



SUBMARINE CABLES FOR AFRICA

Byron Clatterbuck – SEACOM CEO

SEACOM TRANSFORMED INTERNET CONNECTIVITY IN AFRICA IN 2009



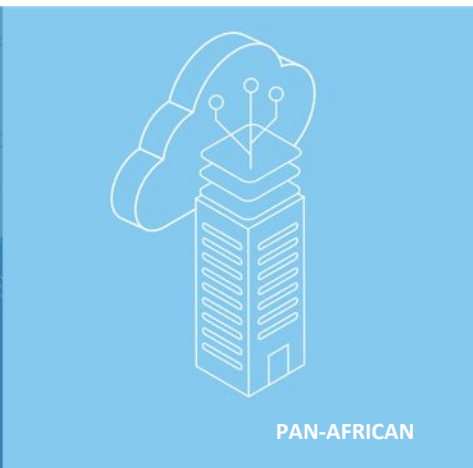
'09: SEACOM at launch

- Privately funded by largely African investors with funds raised in 2007
- System launched in July 2009
- Added 80G of capacity to data-starved markets
- Allowed "open access" to all ISPs, MNO, and regional telcos



'12 – '14: SEACOM Service Provider

- Invested in WACs to create "Ring around Africa"
- Grew to Africa's largest meshed IP network
- Largest host of OTT & CDN traffic
- Largest peering relationships of all African carriers
- Carrier neutral cloud platform



PAN-AFRICAN

'14 – '18: SEACOM Business

- Launched expansion into the enterprise market in South Africa and then Kenya
- Delivery of scalable bandwidth low latency internet experience to enterprises
- Deployment of last mile metro and long-haul terrestrial fibre
- Acquisitions to expedite growth



'19 & beyond: SEACOM - Market Consolidator

- Further investments to drive capacity and network diversity
- Targeted acquisitions to expedite growth
- Enterprise service expansion in well known markets
- Invest in further lit fibre deployment to grow scale

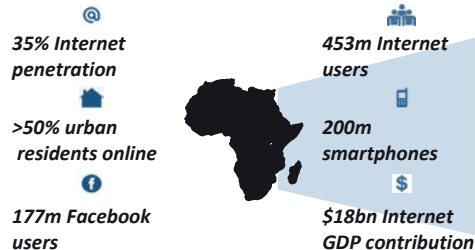
AFRICAN MARKET TRENDS

Internet penetration up from 16% in 2013 (167m users) to 35% in 2018 (453m users), largely due to mobile and smartphone penetration growth. Fixed-line penetration remains very low.

Key Points

- The African fibre and enterprise ICT market developing like global markets
- CDNs and global content owners/operators are moving content and infrastructure to Africa
- Smartphone usage grows rapidly, bottlenecks continue to fixed fibre services into the wider market
- More core infrastructure is rolled out, regional connectivity is developed, African market usage accelerates
- Requirements for diverse and affordable international connectivity increases as Africa is integrated with the digital world

Africa in 2018

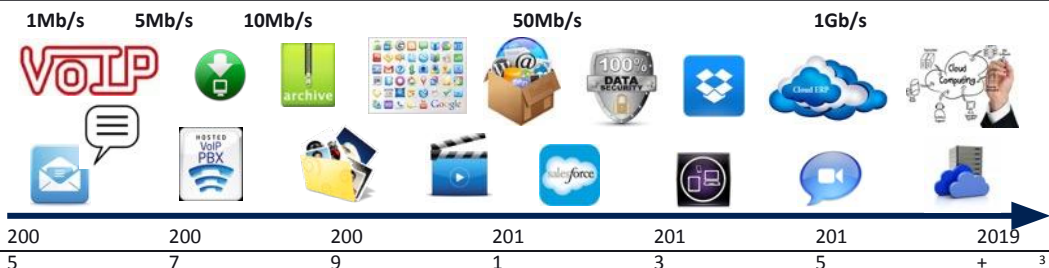


Source: McKinsey, InternetWorldStats, GSMA

Africa in 2025



Increased staff consumption as well as adoption of Enterprise Services drives an increase in capacity to offices

