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ETTG **POLICY BRIEF**

From Gaps to Goals

Digital Transformation in Africa

DATA ANNEX

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Data Annex: Digital Transformation in Africa: From Gaps to Goals

About this document: this data annex presents supplementary statistical information to the ETTG policy brief with the same title, which can be **accessed here**. The authors of the policy brief gratefully acknowledge the support from Demet Bekdemir, who collected and analysed some of the statistics presented here.

1. Introduction:

This document provides evidence-based overview of the African digital divide based on chosen findings from two reports:

ITU (2024): Measuring Digital Development: Facts and Figures
GSMA (2024): The State of Mobile Internet Connectivity 2024

In one respect, the document presents a thorough basis on which to understand the scale, dynamics, and ramifications of digital inequality across Africa. In essence, the paper herein details some critical descriptive statistics and trends that shape inequalities between Africa and the rest of the world, as well as inequalities within Africa itself. Important indicators that stand out include penetration of the Internet, mobile broadband access, gender disparities, affordability, and quality of connectivity.

The analysis responds to the following questions in specific:

- Where is Africa located in terms of digital connectivity on a global scale?
- How do African regions differ in terms of digital access and usage?
- Is Africa closing the digital divide, or is it widening?

International Telecommunication Union. (2024). Measuring Digital Development: Facts and Figures:

2. Internet Connectivity Levels

- Percentage of individuals using the internet, 2019 and 2024 (ITU, 2024, p. 2):
  - By region
    - **World** 53% (2019) and 68% (2024), **Africa** 25%-38%, **America** 76%-87%, **Arab states** 54%-70%, **Asia-Pacific** 48%-66%, **CIS** 76%-92%, **Europe** 82%-91%
  - By income level
    - **Low-Income** 17% (2019)-27% (2024), **Lower-middle-income** 34%-54%, **upper-middle-incom**e 65%-81%, **high-income** 88%-93%
  - By development level

        - **LDCs** 22% (2019)-35% (2024), **LLDCs** 28%-39%, **SIDS** 56%-65%

- Percentage of individuals using the internet by age group, 2024 (ITU, 2024, p. 6):
    - By region
        - **World** 79% (youth)-66% (rest of the population) in 2024, **Africa** 53%-34%, **America** 95%-85%, **Arab states** 86%-67%, **Asia-Pacific** 81%-64%, **CIS** 97%-91%, **Europe** 98%-90%
    - By income level
        - **Low-Income** 43% (youth)-23% (rest of the population), **Lower-middle-income** 71%-50%, **upper-middle-income** 97%-78%, **high-income** 99%-93%
    - By development level
        - **LDCs** 52% (youth)-31% (rest of the population), **LLDCs** 51%-37%, **SIDS** 78%-62%

- Percentage of individuals using the internet in urban and rural areas, 2024 (ITU, 2024, p. 7):
    - By region
        - **World** 83% (urban)-48% (rural) in 2024, **Africa** 57%-23%, **America** 90%-74%, **Arab states** 83%-50%, **Asia-Pacific** 83%-49%, **CIS** 95%-85%, **Europe** 93%-86%
    - By income level
        - **Low-Income** 46% (urban)-16% (rural), **Lower-middle-income** 73%-43%, **upper-middle-income** 88%-69%, **high-income** 95%-88%
    - By development level
        - **LDCs** 65% (urban)-25% (rural), **LLDCs** 63%-28%, **SIDS** 81%-41%

3. Mobile Internet Access

→ GSMA (2024) The State of Mobile Internet Connectivity 2024.

- Global mobile internet connectivity, 2015-2023 (GSMA, 2024, p. 10).

	2015	2016	2017	2018	2019	2020	2021	2022	2023
Coverage gap	19%	15%	11%	8%	7%	6%	5%	5%	4%
Usage gap	49%	48%	46%	45%	44%	42%	41%	40%	39%
Mobile internet subscribers	33%	38%	43%	46%	49%	52%	54%	56%	57%

→ This figure illustrates the development of global mobile internet connectivity from 2015 until 2023. Correspondingly to the graph, it can be said that over the time the global mobile internet connectivity has improved notably. The numbers of subscribers to mobile internet have continuously increased.

