

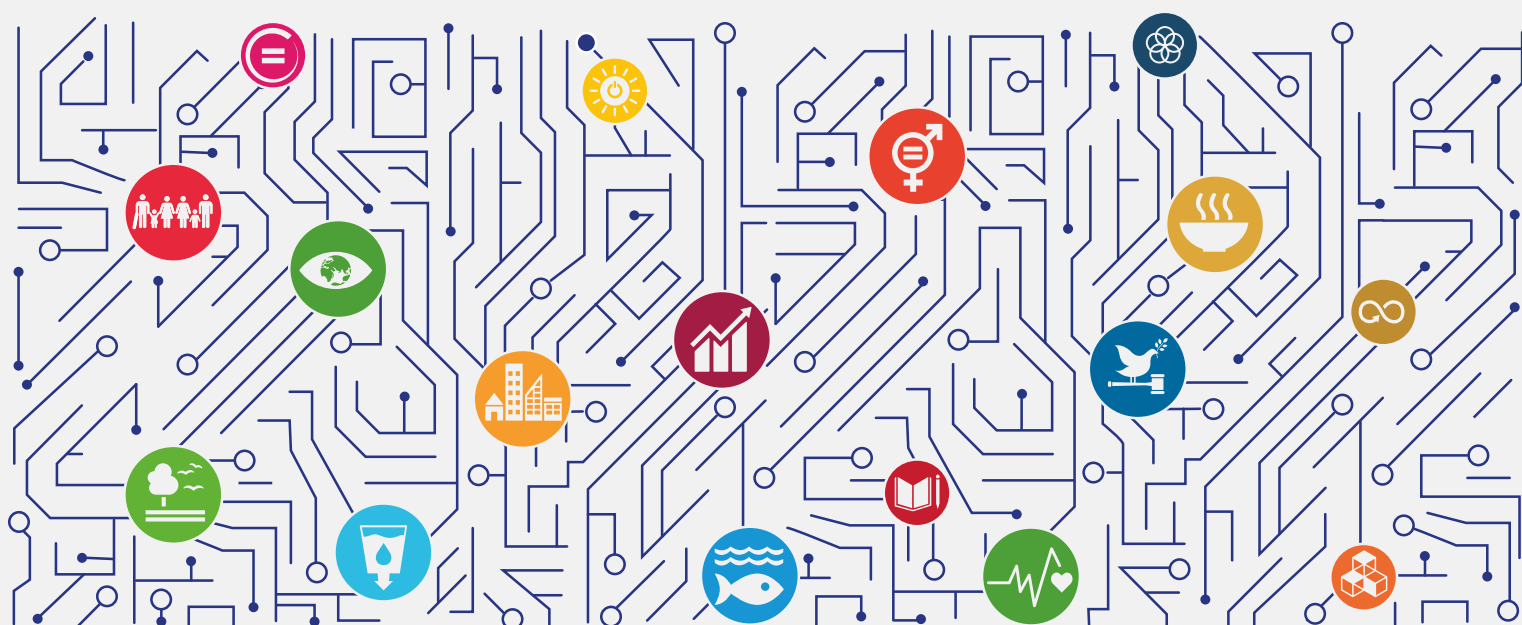


Unlocking Public and Private  
Finance for the Poor

Several circular icons made of colored segments, representing the Sustainable Development Goals, are arranged around the title.

# INCLUSIVE DIGITAL ECONOMIES

for the SDGs

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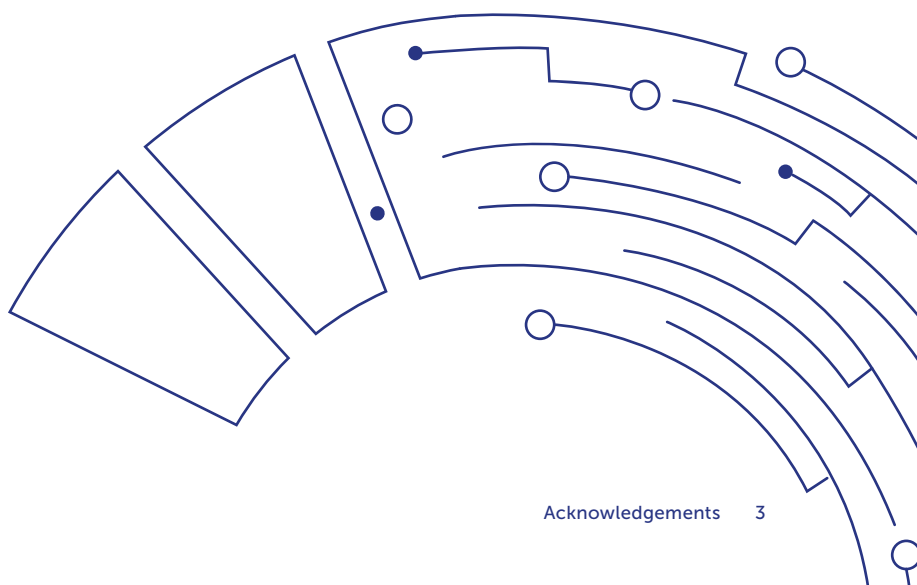
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# FOREWORD

As the world still struggles to confront the COVID-19 pandemic and its dire consequences, there is no doubt that technology has fundamentally reshaped our day to day lives. Technology has changed how children are taught, jobs are created, health services are delivered, traders do business, farmers get access to information, financial services are delivered, and the list goes on. Technology has enabled us to stay connected socially, professionally and as consumers. Innovations that were nascent or slow to pick up are now integrated into our everyday lives, while also shaping new pathways to progress and development.

Despite the positive and promising outcomes that have and are continuing to emerge, there is a growing concern that such outcomes will not be inclusive; particularly for the underserved communities in the world's 46 least developed countries (LDCs). During the COVID-19 response, many LDCs were not able to pivot their economies and education systems online and marginalized populations like women, youth, migrants, people with disabilities and smallholder farmers suffered and are still suffering the most. People living in the world's last mile need our attention more than ever, specifically to avoid a 'lost decade' of development as the UN warned in the Financing for Sustainable Development 2021 report.

LDCs are united in their need for more infrastructure and investment to participate in the new digital economy and its promising foundations for progress. At the same time, the possibility to develop the infrastructure could very well emerge at scale and at an affordable cost. In short, the opportunity for a digital transformation has emerged, specifically by leveraging a market systems development approach that creates an ecosystem for an inclusive digital transformation for the people and

communities in the LDCs. But taking advantage of this opportunity requires a concrete set of actions to enable a transformation that spurs development and contributes to the SDGs: policy changes, modern infrastructure and open systems, private sector development and innovation as well as digital skills development in LDCs.