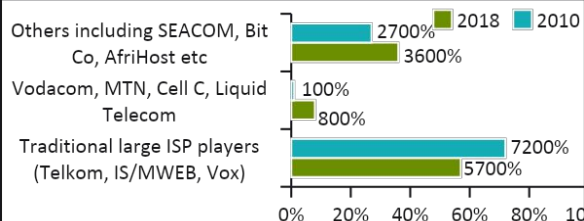


SOUTH AFRICAN DATA MARKET IS LARGE AND MOVING FROM TRADITIONAL LARGE FIXED-LINE PLAYERS TO DYNAMIC CHALLENGERS

| BMI-T Data | Market Today (2018) | Market Forecast (2023) | Products |
|------------|---------------------|------------------------|-------------------------------|
| Internet | ZAR 12.2 Billion | ZAR 14.7 Billion | Internet Access IP Transit |
| Other Data | ZAR 13.0 Billion | ZAR 13.8 Billion | MPLS/Ethernet VPN |

Changing nature of competition

Indicative market share shift in SA retail fixed* broadband, 2010 vs. 2018



Last 5 years

- Fibre disrupts the market
- Aggressive price/performance shift
- Rapid growth in fibre penetration off low base

Today

- Pricing stabilised
- Services create customer stickiness
- Penetration <30% in SME & upper LSM segments

Next 3 years

- Further market penetration
- Growth will come mainly from next customer tier (lower ARPUs)

Note: *Fixed broadband (DSL, fibre and leased line), business and home markets combined. Retail ISP share (not underlying physicals).

CURRENT KEY SOUTHERN AFRICA SUBSEA CABLES

Existing “Ring around Africa”

Three Key High-Speed Subsea Routes

Mix of Consortium and Private Builds

1 SEACOM Cable System

2 WACS

3 TEAMS

4 EASSy

5 Main One

● POINT OF PRESENCE (PoP)
Transmission

● POINT OF PRESENCE (PoP)
Transmission and IP

● POINT OF PRESENCE (PoP)
IP/MPLS

● MEET ME POINT (MMP)

— SEACOM NETWORK

..... SEACOM PARTNER NETWORK

The map is illustrative only and is subject to change.



