



KNOWLEDGE PLATFORM ON INCLUSIVE DEVELOPMENT POLICIES

Foundation document for the INCLUDE research program on the digitalisation of basic services

Introduction

Digital transformation in Africa is seen as fundamental for closing gaps in development, building forward from the COVID-19 pandemic and achieving the SDGs and Agenda 2063. Multiple frameworks have been developed to guide digital transformation at the continental and national levels, and many African countries are driving change through e-commerce, innovation hubs, start-up, incubators, fintech and mobile money. However, the public sector often lags behind in adopting digital technologies, meaning that some of the foundations for broader digitalisation are still missing and large portions of the region's population remain excluded from the benefits of technology. This sustains/exacerbates the digital divide and stalls further progress. Tools and knowledge are urgently needed to prioritise, implement and coordinate digital strategies in order to capture the opportunities of this ongoing change in Africa's development landscape and ensure equitable outcomes.

A major component of digitalisation strategies is transforming the public sector to align with, support and regulate economic transformation, and to meet basic development needs. E-government initiatives in LMICs have been on the rise in recent years, albeit unevenly, in key policy areas such as public administration, financial service and social protection, business and agriculture, education, healthcare, and WASH. Initiatives have often been small scale and outsourced, with limited learning and evidence on what, when and how to scale inclusively. In the last year, COVID-19 has forced / accelerated the shift to online services, with varying degrees of preparedness and varying success in reaching the poorest and most vulnerable.

A growing body of evidence suggests that technology and data have the potential to increase the effectiveness and efficiency of basic services in Africa, but these benefits are not a given, nor to whom they accrue. It is now common rhetoric that transitioning to digital technologies can both widen (e.g. with remote learning) and narrow (e.g. in certain digital cash transfer programs) existing inequalities. An inclusive approach to research and policy, which places equity and participation at the core, has been largely missing. It is fundamental that the assessment and design of digital services be broadened beyond access/availability to look at usage, relevance and affordability, but also deepened to understand the impacts on development outcomes at the disaggregated level.

At a broader scale, with trends in digitalisation unlikely to reverse, the primary question is not *if*, but *how*, African governments should transform themselves. Much work remains to move from a world of sectoral digital building blocks (digitalisation at the program level or in one part of the service value chain) to an integrated system with universal safe access to, and routine use of, digital technologies. To date, relatively few citizens have digital IDs, and few governments have invested strategically, or at the necessary scale, in digital skills and infrastructure. There is also a need to strengthen and harmonize legislation on intellectual property, data pricing and privacy, in order to protect the rights of vulnerable citizens and mitigate the risks of rapid digitalisation. The pandemic has reinforced the role of governments in promoting and regulating digital service development and, at the same time, highlighted conflicts of interest, power imbalances and other barriers which stall the digitalisation process and prevent equitable outcomes. Stronger coordination and investment at the regional and continental levels, as well as partnerships with/oversight by a broader range of stakeholders, are crucial to overcome technical and political obstacles to transforming basic services.

All of this raises many questions. How exactly does digitalisation relate to inclusion? Which digital service interventions exist in different countries/sectors, and (how) do they address exclusion? To what extent are the broader conditions for successful transformation being met, and how complete are they? How can we design, implement and scale digital basic services in an inclusive way which fits African contexts? And what can policymakers and donors do to ensure universal high-quality digital services which realise their potential for inclusive development? These questions are the starting point of this document, and of the new research program for INCLUDE.

Box 1. Background, structure and methodology of this document

This brief builds upon the discussion from the last INCLUDE platform meeting (see Session 5 minutes, November 2020), and incorporates insights from a brief literature as well as informant interviews with experts in the field, to form the basis of a new research program centred around our third research theme, 'Access to basic services', and Africa's digitalisation agenda.¹ It aims to provide an overview of knowledge and practices on this topic, identify the added-value/position of our organisation in the digitalisation debate, and formulate some specific research questions which will ultimately form a call for proposals.

PART 1 clarifies the concept of digitalisation within basic services and outlines the theoretical channels for inclusion.

PART 2 sets this debate within the broader digitalisation agenda and the state of digital transformation in Africa.

PART 3 looks briefly at existing digital basic service interventions in Africa and shows what research has (and has not) addressed in terms of evaluating interventions through an inclusive lens.

PART 4 takes a broader look at the conditions necessary to ensure that digital basic services evolve inclusively and the main obstacles/pitfalls to transformation.

PART 5 identifies key indicators and knowledge gaps, and lays out the approach for a research program through which INCLUDE would contribute significantly to the knowledge base and practice on this topic.

¹ Interviewees included Taskeen Adam, EdTech Hub; Jenny Aker, Centre for Global Development and Tufts University; Erik van Stobbe, Wageningen University; and Karin Pfeffer, University of Twente.

PART 1

What do we mean by digitalisation of basic services?

‘E-governance is the use of ICTs to improve the provision of information and services and encourage citizen participation in decision-making processes, to make government more accountable, transparent and effective’ (PIWA & UNDP, 2009).

At a fundamental level, digitalising basic services involves [adopting and using digital data and technologies](#) to alter the structures and processes of new and existing government services (see typologies in the table below). There is a conceptual distinction to be made between [digitisation](#), which is the process of converting analogue to digital, and digitalisation, which involves using these changes to transform how services are carried out and how governments and citizens interact, and to create new (digital) flows of financing and information. E-government can include digital public goods, such as digital platforms, databases, tools and service products, and the supporting digital training programs and policies, which facilitate basic service access and encourage broader economic transformation through digital means.

