



Socio Economic Impact of Mobile Broadband in Kenya

Shola Sanni, Senior Policy Manager, Africa



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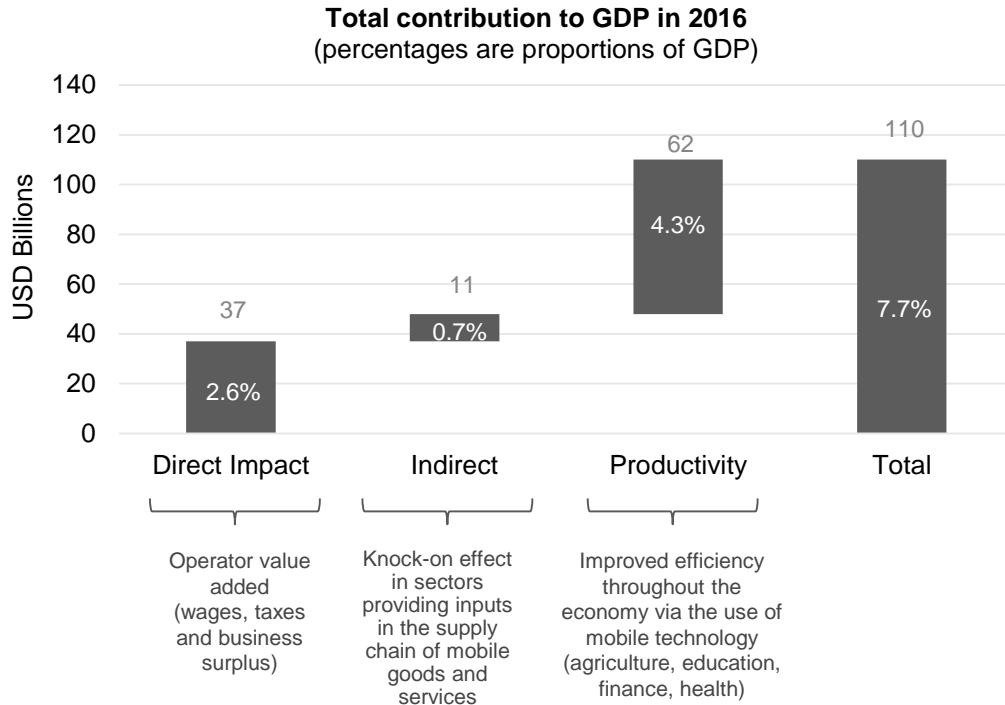
GSMA Working Groups
provide frameworks and
standards in commercial,
operational and
technical matters that help
maintain and advance
mobile industry ecosystems



8.1
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Economic impact of mobile in Sub-Saharan Africa



The mobile industry accounts for around 7.7% of GDP in Sub-Saharan Africa, taking into account direct, indirect and productivity effects.

Going forward, we expect the economic contribution of the mobile industry in the region will increase in both absolute and relative terms - from \$110bn to \$140bn USD in 2020 (8.6% of GDP).

This forecast relies on a favourable macroeconomic environment and on a moderate expansion in demand and supply in the mobile market. The impact could therefore be even higher if network coverage and mobile adoption is accelerated, especially of new 4G services.



