

**Building the African Internet**



# AfPIF - Presenting the business case for African Operators

Accra, Ghana - 09.08.2011

Willem **Marais**  
Head of Sales - Southern & West Africa



# The True Size of Africa

A visual comparison of the true size of Africa. Prepared by Rob Riddell

in 1991, 2000, 2010 and 2020. The map shows the size of Africa in relation to the world's population.

## Top 100 Countries

100 countries (Percentage of World Total)

### COUNT\*\* AREA

China	9,397
USA	9,397
India	9,397
Mexico	9,397

Papua New Guinea	452
Sweden	441
Japan	378
Germany	357
Norway	324
Italy	301
New Zealand	270
United Kingdom	243
Nepal	147
Bangladesh	144
Greece	132
<b>TOTAL</b>	<b>36,102</b>
<b>AFRICA</b>	<b>36,221</b>

In addition to the well known social issues of literacy and illiteracy, there also should be such a concept as "ignorance", meaning insufficient geographical knowledge.

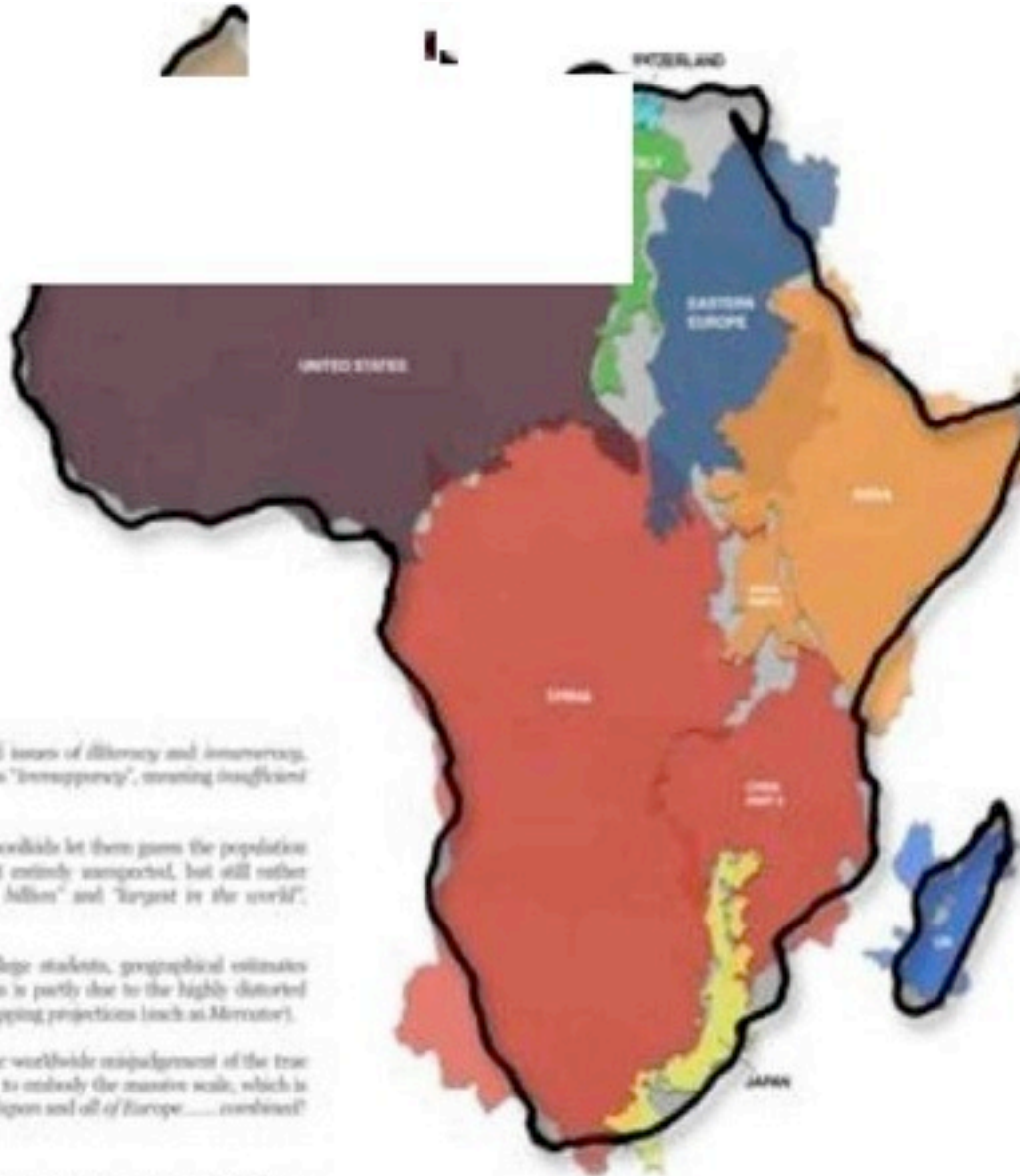
A survey with random American schoolkids let them guess the population and land area of their country. Not entirely unexpected, but still rather surprising, the majority chose "2-3 billion" and "largest in the world", respectively.