- **Mobile internet connectivity, 2021-2023 (GSMA, 2024, p. 13).**

	Coverage gap			Usage gap			Mobile internet subscribers		
	2021	2022	2023	2021	2022	2023	2021	2022	2023
North America	1%	1%	1%	20%	19%	19%	79%	80%	80%
Europe & Central Asia	2%	1%	1%	24%	24%	24%	73%	74%	75%
East Pacific & Pacific	2%	1%	1%	30%	29%	27%	68%	70%	72%
Latin America & Caribbean	7%	6%	6%	35%	34%	33%	57%	60%	61%
Middle East & North Africa	6%	5%	4%	48%	47%	47%	46%	48%	49%
South Asia	5%	4%	4%	54%	51%	50%	42%	44%	46%
Sub-Saharan Africa	17%	15%	13%	59%	59%	60%	24%	25%	27%

→ Regarding mobile internet connectivity in different regions, a similar development over the time is observable. However, this figure indicates the division of this development through regional lenses very clearly. Although we are able to see an increase of the mobile internet connectivity in every region, in North Africa & Middle East, in South Asia and in Sub-Saharan Africa, compared to high-developed regions such as Europe, North America and East Asia, proportions of the numbers remained very low. Specifically, within Africa, the rates of connectivity can be distinguished very clearly, considering that the usage gap lies at 60% in Sub-Saharan Africa, while in North Africa in 2023 at 47%. Additionally, the biggest coverage gap of mobile internet connectivity among different regions in the world seems like it is mostly an issue in Sub-Saharan Africa.

- Mobile internet use among children aged between 5 and 17 years old, 2023 (GSMA, 2024, p. 23).

	Global	North America	Europe & Central Asia	East Pacific & Pacific	Latin America & Caribbean	Middle East & North Africa	South Asia	Sub-Saharan Africa

Coverage gap	6%	1%	2%	2%	6%	4%	5%	14%
Usage gap	43%	19%	18%	19%	30%	51%	54%	68%
Mobile internet subscribers	51%	80%	81%	80%	65%	45%	41%	18%

→ The figure illustrates the percentage of children using mobile internet, revealing significant disparities across different regions and income levels. Accordingly, it can be concluded that Sub-Saharan Africa, North Africa & Middle East and South Asia are the regions that together consist of the biggest usage gap on the global scale. However, Sub-Saharan Africa should be mentioned specifically, since the rate of mobile internet users among children aged between 5 and 17 years old, is significantly lower than in the other regions. That indicates the fact that regions differ from each other in terms of the proportions of the mobile internet users. However, even within the continent of Africa, it is highly observable that the outputs can be discerned very dramatically, as the graph demonstrates.

- **Distribution of devices used by mobile internet subscribers, 2019-202, (GSMA, 2024, p. 25).**

		Global	North America	Europe & Central Asia	East Asia & Pacific	Latin America & Caribbeans	Middle East & North Africa	South Asia	Sub-Saharan Africa
Feature Phone	2019	17%	7%	11%	11%	19%	13%	34%	40%
	2021	12%	5%	8%	7%	16%	11%	22%	34%
	2023	8%	3%	6%	3%	13%	9%	10%	29%
3G Smart-phone	2019	23%	13%	37%	15%	36%	39%	15%	39%
	2021	17%	5%	26%	10%	31%	33%	12%	38%
	2023	13%	1%	17%	4%	26%	26%	9%	37%
4G Smart-phone	2019	59%	80%	52%	73%	45%	49%	51%	22%
	2021	57%	71%	61%	56%	53%	54%	66%	28%
	2023	54%	47%	55%	53%	53%	58%	66%	33%
5G Smart-phone	2019	0%	1%	0%	1%	0%	0%	0%	0%
	2021	13%	19%	5%	27%	1%	2%	0%	0%
	2023	25%	49%	22%	39%	8%	7%	15%	2%

- Distribution of usage gap based on those who have a device and those who do not, 2023(GSMA, 2024, p. 27).