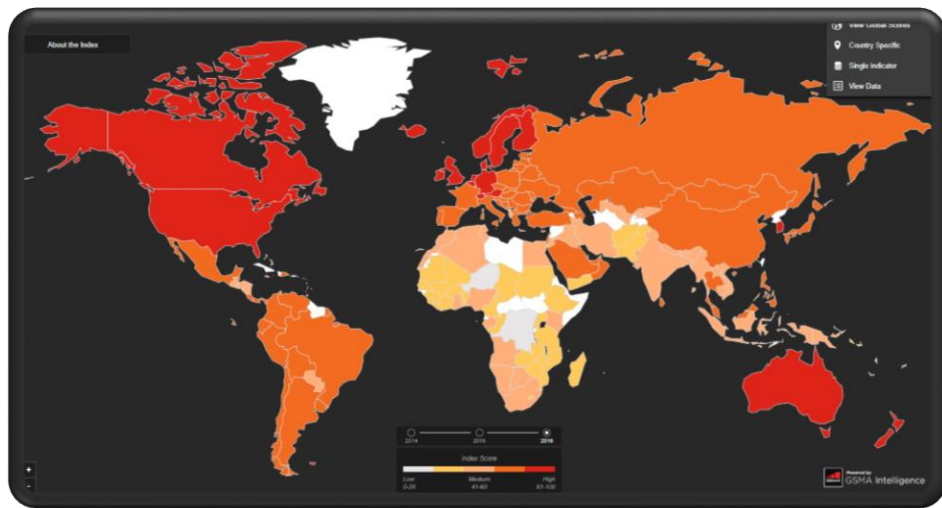
Mobile market in Kenya: key metrics

	Mobile subscribers market penetration	Mobile internet subscribers penetration	Proportion of 3G Connections	Proportion of 4G Connections
Kenya	54%	52%	22%	2%
Burundi	35%	11%	7%	0%
Rwanda	52%	24%	31%	11%
South Sudan	17%	9%	21%	0%
Tanzania	42%	29%	37%	2%
Uganda	40%	25%	19%	4%
Sub-Saharan Africa	43%	26%	31%	2%

Source: GSMA Intelligence. Data as of Q4 2016

- The adoption of mobile technology in Kenya has advanced more quickly than other countries in East Africa as well as most other countries in the Sub-Saharan African region
- Mobile internet adoption in Kenya is higher than all other Sub-Saharan African countries
- However, the **majority of mobile users in Kenya are on 2G technologies** and so are currently not benefiting from the services enabled by 3G and 4G technologies

Enabling Mobile Internet Connectivity in Kenya



In addition to the economic benefits of mobile, there are also significant private and social benefits:

- Private benefits - easier communication and information, convenience, free digital products and new forms of leisure.
- Social benefits – improved access to finance, education, health and public services.

To achieve the ambition of providing universal access to mobile and internet services, it is critical to understand the key barriers to adoption across countries. Governments, operators and donors can then develop appropriate policies and initiatives to accelerate take-up.

The GSMA has developed a tool specifically for this purpose – the Mobile Connectivity Index.

<http://www.mobileconnectivityindex.com>



Mobile Connectivity Index

Mobile Connectivity Index



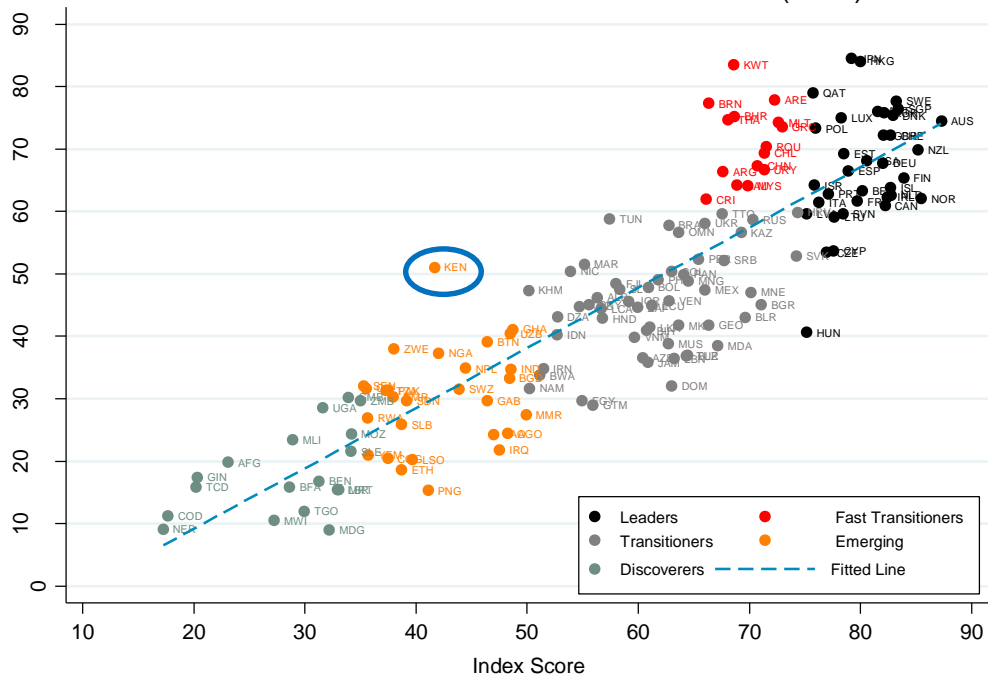
Infrastructure	Affordability	Consumer readiness	Content
Mobile infrastructure Network performance Other enabling infrastructure Spectrum	Mobile tariffs Handset price Income Inequality Taxation	Basic skills Gender equality	Local relevance Availability