There are [3 main models](#) of digital basic services, used across multiple public sectors:

Basic service model	Examples
Government-to-citizen (G2C) ²	e-banking, e-learning, e-health, taxes and subsidies, individual licences, digital payments (such as money transfers, input vouchers, fees and fines)
Government-to-business (G2B)	e-regulations, digital licences and procurement, digital payments (business credit)
Government-to-government (G2G)	e-administration and other decentralised government activities

According to a framework developed by the UNDP, e-governance has three [core components](#) (e-administration, e-service, and e-participation) and three cross-cutting components (access to ICT and connectivity, access to information, and regulation and political environment). Importantly, digitalisation is not an end goal; rather, a citizen-centred approach is needed, where technology becomes a tool to strengthen communication and practices which serve other development objectives, with the end goal being to equitably and sustainably increase wellbeing and capabilities.

For this research program, we look specifically at government services, where national or local governments are the lead actor initiating the provision of a service. It must be acknowledged, however, that other (non-state) actors are often involved in funding, advising, implementing and monitoring basic service programs, and that citizens are not just beneficiaries of top-down service provision, but also active agents using technology to provide information and services to their governments. Because of this, the political economy aspects of digitalising basic services – how it is viewed, discussed, regulated, and organised between stakeholders (with links to power, participation, and privacy) – are important to consider.

² We consider here the two-way transaction between [citizens and governments](#), which includes feedback to authorities through digital communication. This reverse channel has strong links with civic space, participation and democracy.

Through which channels does digitalisation drive inclusion within basic services?

‘The quantity and quality of public services varies widely, in part due to information asymmetries, high transaction costs, and weak institutions; [moreover]..., the constraints related to access to and quality of public service provision seem to disproportionately affect the poor’ (Aker, 2017).³

The process of digitalisation can help to address these obstacles by increasing the [\(cost-\) effectiveness, efficiency, equity and governance](#) of basic service provision. In particular, technology and data can help to reach marginalised groups quickly through stronger identification, delivery and feedback mechanisms. In line with the UNDP’s core concepts of e-governance mentioned above, there are [three broad channels](#) through which digitalisation can improve basic service provision.⁴ These channels are similar across sectors and fairly unanimous within the literature.

- 1. Information/management:** Digital tools can increase the volume, timeliness and accuracy of data available to both citizens and governments. This information can be used to better assess local needs and preferences and to monitor program quality in real-time, which contribute to more targeted and adaptive service programs that address gaps in coverage and respond more dynamically to diverse and changing groups of vulnerable people. Strengthening data systems can also increase transparency between government agencies and between governments and citizens, which can raise accountability, reduce corruption, and improve coordination and data sharing between programs for more equitable investments across social groups and geographical areas.
- 2. Service delivery:** At the operational level, technology and data can strengthen the implementation of basic service programs in many ways, by improving efficiency (e.g. greater speed, lower transaction costs, less duplication and leakage); improving quality and effectiveness (e.g. different modalities to fit the local context, fewer errors, better targeting and tailoring); improving coverage (e.g. the number of beneficiaries and distance reached); and facilitating faster and greater resource mobilisation.
- 3. Participation:** E-governance has been strongly tied to e-participation - both the overall participation of service users in policy design and feedback, and the accessibility of different types of users. By enabling more contact between citizens and their elected officials, and by increasing the flow of information, technology can help vulnerable groups to become more aware of which services exist locally, and empower them to voice their needs and demand accountability from decision makers. In this regard, digital communication can create channels for broader stakeholder engagement and strengthen the representation of marginalised groups in policymaking processes.

³ See also INCLUDE concept note for phase II (2019-2022) (pp.17) on social/spatial divides in basic service provision.

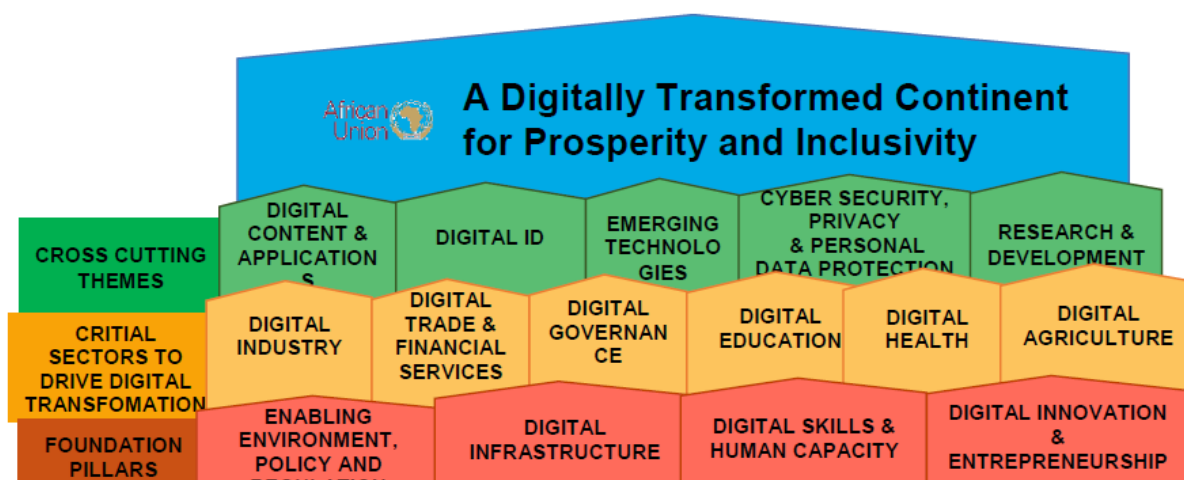
⁴ Another important channel through which digitising services can aid inclusive development is in supporting economic transition and growth in human development to help reduce poverty and inequality. Improved basic services can assist vulnerable populations (e.g. SMEs, rural farmers, girls and women, people with disabilities) in reaping the opportunities of the digital economy by providing skills, autonomy, capital and information.