For over a decade, our UNCDF team has engaged and supported the digital finance ecosystem and the diverse array of companies and institutions that can support the digital transformation we seek: telcos, banks, microfinance institutions, fintech companies, ministries, regulators, donors, and peer UN agencies. UNCDF's initiatives in digital financial inclusion, which has connected 18 million people in Africa, Asia and the Pacific, is now the foundation for our team and our partners to approach the next level: leveraging digital payments to provide much-needed services in energy, health, education, business management and e-commerce among other fields. Accessing financial services is a necessary step to moving out of poverty. To reach the next level, we need to connect these essential services to digital financial services and payments.

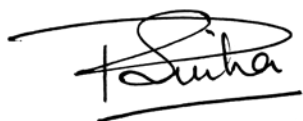
In this paper, the UNCDF team shares its analysis and use cases that feed our vision of building digital economies in LDCs that leave no one behind. This analysis and vision are built on our growing experience in digital services, in collaboration with multiple partners from the public and the private sector as well as international organizations and the UN system. The portrait this paper presents would not be complete without the views and contributions from the stakeholders that support such ecosystems. Hence, UNCDF invited its partners to contribute and we are honored to include their perspectives on the topic of building inclusive digital economies.



In gathering a variety of authoritative voices, our report seeks to address and answer a variety of questions. How is the growth of digital finance leading to the emergence of digital economies and creating more opportunities to fast track the achievement of the SDGs? What is a market development approach and what role does it play in accelerating the development and adoption of digital finance? How is data enabling policy change as well as product improvements? What will it take to leave no one behind and who needs our attention most? How are digital financing innovations revolutionizing ways to finance the SDGs?

UNCDF sees huge opportunities for businesses to serve those being left behind. New business models are emerging in a range of sectors, including agriculture, energy, education, entrepreneurship, health and transport, targeting previously excluded populations with affordable and accessible services. In this paper, you will learn how these services can allow people to lead more resilient and secure lives. And importantly, how these services are not merely viable, but represent sound business opportunities.

By Preeti Sinha,  
Executive Secretary,  
UNCDF

A handwritten signature in black ink, appearing to read 'P. Sinha', with a horizontal line underneath.

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## PART 1

# WHERE ARE WE HEADING?

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## SECTION 1.1

# HOW IS THE GROWTH OF DIGITAL FINANCE LEADING TO THE EMERGENCE OF DIGITAL ECONOMIES?

By François Coupienne



## HIGHLIGHTS

- By 2025, unique mobile subscribers will reach 71 percent of the world's population while mobile internet capability will reach 61 percent.
- The development of tailored suites of services for women (SDG5), youth (SDG8), refugees, migrants, elderly, disabled and rural populations (SDG10) in sectors such as agriculture (SDG2), health (SDG3), education (SDG4), water (SDG6) and energy (SDG7) allow Least Developed Countries (LDCs) to develop inclusive digital economies that reduce poverty (SDG1), increase resilience and improve economic opportunities for all citizens.

The past two decades have seen a phenomenal change in the adoption of mobile and digital technology in emerging markets. The sector predicts that unique mobile subscribers will reach 5.9 billion by 2025, equivalent to 71 percent of the world's population. However, a more significant opportunity lies in the associated mobile internet capability reaching 61 percent of the population in the same period.<sup>1</sup> The growing ubiquity of mobile phones has led

many people to use them as their primary means of accessing a wide range of services. Still, common barriers such as cost, literacy and availability have prevented many users from progressing beyond basic services, such as calling and messaging. Despite the proliferation of technology, the successful development of inclusive digital economies will only be achieved if all citizens can access and use digital services that positively impact their daily lives.

Inclusion in the digital era is not a given. Technology itself is neutral, and can lead to increased exclusion, depending on how it is deployed and whether it is accompanied by measures to ensure that new forms of exclusion are not introduced. Although digital technologies can leapfrog

<sup>1</sup> Global System for Mobile Communications Association (GSMA), *The Mobile Economy 2018*, London, 2018.

traditional models of market expansion, adoption often depends on whether intended clients understand, accept and perceive the added value from those financial and non-financial digital services. Bridging the digital divide is not a question of pushing access to and usage of technology; it is about taking a user-centric design approach and tailoring the right services to improve people's lives and livelihoods.

User-centric approaches are also improving the adoption of digital and digitally-enabled solutions among people who are new to using mobile phones, or lack access to such devices. These approaches use a combination of digital technology and low-touch delivery by people in the community ('tech and touch').<sup>2</sup> For example, over-the counter services offered by agents have enabled the use of mobile money by many marginalized communities in Africa.<sup>3</sup> In Uganda, Digital Community Entrepreneurs have effectively increased the use of new and previously unknown digital services, such as pay as you go solar.<sup>4</sup>

To achieve the Sustainable Development Goals (SDGs), it is vital that Least Developed Countries (LDCs) succeed in making digital economies inclusive. The development of tailored suites of services for women (SDG5), youth

(SDG8), refugees, migrants, elderly, disabled and rural populations (SDG10) in sectors such as agriculture (SDG2), health (SDG3), education (SDG4), water (SDG6) and energy (SDG7) allows LDCs to develop inclusive digital economies that reduce poverty (SDG1), increase resilience and improve economic opportunities for all citizens, including marginalized segments.

## THE ADVANCE OF DIGITAL FINANCE

Beyond the extensive use of mobile phones for calls and messaging, there is a rapid increase in the adoption of digital finance globally. This has accelerated in the past decade, led by mobile network operators and digital platforms worldwide. From 2008 to 2019, the mobile money industry recorded 1 billion registered users.<sup>5</sup> Digital platforms, such as Alipay, WeChatPay, Grab, GoPay and WaveMoney, have registered more than 2 billion users for their financial services.

This wide availability of digital finance offers tremendous opportunities for improving the lives of billions of excluded citizens, as illustrated below.