	Global	North America	Europe & Central Asia	East Asia & Pacific	Latin America & Caribbeans	Middle East & North Africa	South Asia	Sub-Saharan Africa
No device	67%	81%	59%	65%	78%	68%	63%	71%
Have a device	33%	19%	41%	35%	22%	32%	37%	29%

4. Affordability

- **Price of data-only mobile broadband (2GB) basket as % of gross national income per capita, 2023-2024 (ITU, p.13)**

	2023	2024
World	1.3	1.1
Africa	4.6	4.2
Americas	2.3	1.9
Arab States	1.1	0.8
Asia-Pacific	1.2	0.9
CIS	0.8	0.7
Europe	0.4	0.3
Low-Income	8.6	7.4
Lower-Middle-Income	2.5	2.2
Upper-Middle-Income	1.2	1.1
High-Income	0.4	0.4
LDCs	5.1	4.6
LLDCs	2.3	2.0

SIDS	2.5	2.1

- Price of fixed broadband (5GB) basket as % of gross national income per capita, 2023-2024 (ITU, p.14)

	2023	2024
World	2.8	2.5
Africa	14.8	13.4
Americas	3.9	3.5
Arab States	3.2	3.2
Asia-Pacific	3.0	2.4
CIS	3.3	2.5
Europe	1.0	1.0
Low-Income	31.1	29.3
Lower-Middle-Income	8.9	6.5
Upper-Middle-Income	3.3	2.6
High-Income	1.1	1.0
LDCs	16.8	15.3
LLDCs	6.1	5.5
SIDS	4.1	3.5

→ The tables above show that the cost of 2GB mobile data was approximately 12 times higher in Africa than Europe, and the disparity is projected to extend to 14-fold by 2024. This stark contrast is undoubtedly a result of high infrastructure costs, low competition, and economies of scale, among other things, in Africa. The prohibitive cost of data has remained a significant impediment to access to the internet for the bulk of low-income earners, particularly in rural areas. On the other hand, the declining cost of data in Europe only serves to increase the yawning gap. Without addressing these affordability issues, it will be challenging to extend digital connectivity across Africa.

- Affordability of entry-level, internet-enabled device and 1, 5 and 20 GB of data for poorest 20% and 40%, and men and women, by region in 2023

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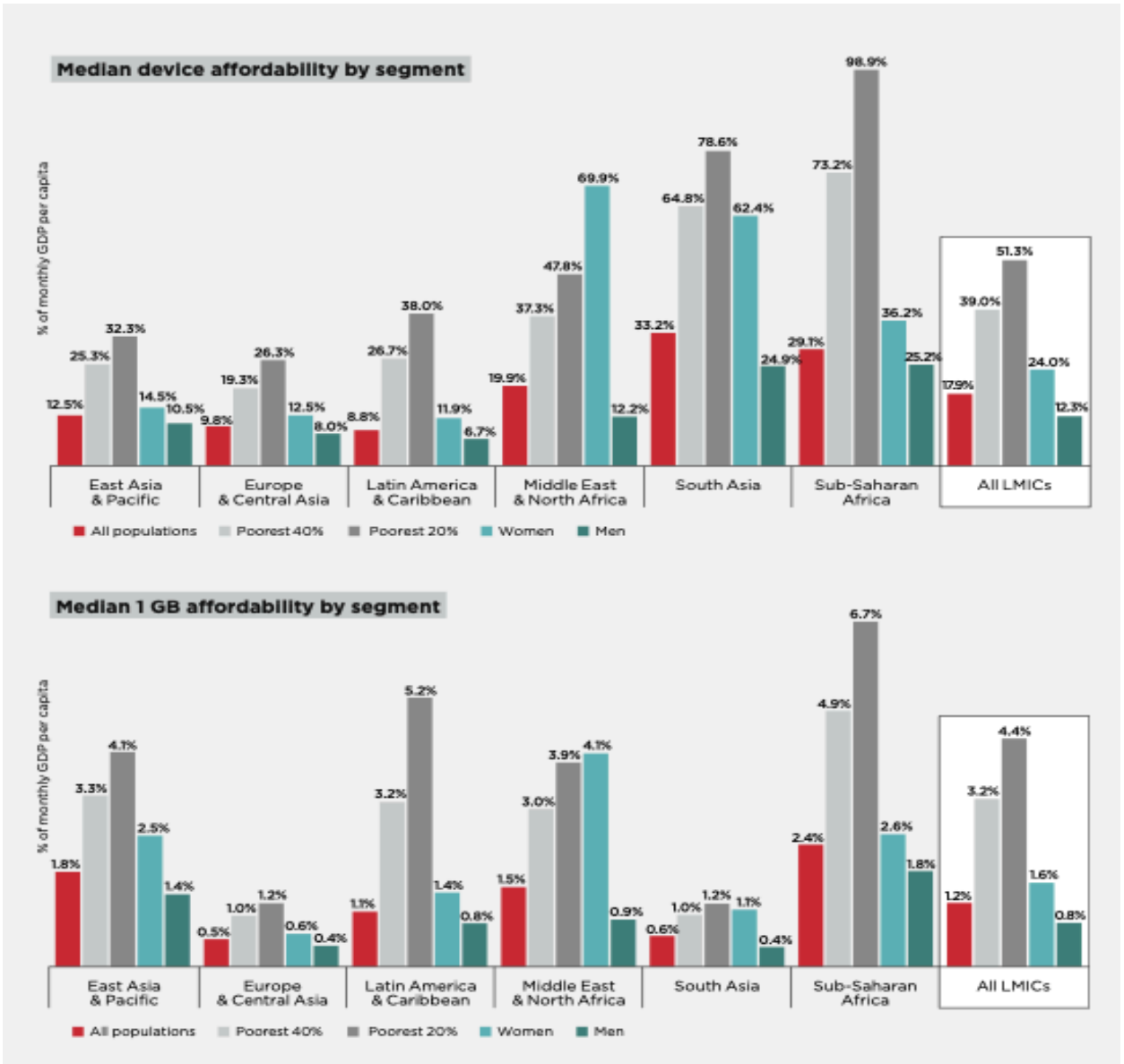