Even with Asian and European college students, geographical estimates were often off by factors of 2-3. This is partly due to the highly distorted nature of the predominantly used mapping projections (such as Mercator).

A particularly extreme example is the worldwide misjudgment of the true size of Africa. This single image tries to embody the massive scale, which is larger than the USA, China, India, Japan and all of Europe.....combined!



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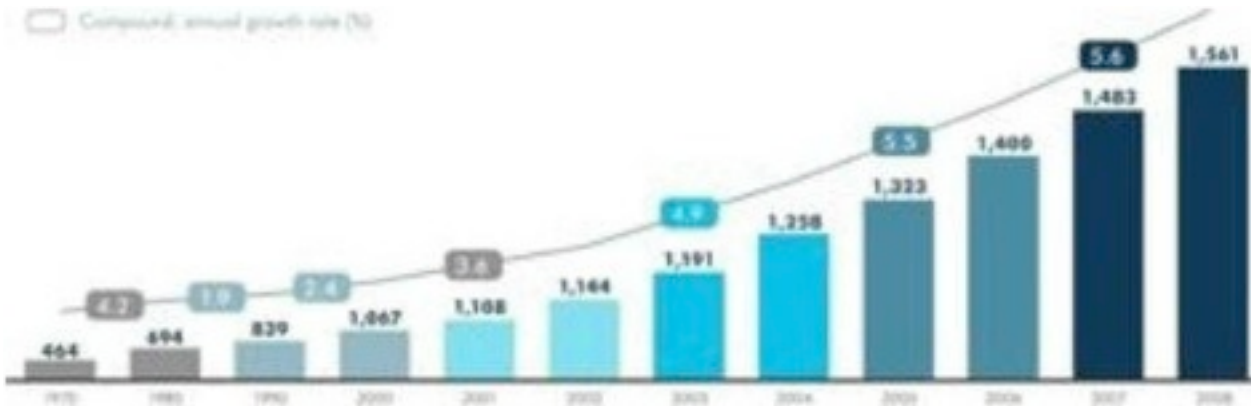
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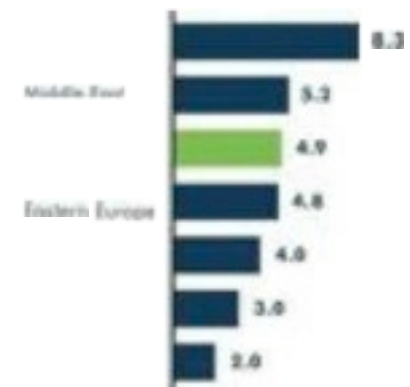
# Africa is the world's third-fastest growing region



African **annual** real GDP

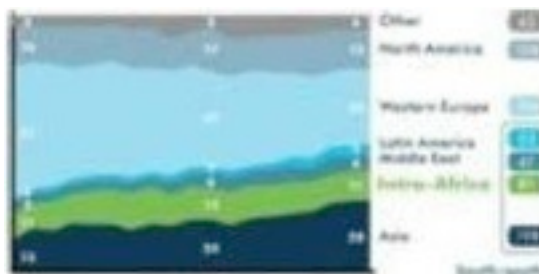


Compound **annual** real GDP **growth**



Trade with other developing countries accounts for more than half of African trade

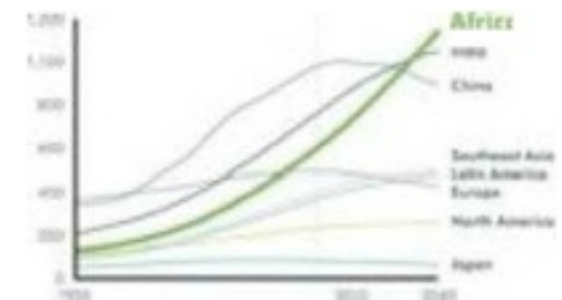
in 1 20 for trading 2



The rate of return on foreign direct investment in Africa is higher than in other developing countries



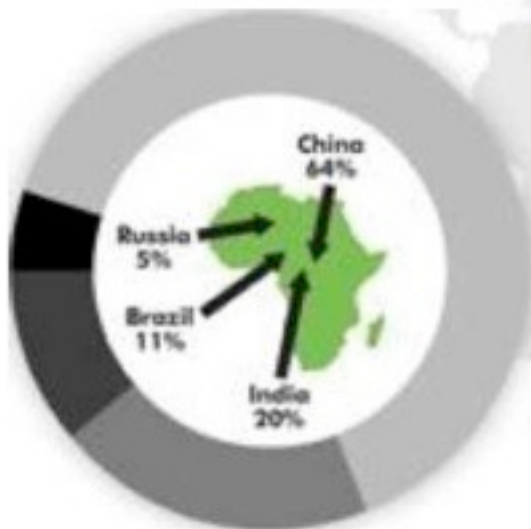
Africa's workforce will become the world's largest by 2040