Joshua is a dairy farmer from the Mbarara region in Uganda. His wife Janet and their five children live on a 16-hectare parcel of land 2 kilometres from the centre of the village. Joshua has three cows. Every day after milking them he pushes his bicycle with his milk jugs, which typically contain 20 litres of milk, to the dairy cooperative in his village. At the cooperative, the quantity and quality of the milk are calculated and manually registered in the milk ledger. Fortnightly, the cooperative calculates the amount to be paid to each farmer, at which point Joshua cycles back to receive his USh336,000 (US\$91) payment in cash. Back home, he hides part of the money in a pot under his roof; his goal is to buy another piece of land and two more cows. He also keeps USh20,000 (US\$5) for the family's day-to-day expenses. In 2018, the dairy cooperative decided to leverage digital technology to increase efficiency. It digitized the milk ledger and farmers' payment process; Joshua opened a mobile money account. Today, the milk ledger is updated via a tablet each fortnight. At the push of a button, the cooperative automatically reconciles the ledger and pays its 234 farmers via mobile money. Joshua does not have to pedal back to town to receive his payment. He has started saving on his mobile money account and now keeps a minimum of cash at home.

<sup>2</sup> [https://content.accion.org/wp-content/uploads/2018/10/1122\\_TechTouch-RQ6-Singles.pdf](https://content.accion.org/wp-content/uploads/2018/10/1122_TechTouch-RQ6-Singles.pdf).

<sup>3</sup> <http://finclusion.org/uploads/file/FINAL%20SENEGAL%20-%20UNCDF%20MM4P%20Senegal%20.pdf>.

<sup>4</sup> [www.uncdf.org/article/6446/digital-community-entrepreneurs---going-the-extra-mile-to-close-the-digital-gap-in-rural-uganda](http://www.uncdf.org/article/6446/digital-community-entrepreneurs---going-the-extra-mile-to-close-the-digital-gap-in-rural-uganda).

<sup>5</sup> Global System for Mobile Communications Association (GSMA), *State of the Industry Report*, 2019.

Tui is a vegetable and herbs vendor. She has a stall at the Phontong market in the Lao People's Democratic Republic. Tui recently bought a smartphone and opened a wallet account with a local fintech company. With her smartphone, she exchanges information and tips to improve her business with her peers in social media groups. Her mobile money account has created opportunities to store money digitally and to receive payment via a QR code from her customers.



The list of cases continues in the following chapters. Here you can read more examples about the transformational impact of the digitalization of services, businesses and government.



## DEFINING DIGITALIZATION AND DIGITIZATION<sup>6</sup>

The term 'digitization' refers to the use of digital technology to convert physical information into digital formats for efficiency, such as automating a paper process that already exists.

The term 'digitalization' refers to the use of digital technology to adopt fundamental ways of doing business. Digitalization means overhauling an organization's entire business model, creating better ways of serving clients and partners.

## BUILDING INCLUSIVE DIGITAL ECONOMIES

For Joshua and Tui, mobile phone ownership and digital finance have been the primary route to financial inclusion. However, financial inclusion is not the end goal; it is a means to multiple ends. Meaningful digital financial inclusion has to provide outlets for low-income account holders to engage in the economy in order to meet their daily needs and to improve their skills, productivity and marketability in the digital era. Joshua is now keen to have agricultural training to improve the quality and quantity of the milk he produces, as well as a loan to buy another piece of land and more cows, and better access to the marketplace, so that he can buy agricultural inputs and energy for his farm. Cash advances can be

provided by buyers to farmers such as Joshua through mobile money and alongside extension services, when they directly enter into purchasing agreements for their produce. To meet unexpected expenses, farmers are often forced to sell their crops early and at poor prices. To address this challenge, Ibero Uganda introduced a mobile money cash advance<sup>7</sup> to help coffee farmers avoid selling early. The introduction of such digital financial services within supply chains can increase farmer productivity and revenue.

<sup>6</sup> United Nations Development Programme, "Future forward: UNDP digital strategy", <https://digitalstrategy.undp.org/introduction.html>.

<sup>7</sup> Mastercard Foundation, "Lessons learned from Ibero Uganda's approach to financially including coffee farming families", <https://frp.org/knowledge-hub/blog/2020-case-study-strengthening-agricultural-supply-chains-through-delivery>.



Tui would love to have access to an online marketplace to buy her supplies and have a wider variety of choices. She would like to learn more about financial planning and budgeting, so as to further grow her business, and she would be pleased to have access to better health and education services for her family. For vendors such as Tui, digital financial services can be used to pay for goods online when there is high trust between producers and their suppliers. To fully leverage digital marketplaces in order to expand her source of suppliers, the use of a digital account with an escrow function, where funds are only released upon her satisfactory receipt of goods and services, can be powerful tools to enable economic activity. For example, Alibaba has introduced digital escrow accounts to break down trust barriers and expand activity in its Taobao e-commerce marketplace.<sup>8</sup>

Two decades ago, no government, financial service provider, agricultural input dealer or energy provider would have possessed a business model to offer such tailored services to citizens like Joshua and Tui. The cost of developing a physical distribution network and relationships with low-income customers was prohibitive. Today, 7 out of 10 people globally has access to a mobile phone, unleashing tremendous opportunities. Digital technology offers governments, companies and individuals the possibility of establishing a **one-to-one relationship** with 70 percent of the world's population. It allows the secure exchange of information – to perform transactions, establish dialogue, make payments and share real-time emotions. Furthermore, the data collected enable governments and companies to **tailor services that fit each individual's needs and to continuously refine those services over time**,<sup>9</sup> instead of developing one-size-fits-all services for a whole country. A financial service provider can now analyse Joshua's cash-flow transactions and offer him a tailored loan to expand his business and revenues. An agro-input dealer can access information about his farm and advise him on the best way to increase production. A health service provider could offer Tui remote advice and a diagnosis while she is at home with her family. Tui's children could access specific education content tailored to their age and interests.

There is another significant paradigm change for the future of the digital era. Two decades ago, delivering a service to Joshua or Tui involved making a physical journey to their doorstep. It was a cumbersome process, resulting in limited competition, few options to choose from, and financial services that didn't seamlessly link

to their use in the real economy. Now, with a phone in their hand, Joshua and Tui can browse a wide range of digital services offered by various providers. The digital nature of products and services, such as finance, allows for them to be combined and embedded into other digital services, such as agriculture. This shift to digital is blurring the distinctions between sectors (agriculture, finance, energy, etc.), as Joshua and Tui choose the services that bring the most value to accomplish their goals in the real economy, not just the only service available next door.

