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KNOWLEDGE PLATFORM ON INCLUSIVE DEVELOPMENT POLICIES

Digital divides or dividends: Including basic services in Africa's digitalisation agenda

Policy Brief

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Key findings

1. Digital transformation must be underpinned by a clear vision and national level plans that are people-centred and ensure that no one is left behind in digital transformation.
2. If underlying structural problems such as access to education are not addressed, it is unlikely that digitalisation alone will decrease inequality and exclusion. This why, despite the rapid increase of e-services, we see persistent rural-urban and socioeconomic divides.
3. Statistics on internet usage provide a better understanding of how many people and which groups are excluded from e-services than statistics on internet coverage or penetration rates.
4. You cannot compensate for a lack of digital skills with heaps of innovation. Universal enrolment in secondary education, embedding digital skills as part of curriculums, and fostering digital skills in the workforce are crucial to avoid undermining the benefits of digital innovation.
5. Digital interventions must maximise the opportunities presented by technology but be appropriate for the current state of development. In contexts that lack internet and basic IT skills, it makes more sense to focus on trends like mobile telephony / mobile money and leapfrogging technologies.
6. Balance must be found between leveraging private finance (for infrastructure and digital skilling) and regulating the private sector (to reduce the cost of data and devices and ensure online security).
7. Involving CSOs can help to communicate the needs of vulnerable groups, build a strong digital culture, and hold stakeholders accountable for inclusive digital transformation.

Background

COVID-19 solidified the importance of digitalisation for African development. The pandemic spiked the demand for digital solutions in every sector and forced new approaches to governance and public service delivery in developing countries. Thousands of government services in Africa now use digital platforms and tools for their information, administration, delivery and payment. But knowledge of these fast-growing interventions and evaluations from an inclusive development lens are lacking.

Digitalisation is not an end goal, but a means to reduce poverty and inequality and to improve the quality of citizens' lives through greater opportunity, participation and wellbeing. Data and technology have the potential to increase the scale, speed and adaptability of services, improve targeting and transparency, reduce bribery and corruption, and enable greater communication between governments and citizens. However, these benefits are not guaranteed and there is a risk that without certain pre-requisites as well as inclusive design and implementation, digitalisation will reinforce or widen existing divides.

The African Union Digital Transformation Strategy for Africa 2020-2030 highlighted 4 key pillars for inclusive digital transformation across the continent: policy and regulation; infrastructure; digital skills; and innovation (see description on pp. 6). The extent to which these pillars are being met, as well as the extent to which they represent a complete list of enabling conditions for African countries, has been poorly documented, making it hard to guide policy and development cooperation in this area.

A research programme by INCLUDE, involving 5 case studies in Benin, Ghana, Mauritius, Rwanda and Uganda, and an overarching Synthesis report, set out to answer two main questions:

- What is the current landscape of digital public services in Africa, and how does digitalisation impact access to and usage of government services, particularly among vulnerable groups?
- To what extent are the enabling conditions for inclusive digital transformation being met, and what are the critical gaps for policy, investment and development cooperation?

This policy brief summarises the main findings and reflections from the research programme, and presents options and recommendations for creating universal and inclusive e-services in Africa. The brief is structured as follows:

Mapping of e-services

As of 2022, over 1000 public services were available digitally in the five countries studied. The majority of these can be accessed through centralised government platforms which either conduct the service or redirect users to the relevant provider. E-services are a mix of "fully digitalised", meaning that information, registration, payment and completion of the service all use digital tools or interfaces, and "partially digitalised" (hybrid), where some aspects like registration or payment are carried out digitally but the service itself still requires visiting a physical office.

Centralised platforms for e-services

Benin	SmartGouv (560 e-services of which 132 fully digitalised) (launched 2020)
Ghana	Ghana.gov (hosts all central and local e-government services) (launched 2020)
Mauritius	Government Online Centre (85 fully digitalised e-services) (launched 2005) InfoHighway (supports 557 services through data sharing) (launched 2017)
Rwanda	Irembo platform (104 e-services, both fully digitalised and hybrid) (launched 2014)
Uganda	eCitizen portal (directory of other platforms) (launched 2014)

The e-services mapped out in the case studies span a range of government sectors. Some sectors, like civil registration, are more conducive to digital transformation and therefore have a broader range of services that are fully digitalised, while others, like e-health, require more diverse and complex technologies and are still in their infancy in many countries.