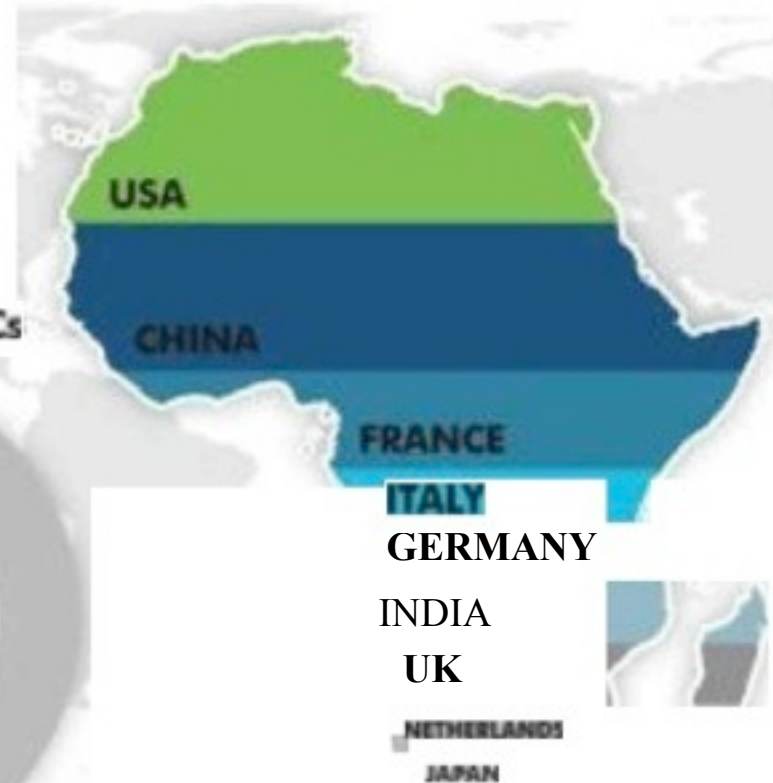
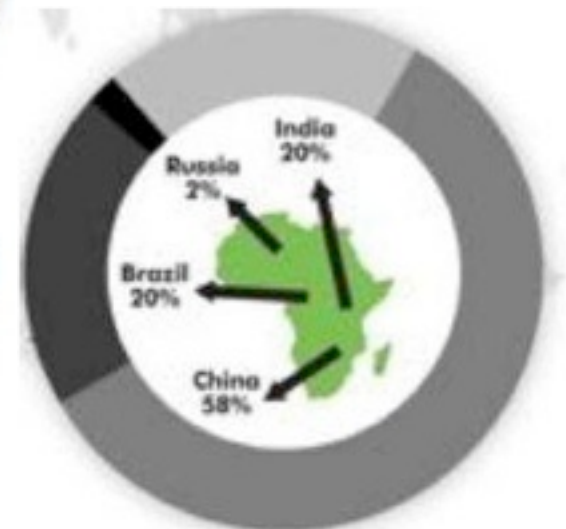
## Africa Trade - the new frontier



IMPORTS FROM BRICs



EXPORTS TO BRICs

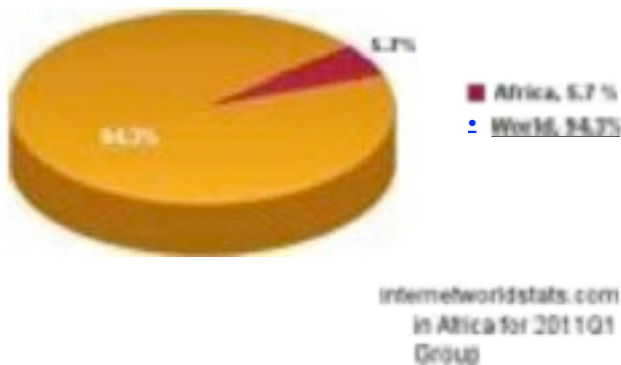


TOP 10 BILATERAL TRADERS WITH AFRICA

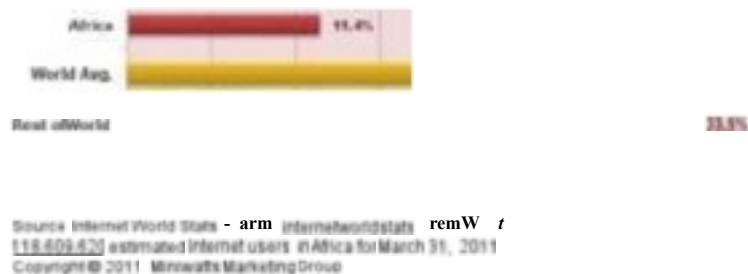
## Internet penetration in Africa

The Internet penetration in Africa is low in comparison to the rest of the world

**Internet Users in Africa**  
**March 31, 2011**



**Internet Penetration in Africa**  
**March 31, 2011**



### What affects Internet penetration

Internet penetration is dependent on

- Last mile connectivity
- Domestic connectivity
- Regional connectivity
- Global connectivity

### Impact of Internet penetration

- Access to information
- Information portability
- Channel to Pan-Africa & Global market
- Transaction

Putting the content in the cloud



The content for Africa should be served through an African Internet cloud

### **Content in the cloud**

Giants Google and Akamai are targeting Africa

The local African markets are starting to generate content

Corporate expansion into Africa brings with it growth of content in Africa

Companies reduce costs by sharing infrastructure and leveraging services in the cloud

Individuals demand access to cloud services such as social media

Mobile phones and Apps are creating demand



What does this mean?