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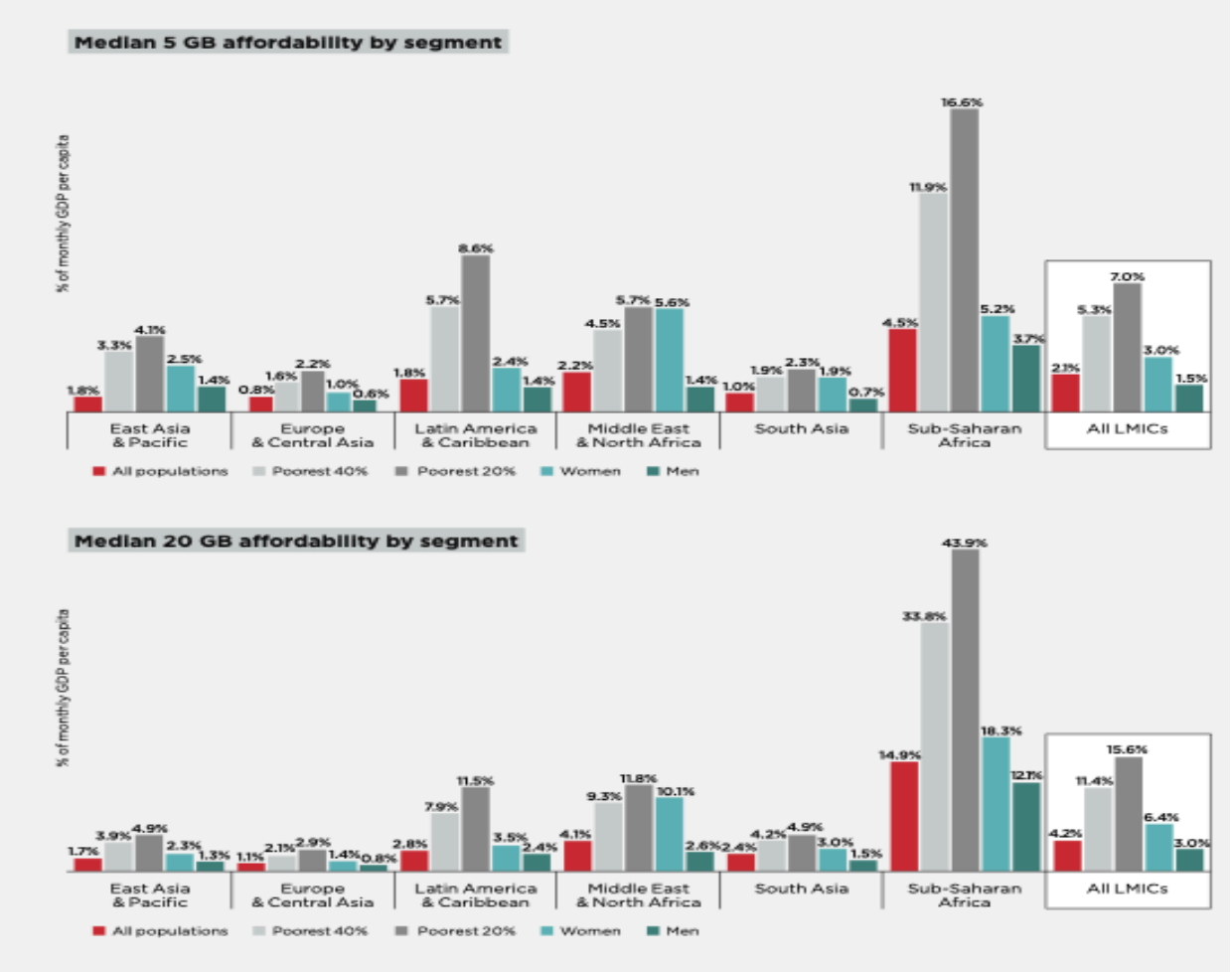