PART 2

Which policy documents outline Africa’s digital transformation at the continental and national levels?

1. Continental frameworks

Back in February 2001, African Ministers of Civil Service adopted the Charter for the Public Service in Africa, also known as The Windhoek Declaration, which reads: “*The public service shall be organized along functional and decentralized lines designed to bring public management closer to the people and provide them with appropriate and accessible basic services... Physical proximity and accessibility can be achieved by the application of appropriate information and communication technologies (e-governance).*” In the two decades since this charter, numerous other frameworks have been drafted to initiate or guide digital transformation, with explicit reference to improving basic services.⁵



The AU commission’s comprehensive [Digital Transformation Strategy for Africa \(2020-2030\)](#) builds on these frameworks and aligns with the goals set out in Agenda 2063 and the SDGs to support the development of a Digital Single Market for Africa. Digital governance, education, health and financial services are explicitly mentioned as critical sectors for driving overall transformation. Governments are named as responsible for building the foundational pillars upon which digital transformation takes place which, in addition to digital infrastructure, skills, innovation and policy/regulation, include the guiding pillars of solidarity, comprehensiveness, inclusiveness, homegrown, safety, and new mindset. Digitising basic services is also an integral part of the African Development Bank’s [Building Back Better Agenda](#) to increase continental resilience to shocks following the pandemic.

2. National strategies

A number of African countries are taking steps to translate these continental frameworks into national policies, strategies and regulations. Most African countries have now passed legislation around access to information. Some countries have recently developed their own digital roadmaps to guide transition, which overlap significantly with the key pillars of the

⁵ E.g. Flagship AU Agenda 2063 projects such as the Pan-African E-Network for Transformative Applications and Services, and the Outer-space strategy; The Programme for Infrastructure Development in Africa (PIDA); The AU Communication and Advocacy Strategy; The Nairobi Manifesto on Digital Economy.

continental strategy (see [Ghana's digital finance policy](#) and digital blueprint; [Kenya's digital economy blueprint](#); [Nigeria's digital economy policy and strategy](#); [Digital Ethiopia 2025](#); [Digital Senegal 2025](#)). Botswana and Namibia even have specific action plans for the development of e-government. Other countries currently do not have a national digital strategy document, but address issues of digitalisation in their broader economic strategies (see [National digital economy strategies: a survey of Africa](#)). Because of this variation in the prioritisation and translation of digital agendas, cross-country learning around developing, aligning and implementing digital government strategies is a key area for policy research.

How well are African countries performing in relation to these strategies?

In the United Nations [e-Government Survey 2018](#), six African countries – Ghana, Mauritius, Morocco, South Africa, Seychelles and Tunisia – were given a high e-government development index (EGDI), reflecting the range of public services made available online in these countries.⁶ More than 30 other countries in Africa, including Cameroon, Nigeria, Lesotho, Togo and Rwanda, were commended for making [visible progress in e-government](#). In the [2020 survey](#), a further eight African countries joined the high EGDI group - Namibia, Cabo Verde, Egypt, Gabon, Botswana, Kenya, Algeria and Zimbabwe. This included countries in special situations (least developed countries (LDCs), landlocked developing countries (LLDCs) and/or small island developing states (SIDS)), signalling the scope for e-government development in limited resource scenarios.

Despite this progress, Africa remains the region with most low-rated countries in terms of e-government (14 in 2018, and 8 in 2020), and the only region with no countries in the very high EGDI category. Moreover, the integration of technologies within government processes is more advanced in some areas (e.g. tax collection, enterprise creation) than in others (e.g. education), which the national level EGDI cannot reveal. The next part of this document looks more in depth at sectoral-level interventions, their outcomes, and the complex challenges which hold back progress in e-government.

⁶ The e-Government Development Index (EGDI) is a normalised composition index with three components: the Online Services Index (OSI); the Telecommunications Infrastructure Index (TII); and the Human Capacity Index (HCI). The EGDI rates the e-government performance of countries relative to one another.

PART 3

What are the known examples of digital basic service initiatives in Africa?