There are many opportunities in the African market

### **Content in Africa**

The opportunities in Africa are in the following sectors

- Datacenters
- Hosting (virtual operators)
- Local connectivity
- International connectivity
- Internet Exchanges
- Hardware supply



To plot a course into tomorrow, we need to understand the past and ongoing challenges



### Infrastructure

Regulatory and government policy delay applications  
Bureaucracy slowing rate of change

Last mile connectivity limits access to end users

Many unconnected rural regions

Large land mass requiring many kilometers of cabling

### Regulatory environment

Wireless network interference limits bandwidth and reduces quality  
Copper theft and Fiber cuts on terrestrial networks deny service

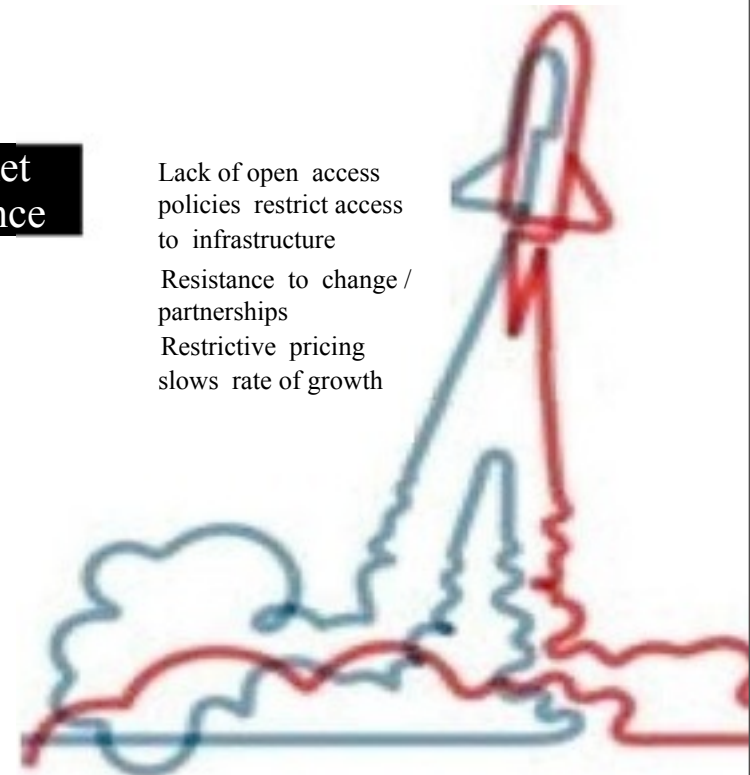
### Market resistance

Lack of open access policies restrict access to infrastructure

Resistance to change / partnerships

Restrictive pricing slows rate of growth

### Reliability



# Vision of the future



## Historical

International capacity + National backbone  
+ last mile + VAS = too expensive



Social integration

Technology  
convergence

Regional economic  
integration

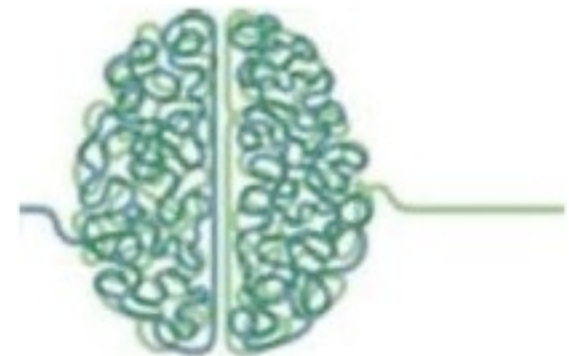
Service  
delivery

Geographical  
reach

## Future

Converged solutions based on  
partnerships = IaaS, PaaS & SaaS

Converged services  
Global communities

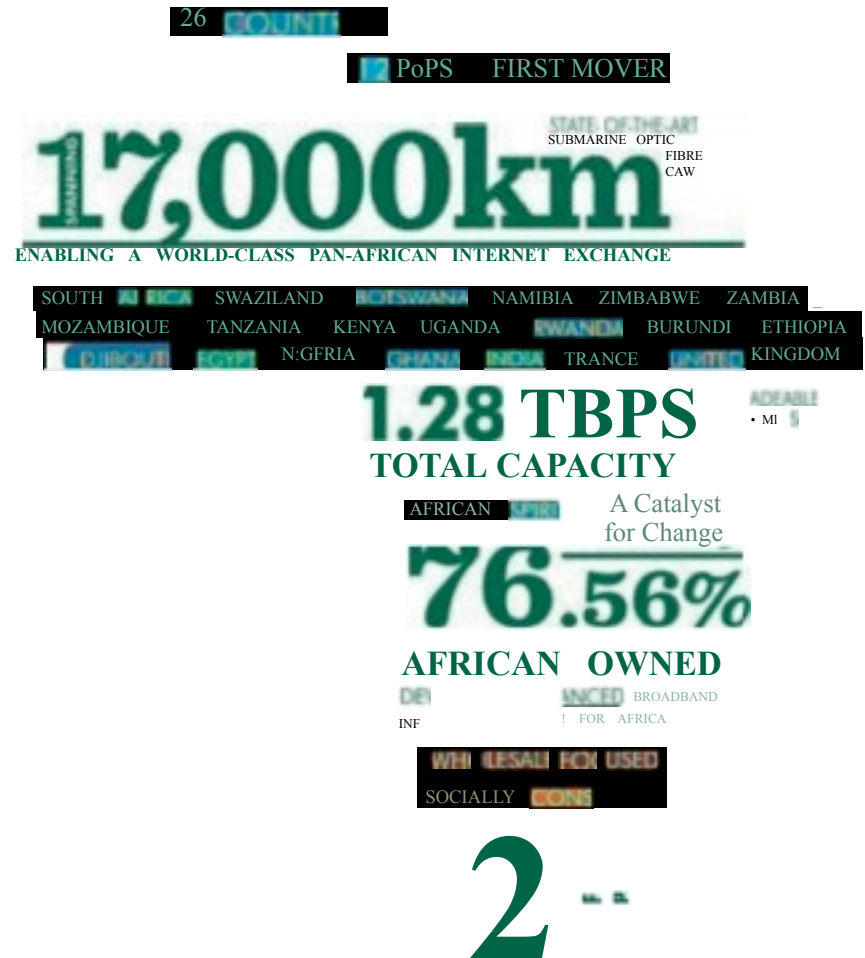


# SEACOM overview



## Building the African Internet

- Privately owned, autonomous and carrier neutral, wholesale provider of restorable bandwidth from Africa to Europe & Asia
- Fully funded & majority African owned (76.25%) - all infrastructural and commercial benefits get recycled into Africa
- Build on the principles of open and equitable access to broadband through PoP-to-PoP
- now a pan-African ICT enabler driving the development of the African Internet
- Facilitate the development of high volume, low cost market - encouraging new industries to emerge & driving the ICT sector
- Compliment mobile and fixed-line national carriers by providing low cost high capacity bandwidth and additional redundancy options