In the digital era, the future of financial inclusion will not depend exclusively on developing the right payment, the right loan or insurance product. It will be about developing a suite of tailored and interlinked services in various sectors (agriculture, energy, health, education, transport, commerce, etc.) that offer compelling value propositions for each customer. Financial services will not be supplied on their own, but will be a part of a broader range of financial and non-financial services seamlessly embedded together. Joshua, for example, has developed a relationship with an agricultural platform; his interactions provide useful information, such as his use of inputs and production history, which can be used to tailor services to him by banks or other agribusinesses on the platform. This information can support services that address both his financial and non-financial needs, such as those that can help him to improve productivity.

Financial health is a concept that provides a compass for viewing the improvement realized in digital economies. It enables us to look at the impact that we want to have on the inclusive digital economy – impacts associated with the use of financial products and improved access to other critical services, enabled by digital infrastructure and digitally-enabled business models. These in turn lead to increased ability to manage cash flow, absorb shocks, and plan for the future, as well as to access health care, invest in education and have improved economic opportunities.

<sup>8</sup> Bank for International Settlements, "Annual economic report 2019", [www.bis.org/publ/arpdf/ar2019e3.pdf](http://www.bis.org/publ/arpdf/ar2019e3.pdf).

<sup>9</sup> With the use of data, machine learning and artificial intelligence.



Digital finance is a key foundation for a digital economy that can achieve the Sustainable Development Goals. Now that many more people are digitally connected and providers can serve them, we must ensure that all marginalized segments benefit from these services and that 'no one is left behind'. Digital transformation in many LDC economies is only just beginning, providing the opportunity for all stakeholders to proactively embed inclusion early in the process. By listening to and engaging with women, youth, refugees, migrants, the elderly, disabled and rural populations, we can ensure that digital development responds to their needs. Issues that will determine their inclusion are skills, access to digital infrastructure at the last mile, user-centric innovation, and enabling policy and regulation. The following chapters address inclusion considerations for each of the most critical marginalized segments.

Partnership (SDG17) and innovation (SDG9) must be core components of the digital era, if these new digital financial and non-financial services are to be brought to marginalized groups. Such services are critical to increase the resilience of these people and to improve the economic opportunities available to them. UNCDF is committed to making partnerships and innovations a reality. This report outlines the key issues ahead – and shows that this opportunity is within reach.



## **"WORKING TOWARDS A HUMAN-CENTRIC DIGITAL FINANCIAL INCLUSION"**

By Cécile BILLAUX,  
Micro-economic Analysis, Investment Climate,  
Private Sector, Trade and Employment, EU

Health and economic lockdowns as a result of COVID-19 are severely harming the world's poorest populations and exposing structural flaws in our ability to address some of the most pressing issues. The economic consequences of this crisis have already reversed years of progress to reduce global poverty worldwide<sup>10</sup> and pose serious risks to the effectiveness of the global development system in responding to the crisis.

In our journey towards a 'Build Back Better' recovery, we need to profoundly embrace the opportunities provided by the digital revolution. According to the World Bank Group, an affordable and inclusive digital economy can raise the global gross domestic product (GDP) by 2 percent every year, consequentially reducing poverty if human capital investments are made. Depending on the definition, recent evidence shows that the digital economy represents around 15.5 percent of the global GDP and is forecasted to reach 25 percent in less than a decade.<sup>11</sup>

A sustainable recovery, in which global efforts focus on a green and digital transition, is a strategic objective for the European Union (EU). In this context, stepping up digital financial inclusion is a must to empower the world's poorest to capture opportunities while building resilience.

<sup>10</sup> World Bank, "COVID-19 to Add as Many as 150 Million Extreme Poor by 2021", 7 October 2020. Available at <https://www.worldbank.org/en/news/press-release/2020/10/07/COVID-19-to-add-as-many-as-150-million-extreme-poor-by-2021>.

<sup>11</sup> United Nations Conference on Trade and Development (UNCTAD), "Value creation and capture: implications for developing countries" in *Digital Economy Report*, (2019).

Advancing digital financial inclusion for the people living at the bottom of the pyramid means embracing the radical transformation of the financial service ecosystem for the poor. Over the years, there has been a dramatic reshaping in how financial services can better capture people's needs, as microcredit morphed into microfinance and eventually into digital finance and more recently digital financial inclusion.

Through the digital transformation of financial inclusion, new services are emerging and scaling across the spectrum, including health, education, energy, and agriculture. In addition to this continuous transformation, we have witnessed a fierce change in the nature of livelihoods, which has been profoundly altered by factors such as globalisation, demographics, and climate change. It is now fundamental to bring a human-centric focus to this new paradigm shift while embracing the digital revolution.

Within the EU, we have seen the potential for an integrated financial inclusion ecosystem through the Digital Single Market, which has created a competitive and innovative common market for more than 500 million people. With the adoption of the strategic document '*Digital4Development: mainstreaming digital technologies and services into EU Development Policy*', we are promoting digital economies in the rest of the world. Priority actions focus on affordable and secure broadband connectivity, digital literacy, and entrepreneurship. Each of these priority areas highlight the role of digital technologies as an enabler for the Sustainable Development Goals (SDGs).

Amid the opportunities presented by the digital economy, the digital revolution brings new challenges and risks. This includes a growing digital divide, market disruptions, cyber security risks, and a threat to personal data protection. It is therefore fundamental for development partners to join forces and support the creation of a conducive ecosystem with enabling policy solutions to avoid the expansion of digital inequalities.

Digital financial inclusion can be a powerful source to thrive in the digital economy and stimulate economic progress. Additionally, if combined with digitally-enabled innovations, it could pave the way

for new viable markets and economic opportunities for the private sector. This will increase fiscal revenues for governments to alleviate inequalities and extreme poverty among vulnerable populations.

With the emergence of these new trends, it is crucial to enhance conducive dialogue between the public and private sectors. Significant scope exists to increase cooperation between actors to capture new opportunities but also tackle old problems in innovative ways. This approach is a key feature of the new Digital4Development Hub, where key European actors have joined forces to advance the EU Digital4Development Agenda.

The COVID-19 crisis has reiterated the importance of building resilience in local communities by working in a more integrated approach. This means combining financial resources, technical assistance, and an enabling policy environment to support local ecosystems. In line with this, the EU and the Organization of Africa, Caribbean and Pacific States (OACPS) are using an integrated approach to ensure financial inclusion is a key feature in the initial COVID-19 response and economic recovery. Using financial resources, capacity building, and policy, this work can enable a range of digital solutions. For example, the use of digital services can ensure health workers are paid on time or create an efficient digital payment ecosystem so individuals can safely access government support.

Together with UNCDF, we are now exploring how to best deploy transformational and incremental digital finance solutions for more than 600,000 people across the globe.