Examples of e-services from the case studies

Sector	Examples of digitalised services	Example initiatives
Civil registration	Digital identification and passports; Birth, death and marriage certification; License provision	Ghana digital ID; Mauritius MauPass
Communication	Information/feedback channels between governments and citizens, as well as inter-governmental communication channels	Mauritius Citizen Support Unit and InfoHighway; Rwanda Irembo user feedback survey
Education	ICT hubs in schools; Digital enrolment; National exam results distribution; Online curriculum; Connecting universities and research centres; Online training for students and teachers	Ghana eLearning platform and CSSPS; Mauritius EDLP and IC3; Benin UAC courses and exams
Finance	Social security; Loans; Insurance; Taxes	Uganda National Single Registry; Mauritius MRA wage assistance scheme
Health	Booking doctors' appointments and covid tests; Health records; National health insurance schemes; Medical advice; Digital prescriptions	Rwanda Babyl eHealth platform and 3MS (Mutuelle Membership Management System)
Immigration	Visas; Permits; Foreign traveller documents	
Justice	Criminal record log; Police reports; Case information (evidence, verdicts)	Ghana e-Transform
Land	Digital cadastres; Land titling and transfers; Land use change; Loan authentication; Digital addresses (GPS systems)	Rwanda LTRP (Land Tenure Regularisation Programme)
Utilities	Water and electricity payment and registration	All countries

Emphasising equity and participation over competitiveness and efficiency

Has digitalisation created more equitable access and more meaningful usage of basic services? The case studies show that digitalisation is promoting quality, efficiency and fairness within public service delivery. It is enhancing access to and traceability of information, reducing corruption and error, and eliminating time and distance costs for users. At the same time, in most of the countries studied, there are significant

rural-urban and socioeconomic divides in connectivity and affordability, as well as a lack of digital skills, localised content and trust in e-services. This implies that digitalisation has not automatically led to more inclusive services, and that emphasis must be placed on equity and participation rather than solely competitiveness and efficiency.

Spatial equity

There have been concerted efforts to enable greater access to the internet in peri-urban and remote areas. The case studies show large investments in cross-country fibre-optic backbones, as well as broadband infrastructure sharing between providers to bring down costs and expand the reach of networks.[1] They also highlight the success of public access points, such as ICT hubs in schools and community centres or free Wi-Fi zones in libraries, hospitals and transport stations.[2] At the same time, wide gaps remain in basic connectivity, and internet connections outside of major cities are often not secure or reliable, which limits access to digital services in rural areas. For example, the rural electrification rate is just 18% in Benin and 44% in Rwanda, compared to 66% and 97% in urban areas; in Uganda, just 5% of rural citizens can access the internet compared to 25% of urban citizens. A major problem is the low incentive to invest in rural infrastructure due to low density, urbanisation and returns on investment in cities. Another challenge is that most e-services are centralised, which prevents locally tailored solutions.

Social equity

Although the size of digital divides varies between countries, people with disabilities, women and people without formal education face common challenges in accessing and using e-services.

- **The vast majority of online portals leave people with disabilities with no access to e-services.** Of the 5 countries, only Mauritius incorporates accessibility features for people with visual impairment, and none have practical information about alternative services or support.
- **Women face technology-specific barriers that mirror barriers faced in the offline world**. Digital skills, affordable data and online violence disproportionately affect women and reflect problems with access to education, economic security and participation. According to GSMA, the gender gap in mobile internet usage was 37% in Sub-Saharan Africa in 2021, and the Benin study found that women represent just 32% of internet subscribers. However, there are some positive examples that offer lessons for gender inclusion. In Rwanda, digitalisation has helped women to register land titles under their own name, reducing inequality in land ownership. Gender gaps are also lower in mobile phone ownership than internet usage in all countries, creating opportunities for initiatives that reach women more effectively.
- **Divides based on education are often larger than gender divides.** In Ghana, 21% of survey respondents with no formal education use the internet, compared to 51% with primary, 72% with secondary and 88% with university education. In most of the study countries, people with a poor educational background are much less likely to apply for and receive governments services through online channels. Ensuring universal enrolment in secondary education and rolling out digital skills programmes are key to closing these gaps.

Affordability

The case studies found affordability to be one of biggest inhibitors to using e-services. Cost saving for governments has not always resulted in cost saving for users. Where the focus has often been on the cost of data, the studies highlight three aspects to the issue of affordability.

- **The cost of data.** The average cost of 1GB of mobile data in Mauritius and Ghana is lower than the 2% of monthly GNI recommended by the UN Broadband Commission. Internet users in Rwanda, Benin and Uganda spend a larger proportion of their monthly income on data. This is partly due to the degree of competition - Ghana has 152 internet providers compared to Benin, where until recently just two telecoms operators served 90% of the market.