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MainOne

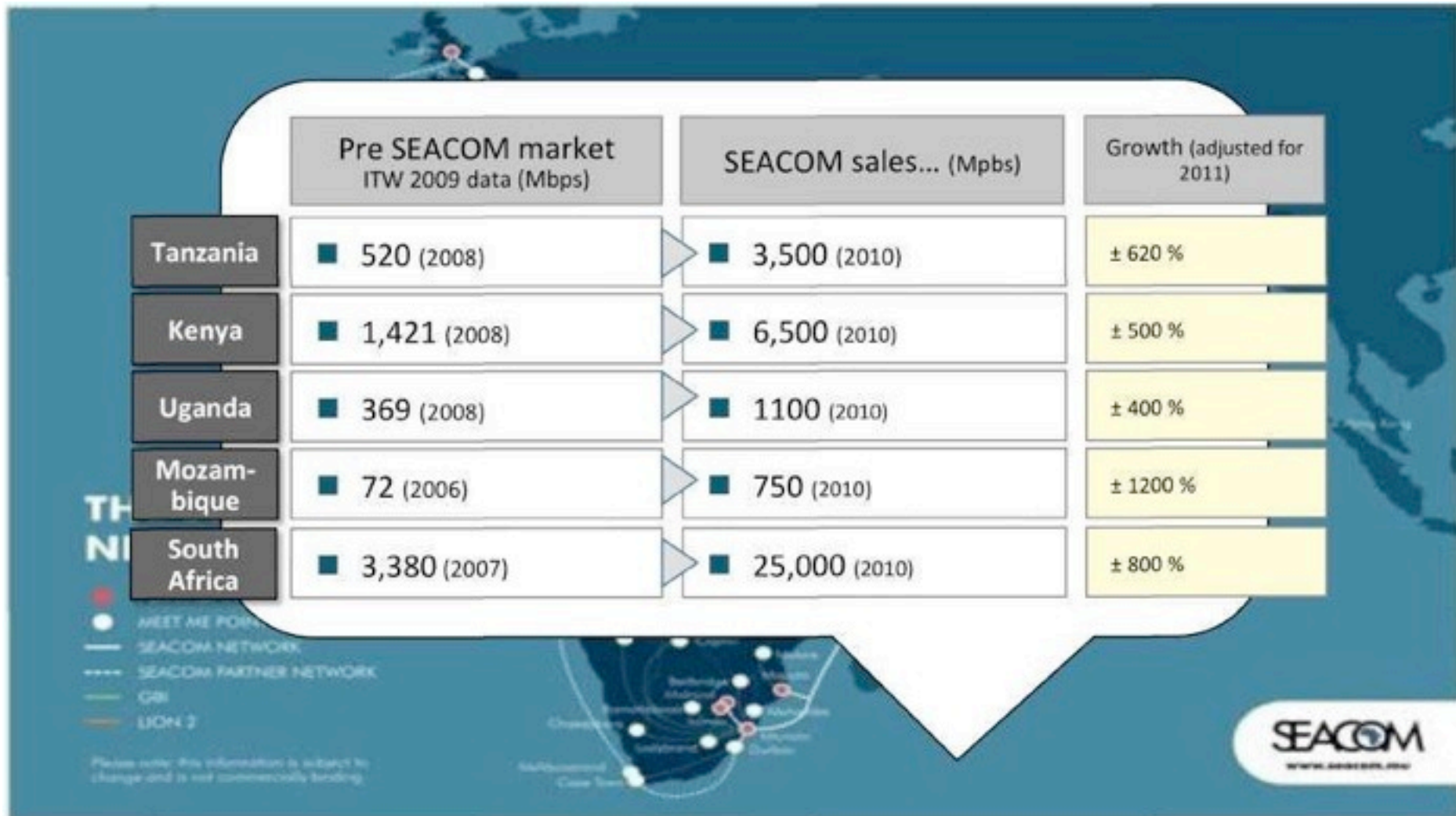
# THE SEACOM NETWORK

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SEACOM NETWORK  
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SEACOM

# SEACOM impact on capacity growth



SEACOM is founded on an understanding of market evolution and continues to yield Africa "Firsts"

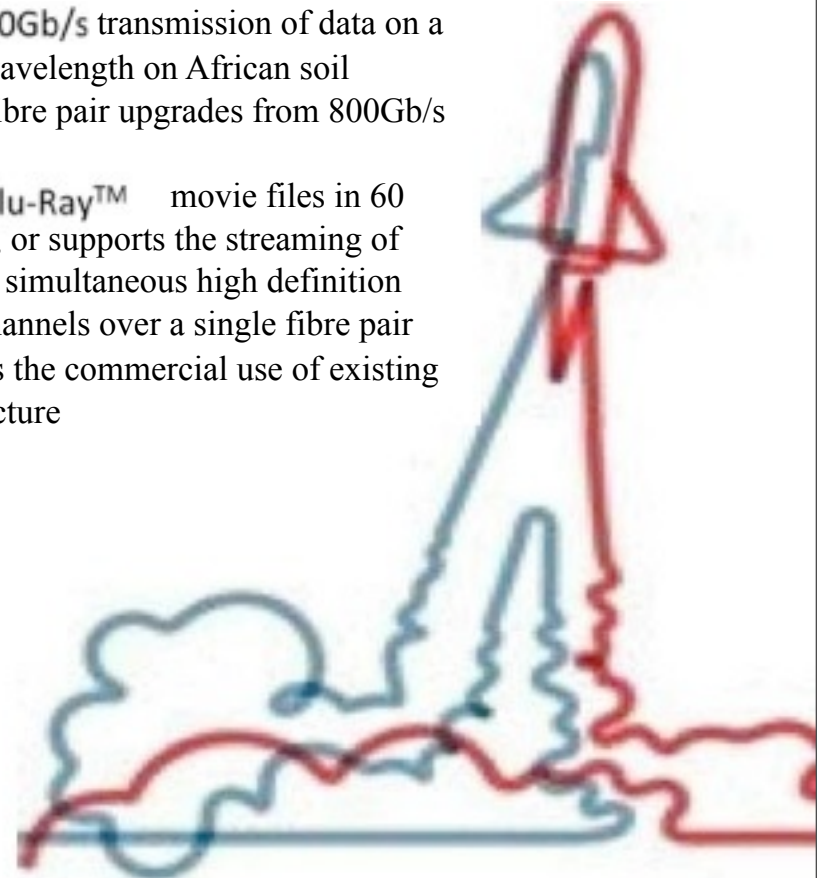
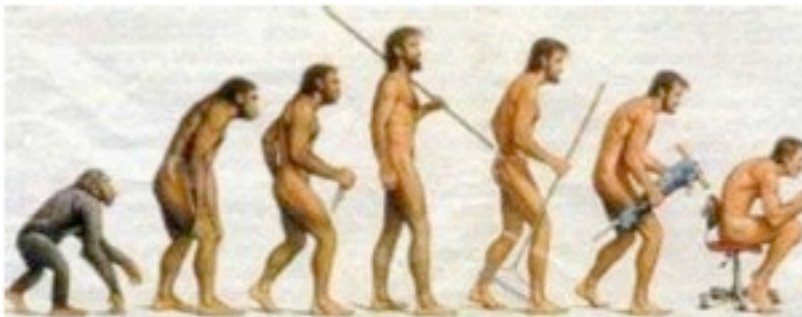