As the EU, we are ready to continue joining forces with business and development partners to harness the potential of the digital revolution to solve the most pressing development challenges ahead of us.





## SECTION 1.2

# A MARKET SYSTEM DEVELOPMENT APPROACH TO BUILDING INCLUSIVE DIGITAL ECONOMIES

By Anne Duijnhouwer



## HIGHLIGHTS

- In building an inclusive digital economy, we must recognize that the constraints to market development in each country are context specific.
- UNCDF plays the role of facilitator and catalyst in the countries where we operate. With an emphasis on data, we adopt a focused strategy, seeking to build inclusive digital economies that work for all.
- Skills, innovation, infrastructure, and policy and regulation serve as the building blocks that underpin the UNCDF approach and represent the foundation of the inclusive digital economy.

In considering digital services and how they can be expanded, we have come to realize that Kenya is not Uganda, just as the Lao People's Democratic Republic is not Nepal. Institutions are different; each possesses distinct resources, and their culture's unique characteristics have driven the development of digital finance and enabling ecosystems down distinct paths. In building an inclusive digital economy, we must recognize that the constraints to market development in each country are particular, and we should treat them accordingly. The path to digital inclusion for a smallholder farmer like Joshua in Uganda – introduced in the article **How is the growth of digital finance leading to the emergence of digital economies?** – is different from that of a small-scale merchant such as Tui in the Lao People's Democratic Republic.

In some developing markets, an inadequate digital infrastructure is the main barrier to further market expansion, while in other countries efforts may be better focused on leveraging inclusive innovation to meet the needs of end users more effectively, supporting the development of services to reach critical sectors. Examples include pay-as-you-go services to ensure energy access and platforms that engage smallholder farmers, improving their access to critical inputs, so as to enhance productivity and increase revenue. In still other markets, efforts might focus on removing distortions caused by government regulation, such as interest rate ceilings or the failure to pursue a neutral regulatory treatment of technology.

UNCDF's own efforts aim to identify and address unique market constraints in order to accelerate the development of an inclusive digital economy, at local, regional and global levels. Uniquely positioned to help build inclusive digital economies, we play the role of facilitator and catalyst in the 28 countries where we operate. With an emphasis on data, we adopt a focused strategy, seeking to build markets that work for all.

## THE MARKET SYSTEMS DEVELOPMENT APPROACH

To foster the growth of inclusive digital economies, UNCDF applies a market development approach. The overall aim is to understand and intervene in market systems in order to address underlying market constraints to the inclusion of marginalized communities and improve efficiency, effectiveness and sustainability. The approach seeks to (i) leverage the roles and behaviours of the existing players in the market, such as users and providers of digital services, supporting them in doing what they do better or differently; (ii) work with current players to provide financial instruments that encourage investment and de-risk new business models in order to make digital solutions more inclusive; and (iii) strengthen the systems and relationships among the various players in the market (e.g. service providers, policymakers and regulators) through, for example, an enabling policy and regulatory environment. Such an environment is critical for strengthening systems, and can be just as important as investment and competition. The delineation of a policy framework for digital services will help to develop these critical systems. See the article **Enabling policy and regulation in Section 2.4** for details of our approach to policy.

In rural Zambia, for example, there were challenges in reaching the last mile to drive adoption of energy and financial services. Agents selling Solar Home Systems (SHSs) were unable to support payments by customers for their solutions and mobile money agents were hard to find. In order to test a new approach to address these constraints, UNCDF partnered with Fenix, an SHS firm, and MTN, a local mobile provider. The strategy involved converting Fenix sales agents into a mobile money agent network, developing the business case for a combined solar sales and mobile money agent network and determining how this network could achieve scale and financial sustainability. The model strengthened the sustainability of agents through increased commissions and greater customer trust and loyalty. Zambia has subsequently seen significant support for the expansion of solar and alternative energy products across the country.

When applied in Zambia across a number of projects that sought to address key constraints to market development, transformative top line results were achieved. In the period from 2015 to 2019, use of financial services by the adult population increased from 4 to 44 percent. The country went from 5 digital financial services (DFS) providers to 18, including mobile network operators (MNOs), banks, microfinance institutions (MFIs) and fintechs. Correspondingly, the density of agents rose to 4.8 agents/1,000 inhabitants in 2019 – a 36-fold increase.<sup>12</sup> In partnership with Fenix, efforts extended to energy and agriculture.

UNCDF's work is based on a decade of experience in improving access to financial services, and building the digital rails essential for the development of new business models to support inclusive growth. With a focus on the key building blocks of a digital economy, progress is tracked through our Inclusive Digital Economy Scorecard, a strategic tool that measures market development, helping to set priorities in the dynamic context of the digital era. See Section 1.4 - **Measuring and tracking progress of inclusive digital economies**.

## ORGANIZATION OF STRATEGY AND CUSTOMER FOCUS

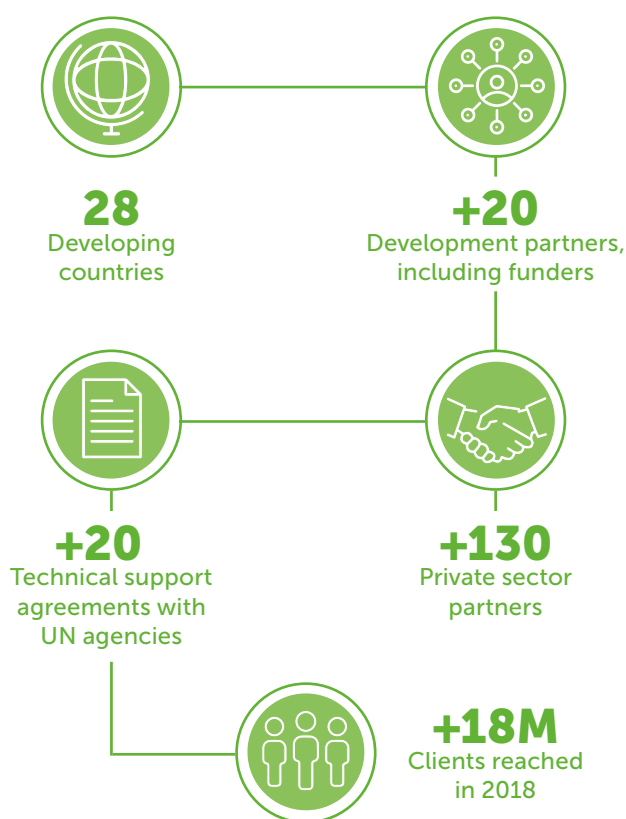
Complementary and reinforcing, the four building blocks underpinning the UNCDF approach represent the foundation of the inclusive digital economy:

- **Skills** – providing customers with the knowledge, skills, behaviours and autonomy to access and use digital tools and financial products in a meaningful way;
- **Innovation** – developing business models and services that address customer needs across various sectors (finance, agriculture, health, education, energy);
- **Infrastructure** – strengthening the digital rails (device ownership, mobile networks, distribution network, access to energy, digital ID) and reducing the digital divide;
- **Policy and regulation** – developing digital economies characterized by inclusive policies and regulations that enable access to and usage of digital services.