→ The two figures illustrate the significant affordability challenges for mobile devices and data across regions in 2023. With the poorest 20% spending 73.2% of their income on entry-level devices, 16.6% on 5GB of data, and 43.9% on 20GB, Sub-Saharan Africa has the highest costs. The costs are even higher for women in this area, where 20GB accounts for 50.5% of their income that indicates a clear disparity in terms of gender. The poorest people in Europe and Central Asia and East Asia and the Pacific, on the other hand, spend less than 3% of their income on data, indicating much lower costs. These differences underscore the digital divide, particularly in South Asia and Africa, where women and low-income groups encounter significant obstacles to digital access.

5. GENDER GAP

The differences between men and women with respect to both what they can afford and how they can use different digital technologies, especially mobile internet, have been referred to as gender gaps in digital access. The women in most of these places are faced with greater hurdles as a result of things such as higher costs, restricted access to devices, and a lack of digital literacy to get into the digital experience. Women are less likely than men, particularly lower income and rural women, to take any kind of part in the digital economy. Closing this gender gap is important for ensuring inclusive digital growth, without which, the efforts to boost the economy digitally will not result as it is expected.

- **Percentage of female and male population using the Internet, 2024** (ITU, p.5)

→ The given table above demonstrates the ratio of using the Internet through gender lenses. According to the acquired data it is clearly seen that worldwide women are less likely to use the internet compared to men. In addition to that, even though there is a significant difference between women and men regarding internet usage, that difference grows when we look at the least developed countries or low-income countries. Furthermore, it should be noted that inequality in the context of internet use is not only gendered in terms of men and women, but there are also many regional inequalities among women. (For instance, only 31% of African women use the internet, while in Europe the percentage of the women who use internet reaches until 90.

	Female	Male
World	65	70
Africa	31	43
Americas	86	87
Arab States	64	75
Asia-Pacific	64	68
CIS	91	93
Europe	90	92
Low-Income	21	32
Lower-Middle-Income	49	60
Upper-Middle-Income	82	82
High-Income	93	94
LDCs	29	41
LLDCs	36	43
SIDS	64	64

- **Gender gap in mobile internet adoption across LMICs and by region, 2017–2023 (GSMA, 2024, p. 21).**

→ by Region

→across LMIC's

2017	25%
2018	23%
2019	21%
2020	15%
2021	18%
2022	19%
2023	15%

→

	2017	2018	2019	2020	2021	2022	2023
Europe & Central Asia	7%	7%	6%	3%	4%	4%	4%
East Pacific & Pacific	7%	10%	8%	4%	4%	6%	4%
Latin America & Caribbean	5%	2%	0%	0%	2%	2%	0%
Middle East & North Africa	21%	21%	21%	19%	15%	15%	16%
South Asia	66%	57%	50%	35%	41%	41%	31%
Sub-Saharan Africa	34%	38%	36%	35%	36%	36%	32%