39 Indicators

- **What:** The GSMA Mobile Connectivity Index measures the performance of 150 countries against four key enablers of mobile internet connectivity
- **Why:** Support the efforts of the mobile industry and the wider international community to deliver on the ambition of universal internet access.
- **How:** The index is built up through 39 specific indicators feeding into 13 dimensions which are aggregated to give a score for each of the four enablers. **Scores fall within a range of 0-100.**
- The results and the data are available on our web tool – www.mobileconnectivityindex.com – and all scores at the country and regional level can be viewed from 2014 to 2016

Key Findings from the Index

Mobile Internet Penetration and Index Scores (2016)



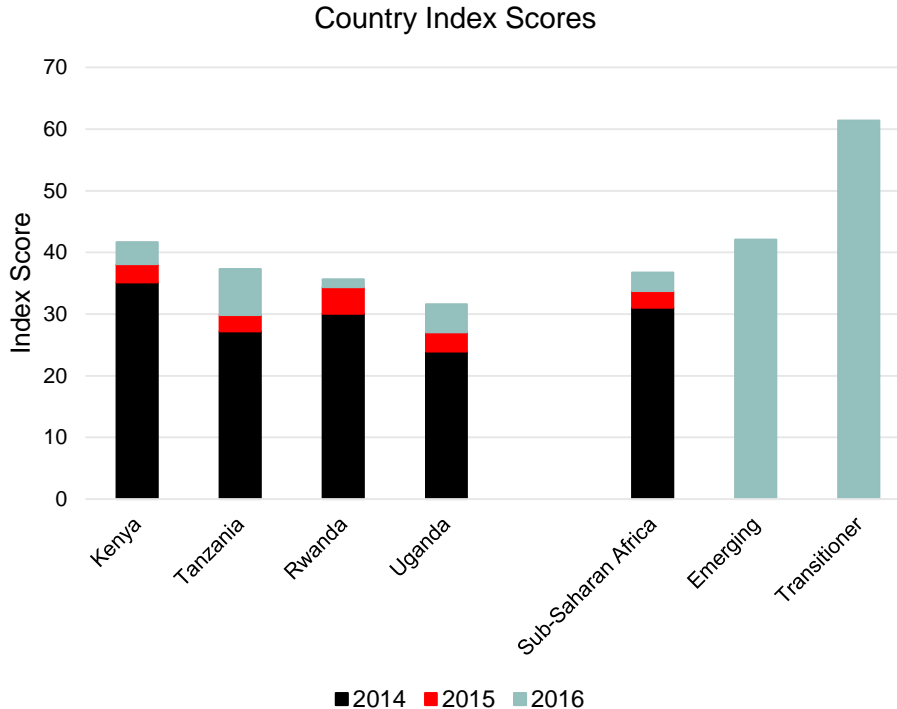
There is a strong positive correlation between index score and mobile internet penetration. The index is therefore an effective tool to identify priorities to drive mobile internet adoption.

There are no short cuts to creating a strong enabling environment for mobile internet adoption. Countries generally need high performance across all four enablers.

Evaluate countries in the context of their clusters and assess performance over time. The exact scores and positions can be subject to a small margin of error and many countries score very closely. *Kenya is currently in the emerging cluster.*

- **Leaders:** High index scores and mobile internet penetration.
- **Fast Transitioners:** Mobile Internet penetration scores similar to the Leaders but achieved with lower index scores.
- **Transitioners:** Typically score well on 2-3 enablers
- **Emerging:** Typically score well on 1-2 enablers
- **Discoverers:** Need to work on all four enablers

Results for Kenya and East Africa



- Kenya's Index score is the highest in East Africa and above the Sub-Saharan Africa average. It has shown good improvement over time, especially in 2016
- Kenya's current score is in line with the Emerging cluster, while the previous slide showed that it had achieved greater mobile internet connectivity than similar countries
- In order to enable greater connectivity - particularly for 3G and 4G technology - and move to the next Transitioner cluster, it needs to address a number of enablers, particularly around: network quality; affordability for those on low incomes; digital skills, and; creation of content in more local languages.
- We explore each of these further in the following slides



Enabler Analysis

	Kenya	EAC Average	Sub-Sahara Africa Average	Emerging Average	Transitioner Average
Index	41.66	36.54	36.73	42.11	61.39
Infrastructure	34.33	33.01	32.13	36.28	52.03
Affordability	49.52	41.21	43.19	50.09	62.11
Consumer	61.48	55.53	49.25	51.20	71.81
Content	28.81	24.06	28.84	36.31	62.74