<sup>12</sup> Mastercard Foundation and UNCDF, *Five years of Market Development in Benin, Senegal and Zambia (2015-2019)*, 2020, [www.uncdf.org/article/5317/five-years-of-market-development-in-benin-senegal-and-zambia-2015-2019](https://www.uncdf.org/article/5317/five-years-of-market-development-in-benin-senegal-and-zambia-2015-2019).

An organizing principal in UNCDF's efforts is the lens of customer centricity, putting the needs of the end-user – the customer – front and centre. We do this by mapping the customer journey within segments to identify barriers at the customer, provider, infrastructure and policy level. The focus is on client needs to highlight broader opportunities to support usage and establish profitable business cases for the provider. This in turn guides efforts to remove constraints, which can include innovation challenges with the private sector to meet particular segment needs or involve policymakers in learning first-hand about relevant issues. Customers like Joshua and Tui, of which there are many, may have limited means, but they have immense needs.

**FIGURE 1.**  
UNCDF in action



As an experienced actor, UNCDF has targeted its substantial assets to address constraints to market development that limit inclusion, driving positive impact for end clients across multiple segments and sectors:

- **Supporting providers** – addressing constraints faced in the delivery of services to small businesses, strengthening the ecosystem to better serve vulnerable populations;
- **Encouraging and de-risking investment** – improving last mile distribution of solutions by helping providers to develop a viable commercial model;
- **Strengthening systems** – enhancing market insight for policymakers to inform decision-making, tracking progress towards financial inclusion goals, and achieving better regulatory balance.

## REMOVING UNIQUE CONSTRAINTS TO MARKET DEVELOPMENT

Innovation addressing client needs is critical to realize the promise of the digital economy. Several examples of UNCDF efforts, addressing constraints along with their impacts, are highlighted in the following paragraphs.

In Benin, there was an opportunity for several financial service providers to better address client needs. Their products required significant travel and wait times, wasting precious client time, which could be used for other purposes. In particular, the challenge was addressed by helping UNCDF's MFI partner to understand the value of working with a mobile network provider, so as to lower travel and wait times. The end result was a partnership, unlocking the value of MNOs' digital channel for the MFI. Clients saved time by making loan payments through their mobile phones, rather than queuing at the MFI branches.

Overall, UNCDF was involved in six projects in Benin focusing on client challenges, mobile money agents and their distribution networks and finally, helping new providers to enter the market. Our efforts cut across a number of constraints to help develop the enabling financial ecosystem. We hosted seven learning events and working group meetings to advance critical efforts such as partnerships and fintech. The projects helped to evolve products from those providing basic services to mass market DFS products and more

advanced products, such as bank to wallet and IDE (Inclusive Digital Economy) advances such as mHealth.<sup>13</sup> Over a five-year period, these multiple efforts helped to increase DFS users from 2 to 40 percent of the population in Benin. DFS providers in the country increased from two MNOs at the outset to six providers, including banks, an MFI and the post office – coupled with a 65-fold increase in the density of agents.<sup>14</sup>

Ensuring that DFS delivers digital financial inclusion requires a solid agent network. In Senegal, the lack of a viable commercial model challenged the extension of agents to rural areas. UNCDF provided financial and technical support to help local fintech startup InTouch to develop a rural agent acquisition strategy. Through the DFS working group that UNCDF set up in Senegal with the Ministry of Finance and the Central Bank of West African States, we introduced InTouch to potential partners, to facilitate growth through collaboration. Our partnership with local MFI Partnership for Mobilizing Savings and Credit in Senegal (PAMECAS) sought to develop a more advanced digital financial offering to provide Intouch agents with unsecured credit.

A credit scoring model developed with PAMECAS facilitated enhanced decision-making and risk management. These capabilities enabled unsecured lending to Intouch agents, youth and women who lacked the collateral necessary to initiate or expand their agent business. As a result, InTouch exceeded its target of 26 rural agents, reaching more than 550, while serving close to 300,000 customers in rural areas. UNCDF efforts in Senegal cut across a number of constraints to further the development of the financial ecosystem. In the period 2015 to 2019, use of financial services by the adult population increased from 13 to 29 percent. The number of DFS providers increased from 4 to 22, including the emergence of new players such as banks, fintechs and the post office. Support for IDE included initiatives in the agriculture sector. Overall, there was a 19-fold increase in the number of mobile money agents.<sup>15</sup>

An enabling policy and regulatory environment reduces costs, while promoting innovation and consumer interests. Aside from support for policy implementation, the technical, political and financial capacities of the public sector need to be sustained as a prerequisite for the mass adoption of digital services. In Zambia, for example, the data capabilities of the regulator did not provide the necessary insights to inform policy and decision-making. This made it difficult to track progress of the country's financial inclusion strategy, or to balance the strategy with its additional risk. UNCDF supported the development of a flexible DFS data system<sup>16</sup> to generate better insights through improved market visibility. This enabled the nation's central bank to monitor implementation of the national financial inclusion strategy. Enhanced market visibility enabled informed data-driven decisions and facilitated increased competition. These efforts, coupled with other initiatives, helped to advance the enabling DFS ecosystem in Zambia.

## WORKING ACROSS ECOSYSTEMS

These examples highlight UNCDF's work to address constraints to market development. Our experience points to the need to work across an ecosystem. Efforts, which are elaborated in the next chapter, focus on developing customers' skills and inclusive innovation, while developing infrastructures and enabling policy and regulation to balance the benefits of inclusive growth with the risks of digital innovation needed to drive growth. Our approach is grounded in data and puts the needs of the customer front and centre. Such targeted efforts seek to develop better functioning markets that benefit all, leaving no one behind. The approach aims to understand and intervene in market systems to address underlying market constraints, so as to include marginalized communities and improve efficiency, effectiveness and sustainability.