### A history of "Firsts" in Africa

- First submarine cable on the East coast of Africa
- First privately-owned submarine cable to land in Africa
- First truly, open access, non-discriminatory wholesaler of PoP-to-PoP bandwidth services
- First Pan African IP platform

### *Current: Global first 5x100Gb/s transmission of data on a single wavelength*

- First **100Gb/s** transmission of data on a single wavelength on African soil
- Single fibre pair upgrades from 800Gb/s to 8Tb/s
- 2,400 **Blu-Ray™** movie files in 60 seconds, or supports the streaming of 320,000 simultaneous high definition video channels over a single fibre pair
- Extends the commercial use of existing infrastructure



# SKA signs MoU with SEACOM on capacity support



## ENGINEERING NEWS

8th August 2011

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PROJECTS

SKA

inks MoU to provide support for SKA project

... of the country's £1.1 billion SKA radio telescope project

... 100 Gbps

... to be 100 to 1000

... for science and research ...

PDF RESEARCH REPORTS

Research South Africa's Science Hardware and SKA South Africa's 50th anniversary (20th October) features the second round of the international competition for the SKA radio telescope project. The project is a major milestone in the country's science and research history.

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Siemens

Cyber Junkyard

Play the game. Save the planet.

Imperial

Hough

016 366 1960

Building News

SEACOM launched a new suite of products positioned to provide increased **wholesale** internet access



### Technical Features of the new product set

Packet based network

Increased bandwidth granularity

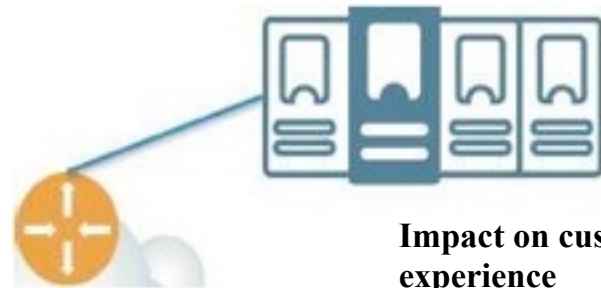
- Security features to protect against denial of service attacks