- In both absolute and relative terms (relative to both the Emerging cluster and the next Transitioner cluster), Kenya's score for **Consumer Readiness** is higher than the other enablers, followed by **Affordability**, Infrastructure and then Content
- However, as shown in the following slides, within these enablers there are significant differences across the dimensions, for example:
 - The Consumer score is primarily driven by Kenya's high score for gender equality, whereas its score for skills is much lower
 - On infrastructure, while Kenya scores lower than the Emerging average, there are dimensions where it actually performs better (for example network coverage)

Infrastructure Analysis

	Kenya	EAC Average	Sub-Saharan Africa Average	Emerging Average
INFRASTRUCTURE	34.33	33.01	32.13	36.28
Network Coverage	56.14	52.37	45.97	52.81
Network Quality	21.93	27.80	25.00	27.97
Enabling Infrastructure	32.18	27.89	32.61	38.44
Spectrum	22.39	16.88	21.57	21.77

- Compared to most other countries in Africa, **network coverage is fairly widespread in Kenya, with more than 90% 2G coverage and more than 80% 3G coverage**. 4G is also starting to be rolled out, reaching more than 20% by the end of 2016.
- However, network quality in Kenya (measured using download and upload speeds and latencies) is poorer than the EAC and SSA average (where it is also relatively low)
- Kenya's score for enabling infrastructure – for example access to electricity and IXP and server development - is in line with other African countries but lower than the Emerging cluster average.
- **The availability of spectrum is above the EAC, SSA and Emerging cluster average**, partly due to the availability of digital dividend spectrum (e.g. in the 800MHz band) which many other countries are yet to release for mobile services

Affordability Analysis

	Kenya	EAC Average	Sub-Sahara Africa Average	Emerging Average
AFFORDABILITY	49.52	41.21	43.19	50.09
Mobile Tariffs	41.21	32.37	27.67	35.65
Handset price	70.66	56.57	51.68	65.21
Taxation	69.65	49.54	62.52	60.67
Income	28.51	22.86	27.01	33.82
Inequality	37.56	44.72	47.10	55.13

- Mobile internet services and internet-enabled devices are generally much more affordable in Kenya than most other African countries.
 - Entry-usage (users that require 100MB of data per month): plans are available in Kenya for around \$1, which is **less** than averages in EAC (\$1.50) and Sub-Saharan Africa more widely (\$3).
 - Medium-usage (500MB of data per month): plans are available for around \$2 - **less** than EAC (\$35) and SSA (\$5.50) averages
 - High-usage (1GB per month plus voice & SMS): plans are available for around \$10 - **less** than EAC (\$13) and SSA (\$30) averages
 - Basic internet-enabled devices: these are available for around \$30 – **less** than EAC (\$35) and SSA (\$45) averages
- **Affordability in Kenya is also enabled by relatively lower taxation on mobile services compared to many other African countries.**
- However, income inequality in Kenya is greater than the EAC, SSA and the Emerging cluster averages, meaning that affordability for those in the bottom 20-40% of the population will be much higher and therefore a key barrier to mobile internet adoption



Consumer Analysis

	Kenya	EAC Average	Sub-Sahara Africa Average	Emerging Average
CONSUMER READINESS	61.48	55.53	49.25	51.20
Basic Skills	41.76	35.34	32.60	35.84
Gender Equality	81.19	75.71	65.90	66.56

- Kenya's score for skills, which measures education outcomes such as literacy, years of schooling and tertiary enrolment, is higher than the averages in EAC, SSA and the Emerging cluster. However, compared to countries higher in the Index Kenya's score for basic skills is much lower (e.g. 41.76 compared to the average in the next Transitioner cluster of 61.63). Therefore, **improving the ability of users to engage with mobile technologies is important both to increase mobile internet adoption and also ensure users can realize the full economic and social benefits of the internet**
- The country's **score for Gender Equality is higher than most other African countries, primarily driven by higher gender equality in education and financial inclusion. This is reflected in mobile phone access, where women are only 2% less likely to use a phone than men** (by contrast, in many other low and middle income countries, women can be between 20-70% less likely. However, **the gender gap in internet access is higher, with women in Kenya 18% less likely to access the internet** than men. It is therefore important to develop policies targeting the gender gap in terms of mobile internet usage.