<sup>13</sup> mHealth is an abbreviation for mobile health. It refers to the use of mobile devices to support the practice of medicine, the delivery of medical care and public health efforts.

<sup>14</sup> Mastercard Foundation and UNCDF, Five Years of Market Development in Benin, Senegal and Zambia (2015-2019), 2020, [www.uncdf.org/article/5317/five-years-of-market-development-in-benin-senegal-and-zambia-2015-2019](http://www.uncdf.org/article/5317/five-years-of-market-development-in-benin-senegal-and-zambia-2015-2019).

<sup>15</sup> Ibid.

<sup>16</sup> [www.uncdf.org/admin/editors/ArticleItem/Index/4820?articleTitle=introducing-the-dfs-data-automation-system-bank-of-zambia-and-uncdfs-data-automation-solution](http://www.uncdf.org/admin/editors/ArticleItem/Index/4820?articleTitle=introducing-the-dfs-data-automation-system-bank-of-zambia-and-uncdfs-data-automation-solution).

## DIGITAL TRANSFORMATION IN LDCs: THE ROLE OF GOVERNMENT IN SUPPORTING DIGITAL TRANSFORMATION

By Honorable Vincent Bagire, Permanent Secretary,  
Ministry of ICT and National Guidance

The world over, the cardinal duty of governments in supporting the transformation and development of any given sector remains unchanged – to put in place an enabling environment in which all players and stakeholders from both the public and private sectors have little or no limitations in their pursuit of excellence. Overall, an enabling environment can be actualized through formulating and enacting policies and regulations that favour rather than hinder the activities and programmes that build a particular sector. This is indeed true for the development of the broad ICT sector and digital transformation in Least Developed Countries (LDCs).

Without a doubt, digital transformation is a critical and topical issue today that all governments ought to give prominence. It continues to claim more space as a prerequisite to one's full engagement in the twenty-first century. Unfortunately, in many LDCs, the digital economy is disconnected from the 'traditional economy'; and in most cases from the state with digital innovation being left to 'young innovators', and the innovators not looking to governments for direction. To analyze the role of governments in supporting digital transformation in LDCs, we need to answer the singular most important question: Do governments in LDCs consider digital transformation a worthwhile pursuit? Is digital transformation a priority in the governments' overall development agenda?

### Digital transformation as a driver of the national development agenda: lessons from Uganda

Digital transformation is a major enabler for sustainable development in growing economies. The role of digital in economic transformation becomes even more profound in a country like Uganda, where more than 77 percent of the population is below the age of 30 and with a literacy rate of 89.4 percent (in 2018). Despite the undisputed place of digital transformation in revolutionizing livelihoods – from transforming the way we obtain information, do business, study, communicate, receive services to how we consume entertainment – digital has not always attracted sufficient budget allocation within most LDCs.

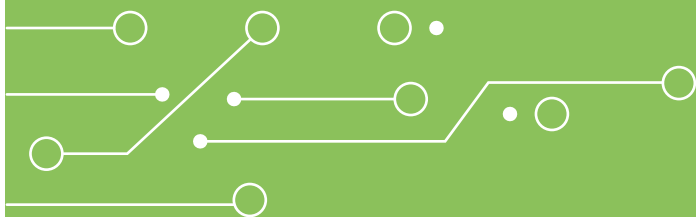
The government of Uganda's commitment to actualize digitalization as a critical cog in the development agenda of Uganda can be seen from the sector's growth trajectory over the years. The establishment of a fully-fledged Ministry of ICT in 2006, consolidating the leadership of ICT strategies and harmonizing policy development, laws and regulations demonstrates the instituting of the sector as high priority in accelerating national development.

Indeed, the government of Uganda has continued to duly position digital transformation as a strong contributor to Uganda's Vision 2040 – where Uganda aspires for a "transformed Ugandan society from a peasant to a modern and prosperous country." In the recently completed National Development Plan (NDP III), ICT is identified as a "fulcrum of development, an accelerator, amplifier, and augments of change"; with a huge potential to improve national productivity by making government and business enterprises more efficient, effective and globally competitive.

### Creating policies and regulations for the digital era

There is no doubt that realizing benefits from digital transformation calls for investment in complementary factors such as enabling policies, human capital, new institutions and infrastructure. However, while the digital economy is constantly and quickly evolving, policy formulation does not happen as fast. For governments to promote a dynamic ICT ecosystem, there is a need for agility in creating policies that facilitate operations of a dynamic digital economy.

Over the years, the government of Uganda has enhanced the policy, legal and regulatory environment of ICT through the establishment of a National ICT





Policy, the National Broadband Policy, Data Protection and Privacy Act and several regulations under the Uganda Communications Act and the National Information Technology Authority Uganda Act.

The enabling environment has seen the ICT sector grow at an average growth rate of 14.8 percent with significant growth seen in areas of use of mobile devices, computer applications, information processing, storage and dissemination as well as mobile finance, global connectivity and online trade.

While development partners have been key in supporting digital transformation in Uganda, like in many other sectors, there is always a risk of working in silos and duplication of efforts. To mitigate this, the Ministry of ICT has established and formalized the ICT sector working group to ensure efficient utilization of resources within and across sectors. The ministry is also developing the Digital Uganda Vision that provides a unified direction for ICT and aligns ICT investments in various sectors.

### **Building e-government capabilities**

LDCs have the opportunity to harness the power of digital transformation to make service delivery more efficient, and enhance transparency and accountability. As COVID-19 further accentuates the case for digital transformation that some public institutions have been sceptical about, digitalization of government and its services is no longer an option. In Uganda, improvement of National Backbone Infrastructure (NBI) has paved the way for improved connectivity and e-government service delivery across the country. The ministry of ICT is now focusing on mainstreaming ICT in all sectors of the economy, and digitalization of service delivery.

### **Supporting research and innovation**

LDCs must facilitate the creation of an ICT innovation ecosystem and marketplace for innovative digital products, and support commercialization of local knowledge products. While Uganda has embraced ICT research and innovation by supporting the creation of innovation hubs and workspaces countrywide, innovative initiatives seldom reach the market realization stage. Support to innovators needs to go beyond technical assistance and grants towards the establishment of an open multidisciplinary ecosystem that nurtures sustainable innovations that can thrive and reach scale. Mobile money, which has revolutionized digital financial inclusion in Uganda, is a perceptible example of how innovation can facilitate effective, efficient and sustainable development.