SEACOM

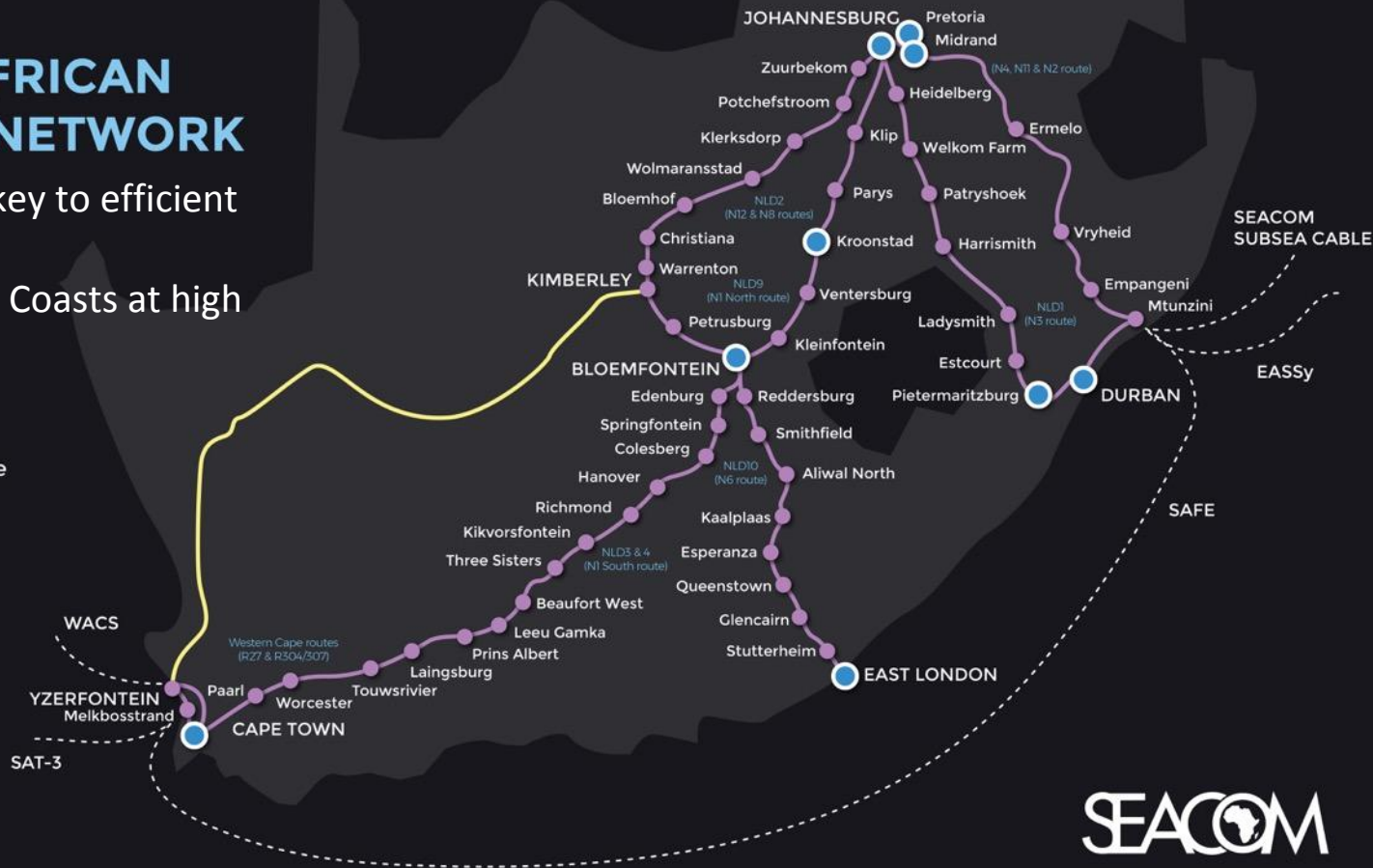
SOUTHERN AFRICAN SUBSEA MARKET DYNAMICS

- **Upgrades continue**, with incremental upgrade costs continuing to decline and drive down overall average cost per MB
- Most capacity utilized on the “Super Highways” into South Africa, Kenya, and Nigeria
- Content and Cloud Service Providers rolling out more infrastructure and investment in Africa
- Increase in African regional traffic
- Prices for IP Transit at **US\$3/MB** in South Africa for medium volume commit
- IRU 10G at under **US\$1m** South Africa to Europe



OUR SOUTH AFRICAN TERRESTRIAL NETWORK

- Terrestrial networks key to efficient resiliency
- Connect East to West Coasts at high speed and low cost



ISSUES FACING SUBSEA INFRASTRUCTURE IN AFRICA

- Cloud demand is increasing
- Existing subsea cables are upgrading more frequently, and will reach their ultimate capacity in a few years
- Existing cables are ageing
- Only three key routes, two on East Coast and one on West
- New subsea cables take years to construct, activate and reach the market
- Cable investments are highly capital intensive and cost hundreds of millions of US dollars
- Terrestrial infrastructure within Africa is still developing



SUBSEA INFRASTRUCTURE INVESTMENT MODELS

- Consortium
 - Lots of investors (carriers, ISPs, MNO, etc)
 - Lots of bureaucracy
- Private
 - High risk
 - Highly agile
- Hybrids
 - Shared risk
 - More agile

