A continental shift in global internet access in Africa

By António Nunes 3 Nov 2017

In 1994, there were more telephone lines in New York City than there were in the entire continent of Africa. Ove the next two decades, digital transformation in Africa dramatically picked up speed.

> *The future is already here, it's just unevenly distributed. - William Gibson*

Today, the continent is teeming with pioneers building 'digital bridges' within and between villages, countries and continent as well as connecting Africa to the global economy and research communities.

Inasmuch as this may be true, many parts of Africa continue to play catch-up with the rest of the world in terms of the control and directness of subsea fibre optic connectivity.

'Africa first' shift

This challenge appears to be a colonial artefact of the global growth of the internet as the continent has arguably faced mo geographic, political and economic barriers to its development than other regions.

Fortunately, this is about to change; representing a symbolic 'Africa first' shift for the continent in terms of its self-determination and autonomy in the telecommunications arena. For countries in sub-Saharan Africa, it presents a massive opportunity to leapfrog other countries. For regions outside of the continent, it will also offer a more efficient, alternative ro for burgeoning internet traffic across the world's largest continent.

Currently, the West Africa Cable System (WACS) is the most important conduit for data for the West Coast of the contine Managed by a 12-member consortium, it provides carrier-level services to operators in sub-Saharan Africa across a doze countries, including 12 landing points in Africa and three in Europe (The Canary Islands, Portugal and England). Running more than 14,000 km – starting in Yzerfontein (South Africa) to London (UK) – WACS is an essential artery for the digital connectivity and economic development of countries connecting to the cable.

But in order for internet traffic to travel between Africa and the Americas (the largest centre for the production and aggregation of digital content and services), it must first go through Europe, a rather inefficient route, and one might even say unnecessary if needing to cross the Atlantic ocean.

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Three continents interconnected

With the South Atlantic Cable System (SACS) – expected to be completed in 2018 – the first direct link between Africa an South America will be created. A subsea cable extending more than 6,500 km between Brazil and Angola, SACS will be 100% owned and managed by an African company, Angola Cables. Combined with Monet*, a cable system to be complet this year and operated by Angola Cables, Algar Telecom, ANTEL and Google, SACS represents a paradigm shift for Afric and the Americas in terms of connectivity and collaboration.

Currently, the latency, or the time lag between a data packet being sent and received, on subsea fibre optic cables systen between Angola and Brazil is 350 milliseconds, due to the trafficking of internet via Europe. With SACS, this will be reduc fivefold to approximately 63 milliseconds. In effect, this will create a 'continental shift' in terms of internet access to and fro Africa, bypassing Europe. Once operational, an African company will be fully responsible for the digital exchange betwee Africa and the Americas.

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Together with growing terrestrial fibre optic systems, mobile technologies and satellite services, such a direct connection between will also improve other countries' (in the Middle East and Asia, for example), access more parts of the world, eith as sources of content or investment destinations for Africa-based data and communications services. Hubs for telecommunications innovation have blossomed on the continent, and with the completion of SACS and Monet, further expansion of data centres and internet Exchanges Points (IXPs) in Africa is expected.

Beyond connectivity

Telecommunications and digitalisation are some of the most powerful tools for empowering countries and economies. If or looks at mobile telephony, it has spread further and faster in Africa than any other part of the world. According to GSMA, global organisation representing nearly 800 mobile operators and hundreds of mobile technology companies, the doubling mobile data usage increases annual growth in GDP per person by half a percentage point.

Consider some of the following facts about the mobile market in sub-Saharan Africa:

- 420 million unique mobile subscribers exist in the region, with an average penetration rate of 43% as of the end of 2016.
- By 2020, the number of mobile broadband connections will more than double to reach half a billion, nearly two-thirds the region's total connections.
- Smartphone connections have doubled over the past two years to nearly 200 million, accounting for a quarter of mob connections.
- Mobile data traffic is forecast to grow twelvefold across Africa as a whole over the next five years.

Sub-Saharan Africa now accounts for nearly a tenth of the global mobile subscriber base and is expected to grow faster th any other region over the next five years. With an improved connection between the Americas and Africa, complemented a strong mobile industry on the continent, the social and economic development of the regions is expected to improve in lin with such growth.

Today, mobile connectivity has become the main platform for innovation and the driving force for greater inclusion, with about 270 million people in the region accessing the internet through mobile devices. Last year, mobile technologies and services generated $110bn of economic value in sub-Saharan Africa, equivalent to 7.7% of GDP. As local and global connectivity continues to improve, mobile's contribution to GDP is expected to increase to $142bn, equivalent to 8.6% of GDP, by 2020.

Research and education

The telecoms/mobile ecosystem in the region is attracting talent and investment to African tech companies, as well as linki up academic institutions and research and education (R&E) organisations in other parts of the world.

As trans-Atlantic connectivity improves with the completion of SACS and Monet, universities and other learning communiti in African, North American, and Latin American countries are increasingly collaborating to improve knowledge sharing an research. Examples include the Florida International University's Center for internet Augmented Research and Assessmer (CIARA) that recently expanded its development of a next-generation internet network to include Africa.

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With a project called the AmLight Consortium – a multi-institutional project composed of NPOs, universities and regional R networks – CIARA promotes the development of advanced network applications, content, and services between the Ameri and Africa. Over the next 10 years, the Amlight Consortium will dramatically increase the use of Americas-Africa cable systems for research and education applications, including the establishment of a high-performance network link between the AMPATH IXP in Miami, and Angonix, an IXP in Luanda, Angola (owned by Angola Cables).

This infrastructure will connect with the Atlantic Wave-Software Defined Exchange in Sao Paulo, Miami, Boca Raton, and Atlanta. The collaboration aims to provide efficient peering between national R&E Networks and communities of interest through a distributed open software define exchange model.

What the ongoing development of Africa depends on

> *"The ongoing development of Africa depends on the degree to which it can globally integrate with the digital economy."*

With a growing appetite for data and mobile devices requiring broadband connectivity (supported by next-generation international networks), the continent requires investment in its telecommunications capacity in order to support socio-economic advancement.
With the imminent launch of a trans-Atlantic cable system between Angola and Brazil, sub-Saharan Africa is poised for a paradigm shift in connectivity. It will also be a profound and symbolic step toward the continent taking the driver's seat in expanding the region's economic opportunities and determining its digital destiny.

**Monet is a 10,556km cable system between Santos and Fortaleza in Brazil, and Boca Raton in the USA.*

Resources:

- Angola Cables submarine cables routes
- Animated gif. of the history of African undersea cables

ABOUT THE AUTHOR

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