An estimated [400 e-government initiatives](#) were deployed worldwide in developing and emerging economies as of 2017 (and many more since the COVID-19 pandemic began). Programs span public services in different sectors, including agriculture, education, environment, health, financial services, social protection, civic education and utilities.⁷ These are implemented by governments, often in combination with non-governmental organizations and private sector actors, in a variety of contexts and using a range of digital technologies, from computers to mobile phones to radios.⁸

A few things stand out from this mapping exercise:

1. There are a few leaders of e-government in Africa, who have multiple interventions spanning a range of sectors. These include Ghana; Kenya; Nigeria; Rwanda and South Africa.
2. A relatively large number of inter-governmental initiatives (G2G) exist which seek to integrate management and communication activities between different ministries, and to centralise data and administration processes.
3. Before 2020, there were relatively fewer examples of services led/provided by governments in other sectors, but the pandemic has sparked an intensified use of digital data and technologies within basic services across the board.⁹
4. Outside of government platforms, there are few examples of digital basic services which deliver scaled solutions (mostly at the program level). However, there is an increasing number of initiatives piloting technologies in different countries which promote shared infrastructure and show scope for learning between countries.

What are the known outcomes of these digital service interventions?

PART 1 of this document explained the channels through which digitalisation contributes, in theory, to more inclusive basic services. But despite the hype and allure of digital services, success (in terms of increasing access to and usage of basic services for vulnerable groups) is not guaranteed. Currently, only a fraction of the large number of digital basic service programs are being researched, especially in low-income countries.¹⁰ Evaluations focusing on inclusion are particularly scarce, and where they do exist, evidence is mixed, with outcomes depending on the evaluation criteria, the sector, whether the program is new or upgraded, and the broader socioeconomic and political environments.

⁷ Digital financial services include a range of products (digital transfers, payments, stored value, savings, insurance, credit, etc.), channels (mobile phones, Internet, automated teller machines), and providers (mobile network operators, banks, nonbank financial institutions, and electronic money issuers, retailers, post offices etc). The digitisation of payments can occur at different stages of the payment chain: selection of beneficiaries using digital IDs, management of payment systems using high-frequency data, or money distribution using mobile money or direct bank transfers.

⁸ See the [State of e-governance in Africa](#) report which contains many examples of e-service initiatives.

⁹ Before 2020, there was already a focus on digitizing government transfers (e.g. South Africa's [biometric ID and debit card payment system](#), or governments and large non-profits such as GiveDirectly using mobile money to distribute cash grants to beneficiaries in East Africa). [Digital government initiatives in response to COVID-19](#) have expanded this focus to maintain access to essential services like health, education and utilities, and supporting vulnerable populations through the distribution of social safety nets. Another key use of technology during the pandemic was to spread information and awareness.

¹⁰ An [evidence gap map](#) by 3ie from 2017 containing impact evaluations and studies on technological interventions in different sectors shows that knowledge in this area is still fairly scarce and dispersed in Africa. This is partly due to how recent many interventions (including those born out of COVID-19 responses) are, giving little time to set up robust MEL components. This creates an important gap for evaluative research.

The [existing literature](#) suggests that digital interventions are most successful at making public service provision more efficient, especially within social protection programs and public administration, by lowering costs and increasing the speed of screening processes and transactions. In some sectors, including education and civic education, technology is shown to improve the effectiveness of interventions by ensuring that programs meet their specified goals, such as teacher attendance or learning outcomes.¹¹ Results are less conclusive in digital agricultural and healthcare interventions, despite the relatively large number of initiatives in these areas.

A recent World Bank article, about the [remote learning paradox](#) but relevant across the board, stated:

“The idea that online solutions should get more attention because they are more effective is misleading in at least three ways. First, online solutions don’t reach nearly as many students as offline solutions do, especially those in urgent need of help. Second, there are several examples where expensive online solutions have not only been ineffective, they have reduced student learning. The third way this is misleading is reverse causality...online solutions have a higher likelihood of appearing more effective because they get more investment.”

See Appendix 1 for evaluations of digital service interventions by sector.

Most of the research fails to examine whether digitalisation improves the coverage of basic services, particularly to vulnerable groups, or whether public funds are being optimally allocated to address current needs and reach longer-term goals. Moreover, basic questions of technology access and usability among different population groups (e.g. to do with affordability, language and skill requirements) are rarely considered. Any transition to digitalisation must consider the marked [digital divide](#) present in most African countries, depending on gender, income status, location and age, which skews the distribution of benefits of digitised service programs.¹² These factors could explain some of the ambiguous results and are therefore extremely valuable to explore further.

There is a clear need for research to analyse the impacts of digital basic service interventions from an inclusive angle, and to draw lessons for policymaking in this area. This analysis is extremely pertinent as countries are looking to keep, expand and replicate the digital interventions which have emerged during the pandemic. Without this knowledge, there is a danger that policies and practices for digital basic services will continue under false assumptions and perpetuate unequal trends in development.

¹¹ Evaluations of digital public services can look at various development outcomes. For example, in education, they can assess changes in teacher attendance, learning outcomes and cost-effectiveness; in social protection, they can look at program cost, spending patterns and leakage; in civic education, voter participation and electoral outcomes can be measured; and in healthcare, knowledge transfer, behavioural change and health outcomes can be evaluated.

¹² E-government initiatives that specifically [support and cater to vulnerable people](#), e.g., initiatives designed to enable skills development for the poor/unemployed, or to promote micro enterprises, are not easy to find in most African countries. E-government initiatives need to be redesigned and re-contextualised to address the needs of the majority rather than the few.

Box 2: What we know about inclusion and digital basic services so far.