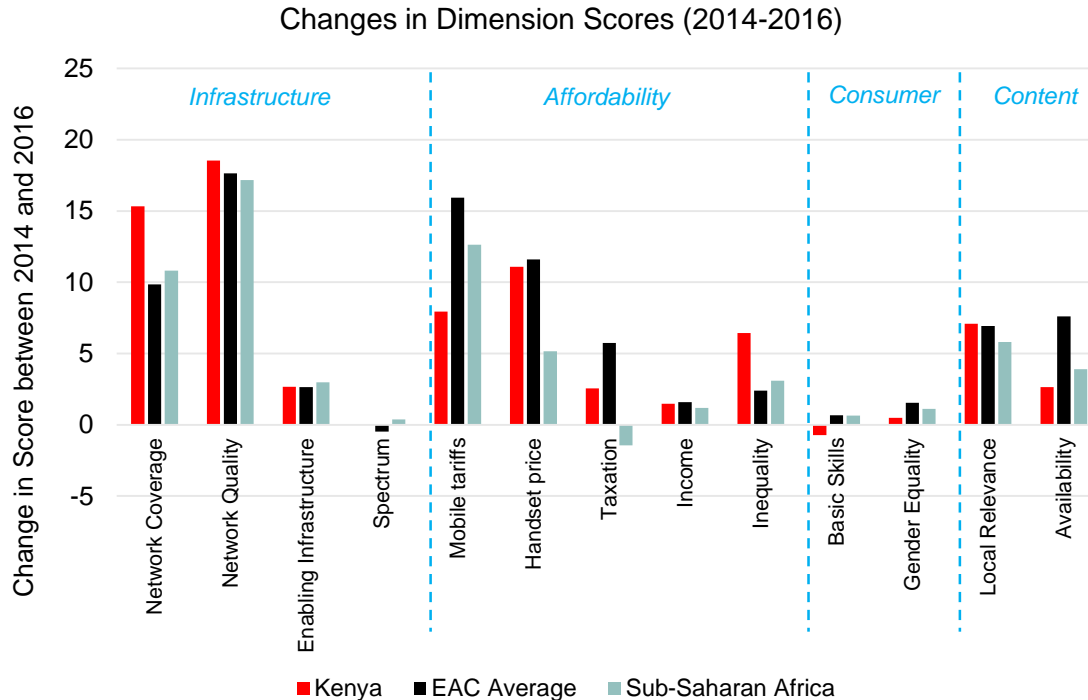


Content Analysis

	Kenya	EAC Average	Sub-Saharan Africa Average	Emerging Average
CONTENT	28.81	24.06	28.84	36.31
Local Relevance	38.48	30.82	27.75	31.02
Availability	19.14	17.30	29.93	41.60

- Compared to most countries in EAC and SSA, Kenya creates more content for its users, including:
 - Mobile applications and web content
 - E-Government services
 - Social media (which provides a platform to generate content that people are interested in)
- However, Kenya's population is linguistically diverse with more than 60 languages spoken. Many people therefore do not have a lot of content accessible available in their first or preferred languages (although those that speak English have access to a wide range of content). It is therefore **important to develop more relevant content in a wider range of local languages.**
- This is consistent with GSMAi survey data, which found that for **those not accessing the mobile internet in Kenya, around 20% said that one of the main reasons was that they did not find the internet relevant (i.e. either useful or interesting)**

Changes in Index score since 2014



- Operators in Kenya have made significant improvements to network coverage relative to other EAC and SSA countries
- Furthermore, while Kenya is lagging some of its peers on network quality and inequality, it has made significant improvements during the last two years.
- It is therefore important that the country continues its progress on these dimensions, along with developing the population's digital skills and increasing the availability of content in more local languages.



Enabling Mobile Internet Adoption - Summary

The adoption of mobile technology, especially mobile internet services, is much more advanced in Kenya than many other African countries. However, both new users and the majority of existing users would realise more of the economic and social benefits afforded by the internet if they utilized 3G or, ideally, 4G technologies. Government and operators therefore have a crucial role in driving a more enabling environment that can accelerate take-up:

- Continue to **improve network quality**
- **Developing enabling infrastructure** necessary to support mobile access and network quality – especially backhaul and core networks that are resilient and have sufficient capacity to meet demand
- Continue to **make mobile more affordable to those on the lowest incomes**
- Policies and initiatives that help **improve education and awareness of mobile technology** and also close the gender gap in mobile internet access
- Supporting firms in the mobile ecosystem – particularly software developers and content creators – to **develop content that is both relevant and accessible** to people in urban and rural areas



Thank you!

