source: ITU)



How can the dividend be used?

- Innovative services, from improved and new interactive television broadcasting to mobile communications and wireless broadband Internet access.
- Only a fair and well-balanced distribution of this spectrum among different information and communication technologies will deliver the full social and economic benefits of the digital dividend, thus maximizing its value for all users. This can only be achieved by efficient and effective spectrum management. (ITU)