- In order for digital interventions to lead to inclusive development, they must overcome a specific problem/constraint in the system, in a low-cost and scalable way. In other words, large investments will deliver few results unless they have a clear purpose and do not just replace existing services with the same flaws/limitations.
- Successful programs require buy-in from the relevant ministries in the right technologies, and strong partnerships with e.g. data scientists, service operators, and civil society.
- Beneficiaries are not always the poorest and most vulnerable (but often those which already have access to electricity/internet), which does not contribute to closing the digital divide and leaving no one behind.
- Many innovations are applicable at a small/decentralised scale (they improve the flow of information and service provision for the small number of participants in the program) and the majority of best practices are found at the city level. Financial resources, political will and regulation remain key challenges to extrapolating/scaling interventions.
- Certain elements, particularly digital IDs/data and digital payment systems, can trigger systemic change by enabling coordination/integration across sectors and acting as a catalyst for the further digitalisation of services. The order of decisions/reforms may matter, in terms of prioritising transformation within these 'high-impact' areas.
- Reflecting on the channels for inclusion dissected in Part 1, there is strong evidence for channel 2 (implementation), and to some extent channel 1 (information) for inclusion, but little on channel 3 (participation/feedback).

PART 4

Part of the explanation of why certain digital interventions work and others don't is due to the operating environment. Contextual factors influence the ability of programs to reach target groups and to scale successfully to achieve their desired impact. The [UN e-Government Survey 2020](#) found that financial resources are not the only critical factor in e-government development. Strong political will, strategic leadership and commitment to expanding the provision of digital services have all allowed countries to surpass their expected e-government ranking, while gaps in infrastructure and human capital have prevented many countries in the region from advancing to higher e-government levels.

From a brief review of existing literature, there appears general consensus on the fundamental conditions (or pillars) of an inclusive system of digital basic services, as well as common pitfalls which prevent them from being reached (see in particular [Aker, 2017](#); [Hafkin, 2009](#); [Haldrup, 2018](#); [Jayaram and Leke, 2020](#); [WEF, 2020](#); [UN, 2020a](#)). These pillars are central to the AU continental strategy (see Part 2), and reflect the UNDP's cross-cutting concepts of e-governance (see Part 1).¹³

What are the conditions necessary to realise effective and inclusive basic services in Africa through digitalisation?

1. Technological infrastructure:

ICT infrastructure relates to the hardware and networks which connect people with service providers, and that can withstand growing usage and changing technologies. Universal electricity and mobile coverage, and near universal internet access, are cornerstones of the AfCFTA, the PIDA program, and the majority of digitalisation strategies across Africa. However, the region lags behind the rest of the world in the [reach and quality of broadband penetration](#) access to electricity and mobile technology are still lacking in many rural areas. Due to the strong link between network coverage and technology adoption/usage, resolving infrastructure challenges is fundamental for building digital basic service systems.

2. Human capital:

Nearly [half a billion](#) people in Africa have mobile broadband coverage in their area, but lack the know-how to use it. This points to a bigger problem of literacy and skills for service providers and users. These [skills range](#) from basic mobile transactions, word processing, email and managing privacy settings, to more advanced coding, design, marketing and analysis. Currently, only 2% of the labour force have adequate IT skills, offering a huge new resource in skilling Africa's youth and upskilling the current workforce. This will be key for developing Africa's 'tech intensity' (the ability to maximise the use of technologies). Digital talent and entrepreneurship would further support more local innovation to drive locally-relevant solutions.

3. Regulatory environment:

Clear and enforced legal frameworks are needed to ensure affordable data and safeguard rights to information and intellectual property. Having an agency responsible for setting technology standards and laws on data protection helps to mitigate risks of exploitation, exclusion and decreased ownership that come from the new 'scramble for

¹³ This does not imply that meeting all of these conditions automatically leads to universal access and usage of basic services. Naturally, certain conditions may be more or less important in different contexts/sectors – e.g. human capital in education, infrastructure in social protection, and regulation in water. But it sets a minimum requirement, or a foundation on which different actors can deliver effective and innovative solutions and hold governments accountable.

Africa' by MNCs/tech giants, as well as the outsourcing of public services to other actors.¹⁴ In Rwanda, the [price of 1GB of data](#) in 2020 was less than one fifth what it was in 2015, falling from 20.2% to 3.39% of average monthly income. This has allowed Rwanda to make faster progress than its East African neighbours who have less effective national broadband planning. It is also important to remove regulatory barriers for smaller providers in order to extend networks quickly and affordably in underserved areas.

4. Public sector culture:

Lack of political will and resistance to rapid technological change are commonly cited as two of the biggest factors inhibiting public sector reform and the implementation of e-government strategies. Buy-in from the *relevant* ministries in the *right* technologies (those which suit the level and needs of local development, rather than those which offer status or earnings) can make the difference between a program that serves and one that fails or excludes. Engagement with public actors to increase their understanding and awareness of the benefits, opportunities and risks of digitalisation could help to strengthen techno-leadership and cooperation, which are key for forming strategic public-private partnerships and pushing forward the digitalisation agenda.