Subsea Cable Infrastructure investment is usually a “build vs buy” decision

POTENTIAL NEW AFRICA SUBSEA CABLES

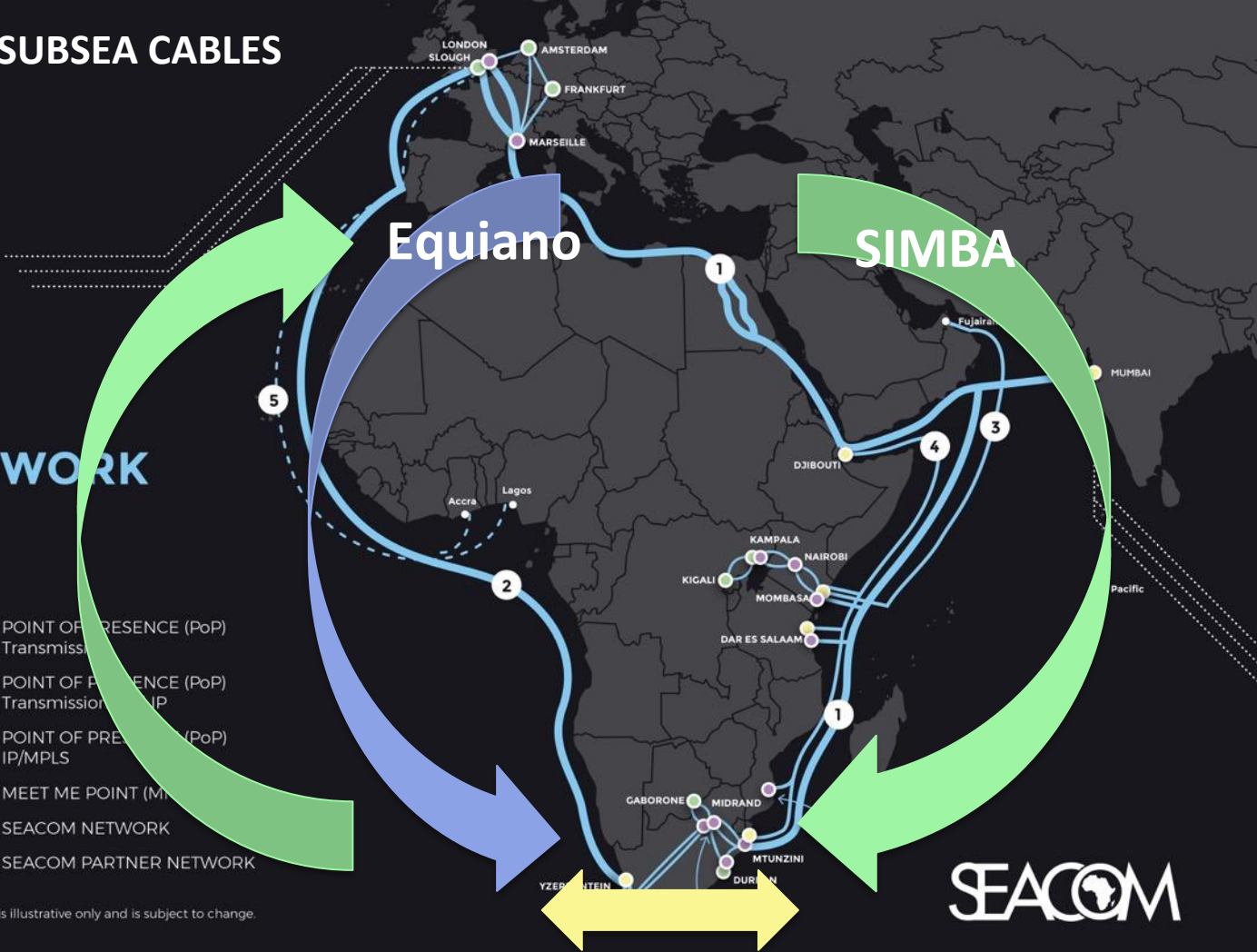
High Fibre Count
Open Access
Hybrid Models

OUR GLOBAL NETWORK

- 1 SEACOM Cable System
- 2 WACS
- 3 TEAMS
- 4 EASSy
- 5 Main One

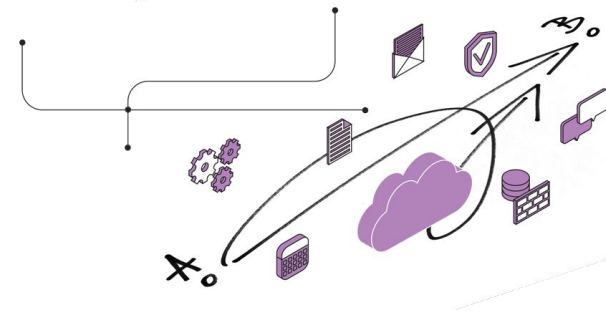
- POINT OF PRESENCE (PoP) Transmission
- POINT OF PRESENCE (PoP) Transmission IP
- POINT OF PRESENCE (PoP) IP/MPLS
- MEET ME POINT (MMP)
- SEACOM NETWORK
- SEACOM PARTNER NETWORK

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SUMMARY

- Huge investment in infrastructure is required to develop Africa's economies and communications infrastructure
- Majority of this is required in domestic terrestrial, cross-border, metro access, radio access, data centers, etc
- Subsea infrastructure is a very small part of what is required
- More capacity and more diverse routing in subsea infrastructure is needed, and can kick start other investments
- "Cross Africa" network rings need to develop (along with highways and railways)





THANK YOU