[1] Ghana's 800 km fibre-optic network covers 20 districts and 120 towns. Rwanda's 4,000 km network covers all national districts.
[2] Uganda's Rural Communications Development Fund (RCDF) established 106 Internet cafes, 72 ICT training centres, 13 Multi-purpose Community Telecentres (MCTs), 708 School ICT laboratories, and 174 Health ICT facilities.

- **The cost of devices.** Import tariffs and duties, combined with limited local production, makes smartphones and tablets unaffordable for many people, especially those with low income. 73% of non-internet users in Ghana and 48% in Uganda cited a lack of devices as a major reason.
- **The cost of services and intermediaries.** In Uganda, users pay a 3-5% transaction fee for water and electricity services. In Rwanda, digital services cost up to 149 USD. In Benin and Rwanda, service agents (mostly used by people without a mobile phone or ICT skills) charge unregulated commission fees that eliminate the costs saved through digitalisation.

Usage

In Rwanda, the Irembo platform has just 1500 daily users from a population of almost 14 million. In Ghana, only 17% of the 1694 people surveyed use the internet for accessing public services. In Benin, 56% of respondents who are aware of e-services still choose to use in-person services. Low usage is as much of a concern as universal access. The research identified three main factors that limit the use of e-services.

- **Skills**: In Mauritius, an Internet and Computing Core Certification (IC3) was integrated into school curriculum in 2014 and also offered to adults. Digital literacy is reported at 57% and basic literacy at 90%. Contrastingly, Benin has a basic literacy rate of 42%, and Uganda and Rwanda have computer literacy rates of 12%. Lack of IT skills was reported as a major obstacle by 64% of non-internet users in Uganda, and 92% of e-service users in Rwanda.
- **Content**: Rwanda's portal is available in English, French and Kinyarwanda, but the majority of portals lack local languages (Ghana and Uganda's portals are only in English, and Benin's in French). Moreover, despite some examples of e-services using different modalities to fit the local context (e.g. Uganda used WhatsApp and TV for learning during COVID), many services are only accessible through apps or internet portals which fail to account for local capabilities.
- **Trust**: In Rwanda, despite the range of innovative e-services, low trust (mainly data privacy and surveillance concerns) causes a reluctance to use the Irembo platform. The Mauritius case also highlighted the need for greater sensitisation to e-services and building a digital culture.

Participation

There are two sides to the relationship between digitalisation and participation. The first is about how governments use digital platforms to share information, identify citizens' needs and preferences, and incorporate feedback to form more responsive public services (the three components of the e-participation index). The case studies present positive examples of this. In Mauritius, citizens share ideas and concerns with local governments through the Citizen Support Unit about issues like street lighting, roads, waste management and housing. In Rwanda, Irembo updates are partially based on user satisfaction surveys. However, local CSOs were not consulted in this re-design, and existing feedback channels only capture the voices of those who are already able to use e-services, rather than the needs of those who are excluded.

The other side to participation is enhancing the ability of citizens to be part of voting processes and take part in public debates online. There are less promising examples of this in the case studies. In Uganda, the internet was shut down during the 2021 election, and there are many instances of online violence and blocking of websites that post e.g. LGBTI or anti-government sentiment. Similar experiences of suppression and intimidation are seen in Rwanda. This closing of civic space online presents major challenges to democracy and the inclusion of minorities.

Understanding the enabling conditions for inclusive digital transformation

The research confirmed the importance of the four foundational pillars laid out in the African Union Digital Transformation Strategy (policy and regulation, infrastructure development, digital skills and innovation). In addition, the research highlighted two other crucial conditions for digital inclusion. The first is having national level strategies and cohesive governance to guide progress in these four pillars. The second is building a digital culture to aid the adoption of e-services and increase communication between citizens and governments. The studies found clear links between progress in these six enablers, trend in digital divides, and performance in E-Government indices. The table below describes what each condition entails, why it is essential, and the extent to which is has been achieved in the five study countries.