Content cached (stored) on the African continent

Able to support virtual networks across multiple African countries

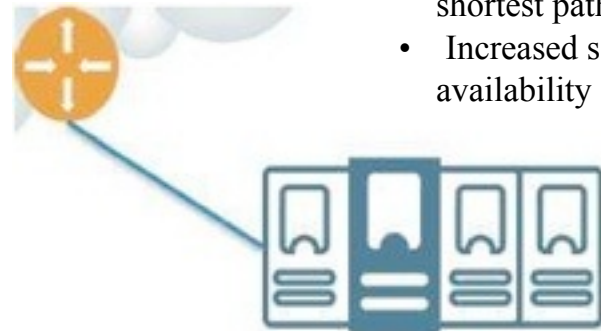


### SEACOM IP NETWORK



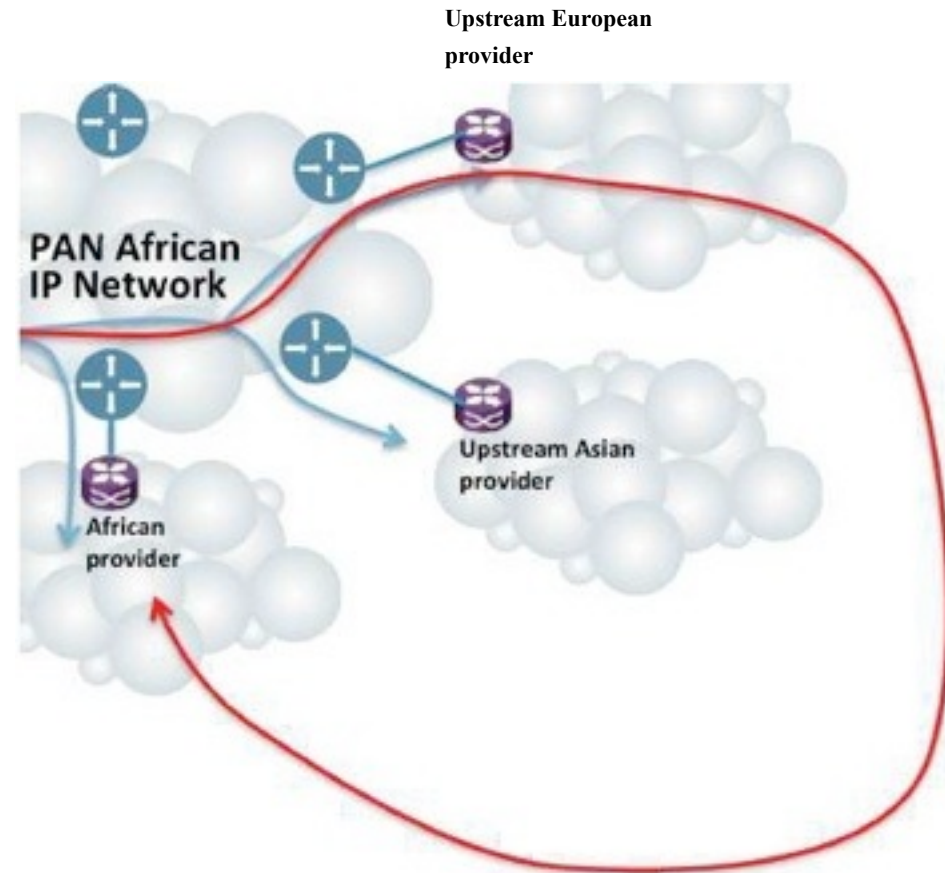
### Impact on customer experience

- Increased flexibility and scalable capacity and services
- Direct inter Africa routing using the shortest path
- Increased service availability



## Latency & shortest path routing

The quality of the experience can greatly improve with good widespread coverage



### East to West Africa connectivity

Estimated RTD via London – 320ms  
Estimated RTD via Southern Africa - 85ms

### South to West Africa connectivity

Estimated RTD via London – 310ms  
Estimated RTD via a direct route – 35ms

### Poor inter-Africa connectivity

Connecting via London means that even neighboring countries can have an RTD of more than 300ms

# SEACOM network latency- PoP-to-PoP service offer



	Dar es Salaam	Maputo	Nairobi	Kampala	Kigali	Djibouti	Mumbai	Marseille	London
Maputo	22	22	27	17	26	7			
Dar es Salaam	54	54	59	49	58	39	32		
Kijitonyama	57	57	62	52	61	42	35		
Mombasa	60	60	65	55	64	37	37	6	9
Nairobi	66	66	71	61	70	43	43	12	15
Kampala	72	72	77	67	76	50	50	19	22
Kigali	80	80	85	75	84	57	57	26	29
Djibouti	66	66	71	61	71	43	43	12	15
Mumbai	107	107	112	102	111	92	85	51	54
Marseille	204	204	209	199	208	191	183	148	151
London	228	228	233	223	232	215	206	171	174

Current focus is on expansion into region



Achieved

Targeted

# Maintaining a commitment to Education and Research, SEACOM has grown the number of NREN's served



## South Africa: TENET



82 campuses across 44 interconnected institutions

10 Gbps of subsidized capacity

76% subsidized rate

Reduced the cost of international bandwidth for Universities and Research Institutions in South Africa by subsidizing up to 76% of the costs

## Kenya: KENET



220 000 students, 30 000 educators, across 54 interconnected institutions

155 Mbps of subsidized capacity