5. Institutional capacity:

Within the institutional setting, technical capacity determines the degree of ownership and adoption of useful technologies (e.g. GIS, big data systems) by governments at different levels, while financial capacity determines the budget available to keep investing in maintaining and expanding effective programs. The integration and redesign of government organisations and processes, such as the collection, management and usage of data, the expansion of digital IDs,¹⁵ and new mechanisms for financing, would help to maximise the gains from technology.

What are the main challenges/risks associated with transitioning to digital basic services?

1. Misunderstanding the purpose of digitalisation:

Technology has, in many cases, come to be viewed as an end goal or a silver bullet rather than part of a broader system of digitised development, with the underlying assumption that the more hi-tech the better. This has led to interventions which do not reach the poor and vulnerable, which try to replace rather than complement existing efforts that work, and which do not easily scale or integrate.¹⁶ An overemphasis on complex technologies steers away from holistic change which translates services into wellbeing. With approaches that places citizens (rather than technology) at the core of digitalisation programs, the driving principles remain the same but the modality changes and scales over time to balance current and future needs.

2. Design and implementation which fail to account for local inequalities:

Smartphone usage is still primarily concentrated in urban, wealthier and more highly education populations, internet usage varies from 56.2% in South Africa to 1.3% in Eritrea; and lower access and usage rates of digital services are observed for women, the extreme poor, persons with disabilities, and other marginalised groups. It is crucial to ensure the appropriate type of technology (devices, platforms, low-tech (radio and SMS) vs. hi-tech (drones, AI and big data)) is used to deliver services in a given location or to a

¹⁴ Some basic services have relatively few providers, which is optimal in markets with economies of scale and high entry costs, but without regulation, can lead to high prices, lower quantity/quality, and exclusion.

¹⁵ Approximately 1 billion people globally lack an officially recognised ID and therefore face barriers to accessing critical services and exercising political and economic rights.

¹⁶ E.g. EdTech on its own does not close learning gaps, but teachers and learners can be helped by the [right EdTech tools](#); and information is only useful to farmers if they have access to credit markets and sufficient bargaining power.

certain group. Place-based policies could help to bridge digital divides and avoid systemic exclusion.

3. Power and political will:

Data politics, poor governance, and weak institutions have become central to explaining the under-provision and low quality of public services in developing countries. Digital technologies went from empowering citizens and promoting democracy to being used for censorship.¹⁷ Governments play a complex role as both users and providers of digital services, as well as regulators of digital transformation, causing a conflict of interest since the public sector can benefit from unethical play. Outsourcing internet provision to private actors can inflate costs and create digital exclusion. Incentives must be put in place to build trust/cooperation rather than resist change.

4. Insufficient data and evidence for local decision makers:

A lack of knowledge around on works in different contexts and tools for building human capacity and partnerships delay action on digitalisation strategies. For instance, most education systems around the world are decentralised, but local decision makers lack [granular information](#) to gain a sense of how to reach every child (what technology is available within each household), where the gaps are (how much each child has fallen behind), and what modalities are effective locally.

5. Sustainable mechanisms for financing and procurement:

The UN Broadband Commission for Sustainable Development estimates that an [additional \\$109 billion](#) in investment is required to achieve universal, affordable, and good quality broadband internet access by 2030. In the context of contracting economies, declining foreign aid and shrinking fiscal space, innovative financing tools are critical for investing upfront in the areas necessary to implement, sustain and scale digital service interventions.

6. Safety and security:

Governments around the world are committed to supporting the roll-out of national digital IDs and integrated information systems, but ‘future-proofing’ these technologies to safeguard against potential harms and risks to consumers remains a major challenge. These risks have been particularly exposed during the COVID-19 pandemic, as the ramp-up in the use of technology for services has created gaps for exploiting consumer safety, data privacy etc.

7. Stakeholder participation: The majority of initiatives so far are more focused on administrative streamlining than improving the participation of non-governmental actors. The body monitoring transformation should be as diverse and inclusive as possible to ensure that all interests are known and met. This includes public-private partnerships, citizen feedback, representation of minorities, multi-ministerial leadership, civic space in the digital realm, and integration between different levels of government.

¹⁷ See the [Digital Rights Landscape report](#) for multiple examples.

PART 5

Which aspects of inclusion are crucial to consider in debates and policy around digital services?

“Various scholars have argued that in order for innovations to be relevant and effective for the poor and marginalised, these need to be applicable to a specific problem and context, affordable at low costs, and accessible to all (triple AAA)”
(Pouw, 2020, pp.5).

So far, we have mostly considered the supply-side of basic services, however, it is also necessary to analyse service outcomes from the beneficiary/demand-side perspective, in particular what is important to reach the poorest of the poor. Combining INCLUDE’s critical lenses for analysis around inclusion (particularly social and spatial equity) with the Dutch MFA’s framework on digitalisation, contributions from our platform members during the November platform meeting, and other supporting literature, the following key aspects of inclusion are critical to consider in debates and policies around digital services:

- **Access** (including access to electricity, internet and devices, and the availability of a government account/ID and bank account)
- **Affordability** (of the hardware and software needed to access and use digital services, as well as, for example, digital skills programs, e.g. the price of 1GB of data as a share of household income)
- **Usage** (linked to the quality of the service, the languages and modalities offered, information on when/where/how to use the service, and the skills of beneficiaries)
- **Appropriateness** (local/contextual relevance, linked to the lifestyles/cultures of beneficiaries)
- **Safety** (data privacy)
- **Participation**

Box 3. Major knowledge gaps in this field.