	What is it	Why is it essential	Progress and gaps
National digital strategies & governance	Translation of the continental strategy into national plans, with short and long-term priorities, clear roles and responsibilities, and inclusion embedded as a core goal	To measure progress, guide investments, and create accountability and transparency	Many countries have a digital plan, but it lacks focus on LNOB. Duplication of agencies & integration remain key challenges
Policy & regulation	Policies for ICT development; data protection and cyber security laws; taxation; standardised user tariffs	To bring down the cost of data and devices, stimulate innovation and competition, and protect citizens online	Many policies have been enacted but they lack harmonisation. Implementation of data protection laws is urgent
Infra-structure	Universal electrification; fast, secure and reliable broadband and telephone connections	To connect people to services and collect, share and store data	Lots of investment, but gaps remain in connecting rural areas
Digital skills	Using devices, accessing information, word processing, , account generation, privacy and safety online	To enable people to navigate, utilise and benefit from e-services	Insufficient reach so far. Some programmes in schools, but capacity building needed
Innovation	Multiple languages and modalities. AI, app design, big data, cloud computing, GIS drone mapping, web forums	To adapt, diversify and modify e-services to fit local contexts and improve delivery	Multiple interventions, quite diverse. Must LNOB & tailor solutions to vulnerable groups
Digital culture	Empowering users and building trust and awareness in e-services. Requires a people-centred approach with technical and financial support	Encourages adoption and participation of citizens in digital transformation	Excitement around digital opportunities generally, but more sensitisation and engagement needed

Conclusions / Reflections

1. **Digital transformation must be underpinned by a clear vision and national level plans.**
   National plans help to harmonise policy efforts, translate the continental strategy into national prioritise, guide short and long-term actions, measure progress, and create transparency and accountability. Countries with clear frameworks to develop and regulate the ICT sector and invest in the enabling environment have progressed much faster in e-governance than those with scattered policies and ad hoc investments. It is also important that national plans are people centred and embed LNOB principles rather than focusing solely on economic growth, competitiveness and efficiency.

2. **If the factors underlying existing divides are not addressed, it is unlikely that digitalisation alone will decrease inequality and exclusion.**
   The digitalisation process itself is not inherently inclusive – it does not solve fundamental problems with access to education, employment and income opportunities, or power imbalances. This is why, despite the rapid increase of e-services, we see persistent rural-urban and socioeconomic divides. Eliminating distance and time costs by making a service digital but creating new costs through data or IT skills replaces one constraint with another rather than addressing the underlying issues. These risks should be identified and mitigated in the design and implementation of e-services. E-services should complement (rather than replace) government efforts to address structural inequalities.

3. **Statistics on internet usage provide a better understanding of how many people and which groups are excluded from e-services than statistics on internet coverage or penetration rates.**
   In Mauritius, internet coverage (the proportion of the population who are physically covered by broadband networks) is around 95% and the penetration rate (the ratio of subscriptions to population) is 143%. But surveys show that only 65% of Mauritian citizens use the internet. Likewise, Ghana celebrates an internet penetration rate of 75%, but in the case study only 17% of respondents used the internet to access government services. Usage is a better indicator of how many and who are excluded from digital services, and is therefore better for informing policies and evaluating e-service initiatives.

4. **You cannot compensate for a lack of digital skills with heaps of innovation.**
   Digital skills is the biggest barrier to the use of e-services outside of affordability and connectivity. Universal enrolment in secondary education, embedding digital skills as part of curriculums, and fostering digital skills in the workforce are crucial to avoid undermining the benefits of digital innovation. Digital skills are an important pre-requisite for inclusive digital transformation, as they not only enable the use of e-services, but also increase employment and income prospects.

5. **Digital interventions must maximise the opportunities presented by technology but remain realistic for the context and current state of development.**
   Exploring AI, Internet of Things, machine learning and 5G is promising for Africa's future with data and technology. But in contexts that still lack electricity, internet and basic IT skills, there are drawbacks to using high-tech solutions for basic services in the short-term. It makes more sense to build on trends like mobile phone ownership and mobile money and focus innovation on leapfrogging (e.g. from no electricity to green energy or no bank account to mobile banking) to achieve digital development in an inclusive and sustainable way.

6. **Balance must be found between leveraging private finance and regulating the private sector.**
   Collaborating and engaging with the private sector is an effective way to finance digital infrastructure and digital skilling. At the same time, regulation is necessary to reduce the cost of data and devices and ensure online privacy and security. Policymakers must find a balance between these incentives in order to make digital services accessible but also safe and affordable.
7. **Involving CSOs can help to communicate the needs of vulnerable groups, build a strong digital culture, and hold stakeholders accountable.**
   There are multiple clear roles for civil society in making the digital transformation process inclusive. These include empowering citizens to use e-services (through awareness and sensitisation, developing IT skills, and knowing how to be safe online), holding governments and service providers to account, and advocating for the needs of groups who are excluded from online services and feedback channels.

Roles for development cooperation

There are many gaps highlighted by this research that create valuable opportunities for development cooperation. This could look like targeted programmes that focus specifically on digitalisation in a certain sector or country, or allocating a portion of other programme budgets to digitalisation activities. Added value can be achieved by:

1. **Building capacity in integrated and secure e-governance systems.**
   There are many governments with knowledge and experience with fully integrated government systems, data protection and user engagement. They could play an advisory role for African countries looking to develop and manage similar systems or create their own digital inclusion strategy.