Experienced 30% reduction in cost of noncommercial international capacity

Now able to support pan-African and International research collaboration



## Mozambique: Universidade Eduardo Mondlane



- Reliant on expensive and unreliable satellite capacity
- 155 Mbps of subsidized capacity
- Now enjoy access to **e-learning** and high-speed Internet connectivity
- Negotiating with the Ministry of Science and Technology to supply MoReNet with subsidized capacity

## Tanzania: University of Dar Es Salaam



- 155 Mbps of subsidized capacity
- Increased international capacity access by 1000%, making UDM the 1st truly "wired" University in East Africa
- Negotiating with TERNET to provide subsidized capacity to other Tanzanian Universities



Thank You



GO >



SEACOM South Africa  
2nd Floor, **Imola** Building  
The Campus, 57 Sloane Street  
Bryanston, Johannesburg

(T) +27 11575 0171  
(E) [info@seacom.mu](mailto:info@seacom.mu)  
(W) [www.seacom.mu](http://www.seacom.mu)

## BUILDING THE AFRICAN INTERNET

pan-African ICT enabler that is driving the development of  
has been **Dual** on the backbone of open-access and equitable

SEACOM financed and developed the  
southern African countries, bringing a  
since July 2008, SEACOM has seen n  
more than **10** fold increase in bandwidth penetration in several of  
Africa's most underserved nations

As a CM  
provide high quality cost-effective

open access points of presence and global partnerships to  
connectivity around the world **ttACOU** web provides

SHOW MORE >

## LATEST NEWS

(PUBLISHED)  
**SEACOM expands**  
Pan-African network  
Access to five additional countries and

## OUR NETWORK



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ADDISON**  
VISIT THE KNOWLEDGECENTRE >



**SEACOM LIVE**

POSTED 2 HOURS AGO Via Twitter  
Cheaper broadband pricing from  
possible? <http://mzan.sip56N> >

POSTED 1 DAY AGO Via Twitter  
Mecer Xpress Slate enters **tablet PC**  
market. Includes agroscope, which  
allows for motion gaming >