1. The extent to which the critical conditions for transformation, which are central to the AU continental framework and unanimous throughout the literature, are being met within different African countries.
2. The inclusive lens. Evaluating the design, implementation and outcomes of digital basic service interventions using selected/agreed-upon inclusion criteria, to understand the extent that current interventions reach the most marginalised and what can be done to improve targeting/delivery.
3. Scaling. How to take successful small pilot programs and make them accessible and cost-effective at a broader scale, and how to do so without excluding vulnerable groups.
4. Which reforms will help to address gaps in access, affordability and usage for different areas and population groups (e.g. rural and urban, men and women, youth and elderly, disabled persons, migrants and nationals, income groups, more- and less-educated) in a given country/sector?
5. How donors can support these reforms.

Research aims

In light of the information found through conducting this background literature scan, the main goals of this research programme will be:

1. To take stock of digital basic service interventions in different African countries (especially since the boom in digital services in the wake of the COVID-19 pandemic).
2. To assess how inclusive these interventions are in terms of reaching and improving the wellbeing of poor and vulnerable citizens.
3. To analyse progress in the enabling environment for inclusive digital transformation (incl. physical infrastructure, digital skills, regulation, political economy, and institutional capacity) to see where efforts and investments could be prioritised.
4. To extract lessons and best practices for scaling digital basic services and making them more inclusive in order to reach and support those furthest behind.

Key elements of the research should include:¹⁸

- A focus on government-to-citizen services which affect the poorest and most vulnerable people in Africa – education, social protection, healthcare – as well as inter-governmental services like digital administration and identity.¹⁹
- A look at the how existing continental and national policy frameworks for digital transformation are playing out on the ground to help narrow the gap between vision and reality.
- Going beyond access to basic services, to also look at usage, affordability, relevance and participation – the different aspects of inclusion which might explain why certain interventions do not work and can help to guide action in this area.
- Disaggregated evidence on the impacts of digitalised services on rural and urban populations, women, youth, the elderly, and people with disabilities, to help guide localised/flexible implementation.
- An examination of the political economy aspects of digitalisation, to understand the impacts of democracy, transparency and data privacy, the importance of online civil space, and the role of donors and the private sector.

Research approach

The research programme will follow a two-pronged approach. First, case studies will be conducted at the country level, comprising an in-depth context assessment, a mapping of digital service interventions, and an analysis of inclusion (looking at design, implementation and outcomes). This will then conclude with a synthesis that compares digital developments in basic services through a sectoral lens in order to extract some best practices and facilitate learning across countries (for example, highlighting high-impact areas for scaling and integration like digital data and payment systems).

The structure, methodology and format of the case studies can be found in the call for proposals, along with a breakdown of the research questions. The same information for the synthesis can be found in the call for the synthesis report.

¹⁸ See the foundation document for elaboration on the key elements, for example, pp.3 for a typology of digital basic services; pp.13 for the various aspects of inclusion.

¹⁹ Intergovernmental services are especially important to look at in contexts with more decentralised governments.

Annex 1. Evaluations of digital service interventions by sector

Education

- What really matters in EdTech is [cost-effectiveness and scalability](#). Evaluations show that digital education initiatives have a [low number of beneficiaries](#) compared to the number of people who need the service. Given the costs and barriers to entry, it isn't clear that EdTech interventions will always achieve higher learning gains than other interventions.
- [Self-led learning software](#) is one of the most promising areas of research in terms of the effects on student learning. But access to hardware, in terms of distributing devices to every child, is less cost-effective.
- Although not universally positive, findings suggest that technology in education can effectively complement or substitute for existing inputs when the infrastructure is in place to support it. However, most of the technologies evaluated are [used in school settings](#) with more stable access to electricity and internet connectivity. There is still limited evidence for technology that allows for distance learning where access to school is not available.
- 4945 STEM teacher participants from six Sub-Saharan African countries - Kenya, Tanzania, Uganda, Ethiopia, Ghana and Nigeria - were involved in an [instructional digital professional development program](#) to build their capacity for using ICT within school organisational and curriculum practices. Participants were generally satisfied with the content and processes of the training program, however, essential conditions to support the transfer of ideas to the school level were deemed inadequate during the period of implementation.
- There is a [paradox](#) emerging within education. Governments are prioritizing online solutions to minimize learning losses, but the students most at risk of learning losses can't access online solutions. The [UNESCO GEM report](#) revealed that 60% of national distance learning programs rely exclusively on online platforms, yet up to 80% of children in Sub-Saharan Africa do not have access to internet at home. These students – most often from low-income or rural households – are de-facto excluded.
- In a study by UNICEF, students in rural areas consistently represented the vast majority of those who [could not be reached](#) by any of the three remote learning modalities analysed, irrespective of the country's level of economic development. Boys and girls were evenly represented, and children from low-income households overrepresented (more so in middle-income than low-income countries) in the group of children that could not be reached by remote learning solutions.
- Educational TV and radio broadcasts, in combo with SMS, are [effective communication channels](#) between educators and students when internet connectivity is poor/unavailable. Eight [rapid reviews](#) in response to COVID closures look at learning outcomes and access through TV, radio and SMS learning tools in LMICs, as well as girls' education and EdTech, education of refugees, and education during emergencies.
- The [IIEP-UNESCO policy toolbox](#), holds over 500 policy options for education management, classified under 'Access and completion'; 'Learning processes'; and 'Equity and inclusion'.