2. **Investing in digital skilling for all.**
   Digital skills are key for inclusive services as well as economic empowerment. It is important that digital literacy programmes are combined with basic literacy and school enrolment, and that opportunities for digital skills are extended to local communities (e.g. through TVET institutions). Co-creation would help to ensure that programme content is relevant and implementation is locally-driven.

3. **Addressing divides based on gender and ability.**

There is a great need for gender-based programme that enable online security, digital skills and affordable data and smartphones for women. There is also a need for initiatives that add accessibility features to e-services and offer devices and technical support for people with disabilities.

4. **Leveraging private sector financing for digital development.**
   Long-term, stable investments are needed in infrastructure, particularly in peri-urban and rural areas. In addition to electricity grids and broadband networks, public access points have shown to be an effective way of connecting underserved areas, and off-grid alternatives could also contribute to the energy transition.

5. **Institutionalising MEL measures that focus on inclusivity and impact.**
   There is currently a lack of evaluations to learn how digitalisation affects the reach, quality and inclusiveness of basic services in Africa. MEL frameworks and regular feedback could help to make digital services accessible and usable for everyone.

6. **Helping to strengthen the role of civil society in digital transformation.**
   Civil society plays a prominent role in information sharing and advocacy. Knowledge sharing could help local CSOs become a watch dog to balance digital power, convey the needs of vulnerable groups, and capture the voices of those who are excluded.

Key performance statistics

EGDI / NRI performance

Country	E-Government Development Index (EGDI) 2022		Global Cybersecurity Index (GCI) 2020		Network Readiness Index (NRI) 2022
	Global Ranking	*Regional Ranking*	*Global Ranking*	*Regional Ranking*	*Global Ranking*
Benin	149	24	56	6	110
Ghana	106	7	43	3	103
Mauritius	75	2	17	1	72
Rwanda	119	13	57	7	101
Uganda	144	22	72	9	116

Average cost of 1GB data (global affordability ranking)

Benin	$2.27 (144th)
Ghana	$0.61 (40th)
Mauritius	$0.87
Rwanda	$1.10 (81st)
Uganda	$1.32 (103rd)

Connectivity*

Country	Telephone			Internet			Electricity
	Penetration	*Coverage*	*Usage*	*Penetration*	*Coverage*	*Usage*	*Coverage*
Benin	103%	96%	n/a	69%	75%	26%	54%
Ghana	130%	87%	n/a	53-75%	80%	65-69%	85%
Mauritius	151-155%	99%	n/a	143%	95%	65%	99-100%
Rwanda	82%	97%	71%	60%	71%	24-31%	51-68%
Uganda	73-76%	64%	52%	55%	65%	10-24%	42-54%

** Penetration is measured as the ratio of subscriptions to population, and can therefore be greater than 100%.*
*** Internet usage is not the same as usage of e-services, which tends to be much lower.*
**** In 2008, just 8 countries in Sub-Saharan Africa had 10% or more of their population online. Internet penetration is now above 50% in all of the countries studied, showing significant progress.*
***** Statistics vary depending on the source. Part of this is due to penetration and coverage being used interchangeably when they mean different things. Some stats are based on primary data from the case studies, which may differ from national surveys.*

Links between progress in key enablers and performance in e-governance indices

- **Benin** scores low in e-governance relative to its peers, but with large infrastructure investments, as well as the creation of the digital sector plan, data protection laws and regulatory bodies, it has made notable headway, especially since its digital journey only began in 2016.
- **Ghana** is a continental pioneer in digital development since 1994, and has the lowest cost of data of the 5 countries. However, progress has begun to stagnate while others catch up. Ghana lacks an overarching framework to integrate ongoing policy efforts, and has seen little progress in its human capital index.
- **Mauritius** is a clear regional leader, which is not surprising given it has invested in all of the enablers – computer literacy in schools, 5-year plans since 1998, feedback between government and citizens, and near universal access to electricity.
- **Rwanda** is not the highest performer overall. However, its digital vision, innovation and integration of e-services has made it one of the fastest improvers. Internet coverage went from 1% in 2010 to over 70% today, and Rwanda was the only country to move up to the high-EDGI category in 2022.
- **Uganda** lags behind the other countries, particularly in infrastructural capacity and digital skills. It has the lowest performance in the Network Readiness Index and Cyber Security Index of the 5 countries, as well as the lowest internet penetration and usage rate.