→ Based on the tables above, it is obvious that women from LMICs are 15% less likely to use mobile internet compared to their male counterparts. Factors contributing to this gap include the accessibility of devices, the associated costs, low digital literacy, and gendered social norms that deny women the full access to technology. These barriers further deny women access to opportunities and other essential services. Such constructions include education and health care, placing overwhelming responsibilities on women and intensifying already existing disadvantages and inequalities. Thus, closing this gap is vital for the social and economic uplift of women.

5. Is Africa Catching Up?

Mobile internet adoption in Africa increased relatively faster than in HICs then: with increasing investment in mobile broadband infrastructures and increasing user uptake. Whereas HICs saw almost universal connectivity, however rapid Africa's growth, it starts from a much lower base. Therefore accelerated though, Africa's overall digital penetration is still lagging far behind the global leaders, standing at 38% internet penetration vis-à-vis Europe's 92%.

With this growth are accompanying the widening digital divides in terms of affordability. The ITU has pointed out that relative to European comparisons, the indexed price of mobile broadband in Africa has gone up-and-up-from being only 12 times overcosting for 2023-to being at 14 times overcosting for 2024. This shows that though access to mobile services is generally increasing, data affordability still represents a major barrier for populations that are mostly among the poorest, especially those in rural settings. Data affordability and device affordability remain the two major interlocking hindrances to getting more people online.

Sub-Saharan Africa is still very much behind in deploying 4G and 5G, even when one considers that infrastructure upgrades are ongoing in Africa. Reports would indicate that the area is using 3G networks, with nearly two-thirds of users still having older devices and technologies. Infrastructure's roll-out of those 4G services in urban centers is momentarily playing a balancing act since the very lacking service for deploying 4G/5G in rural, remote regions of the countryside means inadequate internet quality and speed, hampering severe upfront inequalities across the digital divide. The issue therefore represents a great challenge to overcome with respect to bridging the gap between Sub-Saharan Africa and high-income countries that are rapidly advancing into the realm of 5G adoption.

In sum, these points show that while Africa is turning the corner toward digital connectivity, paramount still are barriers in affordability, infrastructure development, and access to technology that portend against broader, more equitable access across the continent. This is key in ensuring that the rise in mobile internet access translates into inclusive digital development.

6. Conclusion

Based on the descriptive data that has been shown in the previous chapters on the paper, it could be concluded that Africa is still trailing behind the rest of the world in digital connectivity, especially in accessing the internet and mobile. For instance, with an average of 38% connectivity, Africa is well off the international average of 68%. Asia records even lower mobile internet usage, as Sub-Saharan Africa leads the entire continent in lowest adoption rates globally. Nevertheless, despite a rapid increase in the digital infrastructure on the continent, mainly cell broadband, Africa faces significant access and service quality gaps.

One of the main barriers facing connectivity is the strong urban-rural divide. As for urban areas, there is significant penetration of mobile internet; most rural residents still receive significantly less access, only about 23% of rural Africans have access, compared to 57% of urbanites. Beyond this, gender disparities are

found where women in low- and middle-income countries (LMICs) are 15% less likely to be using mobile internet than men, largely because of high costs and low access to devices and cultural barriers.

Furthermore, in Africa, mobile data costs are among the highest in the world-the International Telecommunication Union (ITU) claims that it can cost as much as 14 times that in Europe for 2GB of

data-so digital access becomes unaffordable for the poorest mass, rural and marginalized people. Infrastructure gaps, especially with regard to 4G/5G deployment, will also delay access quality: indeed, having older mobile networks like 3G, Sub-Saharan Africa is still very much dependent.

Growth is happening-mobile broadband deployment, but the absolute digital divide continues to grow in terms of affordable and quality access. Such targeted investments in mobile broadband, affordable devices, and gender-inclusive digital skills development will greatly accelerate improvements and make it possible for Africa to be more competitive with high-income regions in bringing digital transformation for all across the continent.