Social protection/financial services

- [Evidence for positive impacts](#) of digitised social protection: reduced travel time and transaction costs; reduced delays and uncertainties (leading to planning and investment); improved access to financial products and services (e.g. loans and

savings – gateway for financial inclusion); flexible payment modalities (value and timing, to coincide with seasonality/school fees).

- Digitalising social protection information can [reduce fragmented, isolated social protection interventions](#), supporting a systems approach to universal social protection and linking social protection recipients to other services and support. Electronic payment delivery systems have been found to improve transparency and accountability and reduce leakage (Public Expenditure Tracking Surveys (PETS)) compared with cash-based manual mechanisms. Lower implementation costs (but requires the digital infrastructure, so upfront costs high); more effective monitoring (responsive, targeting, digital footprint across other government departments).
- Technology is a tool, and can exacerbate existing problems/create new ones, e.g., exclusion (unregistered individuals, digital literacy, knowledge of these services) or predatory behaviour and privacy concerns (led into getting financial products they do not need, unknowingly giving information).
- [Trade-offs, challenges and risks](#) can emerge, including increasing costs and complexity, risks to data privacy and security, and risks of multiple exclusion from all social sector schemes – as an integrated approach to intake/registration could lead to a systematic exclusion of certain households; for example, if there is a problem with data collection or administrative requirements such as the lack of an ID card.
- Digital finance tools increase access to education by smoothing household payments on education over the year, increase transparency of public funds, and increasing teacher presence. In Cote D'Ivoire 99% of secondary school payments were made using mobile money in 2015-16 school year, which increased overall revenue and data collection, and saved time and money. But there is still limited coordination between government, mobile money providers and schools.
- Using digital payment systems have been found in multiple countries to [reduce operational expenses and streamline service delivery](#). In particular, digitising payments have reduced collection and payment costs for water bills, and increased customer reach by linking to prepaid “smart” meters to create an improved, pro-poor service. It has also enabled governments and other providers to subsidise low-income water access more effectively. However, capacity to analyse and too few mobile money users were limiting factors.
- [Digital technology could help create a more gender-equal society](#). The private nature of digital payments, as opposed to cash, can help women gain more autonomy over their income and spending. Mobile money has also been shown to have a greater poverty-reducing impact on female-headed households. However, one needs to be cautious when implementing digital solutions to ensure that they do not lead to further division; especially since women's access to and use of digital technology tends to lag in comparison to men.

Agriculture

- Factors driving the [low adoption of new technologies](#) for Malawian farmers. As a decision-making process, adoption is affected by farmers' access to info, financial and human capital, incentives and external programs, plus attitude to risk. (More than distributing devices).
- Like many similar interventions, WaterApps, which provides information for farmers in Ghana, was small-scale and didn't reach the very poor, since beneficiaries were already somewhat entrepreneurial and looking to increase productivity, and living in per-urban areas which had internet and electricity available. Encouragingly, quite a few women benefited from the program.
- [Esoko](#) – Ghana, The Planting for food and jobs' program is a Ministry of Food and Agriculture (MoFA) initiative aimed at profiling all 5 million farmers in Ghana to create a national database that makes it efficient and easy to implement input subsidy

programs. In 2017, Esoko was contracted to collect biometric and spatial data of 200,000 farmers; recruit and supervise 400 field agents; and provide a real-time reporting dashboard for the ministry to make data-driven decisions on input subsidies.

Water

- The [order of play is important](#). 1) Identify the main areas where digitalisation is already delivering operational savings for water companies (both decentralised and centralised) in emerging markets: delivery and monitoring, billing and payments, and reporting and feedback. 2) Decide which departments or processes to digitise first and how to integrate the digitised parts with those that are not digitised yet. 3) Determine the phases of adoption, from basic operations to full systemic transformation. 4) First stage - switching to digital payments (a fast way to increase efficiency); training employees; partnering with mobile operators.
- Technology, by itself, cannot bring radical change (let alone “disrupt” a pre-existing market solution). Digital solutions have been designed/are starting to be used for water reuse, resource recovery, and desalination, as well as real time water quality and quantity monitoring. The sector is ready tech-wise to take on the shift, but a few important elements missing in the process - [Regulation](#) (sometimes disruption happens first, and prompts a shift in regulation; but regulation plays a more prominent role in a sector traditionally managed as a natural monopoly and constrained by the recognition of water as a human right); and [Scale](#) (many innovations are local and applicable at a smaller and decentralized scale; most of the best practices showcased are found at the city level - municipal agencies’ financial resources and political will remain a challenge).
- Mobile devices, technologies, and services have the potential to [improve service delivery to remote populations and the bottom line](#) for water and sanitation service providers. In addition to monitoring how water, sanitation, and hygiene (WASH) systems function, mobile technologies can be used to deliver financing and payment solutions, to collect reliable data on usage and operations, and to identify gaps and inform policy decisions.

Participatory governance

- Digital technologies have [enabled young people](#) to respond to the challenges of COVID19 through youth-led activism and community engagement. However, access, awareness and the quality of skills-building opportunities are unequal (infrastructure, devices & data).

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