## **Fostering an inclusive digital economy**

The lessons and successes notwithstanding, Uganda still remains one of the countries with the lowest ICT Developmental Index at 1.94 (ranked 152 out of 176 in the world). The limited network coverage, high costs of devices and internet, limited access to energy and inadequate digital skills among others put a big population of Ugandans at risk of being left out of the digital economy. As part of the NDP III digital transformation agenda, the Ministry of ICT is working to achieve a digitally enabled modern society that empowers citizens to enjoy access to affordable digital services and content. The government of Uganda recognizes its duty to ensure that citizens are empowered to take advantage of the opportunities that digital transformation offers, while at the same time protecting them from the risks it presents. We are continuously assessing the current policies and regulations to determine further policy reforms. Leveraging the Inclusive Digital Economy Scorecard developed by UNCDF, the Ministry of ICT is committed to measuring and tracking the level of development and inclusiveness of Uganda's digital economy, to ensure that efforts towards driving digital transformation reduce and not exacerbate the digital divide.



## SECTION 1.3

# DATA, THE LIFEBLOOD OF INCLUSIVE DIGITAL ECONOMIES

By Robin Gravestijn

## HIGHLIGHTS

- Data can facilitate the paradigm shift to inclusive digital economies by informing a customer-centric approach to the crafting of robust value propositions that meet customer needs in new sectors across the economy.
- It will be important to identify new risks that may be introduced by data, so that we may mitigate these in a thoughtful way, enabling us to advance efforts to realize the promise of digital economies that leave no one behind.

Access to digital technology is increasing rapidly in developing countries. This trend has been accompanied by a surge in the volume and quality of data available to citizens, the private sector, development partners, policymakers and regulators. The vast amount of data generated by digitization, as well as the ability to collect it in real time and use it in new solutions and business models, is a game changer.

Data are being generated in many parts of people's lives, and are most plentiful where they have the deepest digital engagement. For example, as farmers turn to digital platforms for agronomic information and market access, these platforms gather insightful information on them. This information, especially when combined with data from other parts of their life, can be important for tailoring financial services. A case

in point is that of open application programming interfaces (APIs), which standardize data capture and provide access to an expanding array of data sources that have emerged – greatly improving the ability of digital platforms to integrate and embed financial services provided within their broader offering to customers.

These data can help us to understand human behaviours and needs, and to develop innovative solutions addressing those needs, helping to expand consumer choice. In many least developed countries (LDCs), data bring visibility to larger parts of the economy, in particular the informal sector, improving our understanding of the market landscape and informing evidence-based policy. Data also create new risks – to their safe storage and usage, to personal



privacy, and the risk that we will lose control of our personal information. There are important policy and regulatory decisions to be made regarding data that will determine whether the full potential of an inclusive digital economy will be achieved. We need to address these risks, ensuring that as we harness the potential of data for inclusive digital growth, the risks around data are mitigated.

## DATA STORAGE COSTS HAVE DECLINED SHARPLY AS COLLECTION METHODS HAVE PROLIFERATED

Cost reductions have spurred the capture of data from many aspects of our lives. Traditional consumer activities that have been digitized, such as making purchases and banking, as well as new activities like using mobile phones, browsing the Internet, and connecting and sharing through social media, generate data that are being captured and analysed. As sectors digitize, on the production side we observe people accessing work and earning income through platforms, as well as micro, small and medium enterprises ordering supplies, tracking inventory, and marketing on social platforms. Cost reductions for storage and processing have fuelled exponential growth in data capture and information creation, with 90 percent of the world's information accumulated in the last two years alone.<sup>17</sup>

## DECLINING COST OF PROCESSING DATA AND ADVANCING ANALYTICS CAPABILITIES

Conducting mobile phone-based surveys with remote customers is cheaper than ever, dropping to US\$3 per interviewee in Nepal. New techniques are being deployed to leverage these new data, for example, combining different demand and supply sources, to generate new views. Data analytics capabilities have advanced and are more easily available, including new channels such as third-party platforms. Digitization has fuelled the increased availability of big data (such as location data, e-commerce trails, social media

conversations), which together with computational advances in analysis software and the use of unstructured data, is driving more granular, real-time understanding of customers and markets. The increased size of our data footprints has helped to advance financial inclusion and is pivotal to building an inclusive digital economy. Governments and people may not always be ideally positioned to reap the benefits of data, and UNCDF is helping to improve their ability in this respect. For example, our efforts have informed landscape analyses, mapping out financial service networks, identifying market gaps and opportunities to address them.

## DATA CAN BENEFIT CITIZENS, THE PRIVATE SECTOR AND GOVERNMENTS

However, not all data may be available or accessible. The digital divide can prevent access to digital services, forcing individuals to rely on traditional analogue services and preventing the cost-effective digitization of data. In other cases, the problem may be lack of enabling open digital infrastructure (such as open data systems, open APIs, and interoperability) – infrastructure that facilitates the sharing of data between ecosystem partners. For more details, see the article **Enabling infrastructure for inclusive digital economies** (Section 2.2), particularly the section on Open digital infrastructure.

Nevertheless, data are advancing our efforts to build inclusive digital economies in several dimensions. Digital services are generally cheaper, more automated and generate more accurate data that can be systematically collected. These efforts can be enabled through open APIs, which facilitate the ability of systems to efficiently communicate, providing access to data that would otherwise be daunting to find. In Uganda, the development of open APIs is at an early stage,<sup>18</sup> and in 2020 UNCDF organized a workshop in Kampala for critical stakeholders, highlighting the importance of fast-tracking interoperability between companies – through APIs – to the growth of digital economies.

<sup>17</sup> Forbes, "How much data do we create every day? The mind-blowing stats everyone should read", [www.forbes.com/sites/bernardmarr/2018/05/21/how-much-data-do-we-create-every-day-the-mind-blowing-stats-everyone-should-read/#:~:text=The%20amount%20of%20data%20we,in%20the%20world%20was%20generated](http://www.forbes.com/sites/bernardmarr/2018/05/21/how-much-data-do-we-create-every-day-the-mind-blowing-stats-everyone-should-read/#:~:text=The%20amount%20of%20data%20we,in%20the%20world%20was%20generated), 21 May 2018.

<sup>18</sup> UNCDF, "The next stage of Uganda's digital economy will be powered by open APIs", [www.uncdf.org/article/5281/the-next-stage-of-ugandas-digital-economy-will-be-powered-by-open-apis](http://www.uncdf.org/article/5281/the-next-stage-of-ugandas-digital-economy-will-be-powered-by-open-apis), 16 January 2020.

The digitalization of business models provides opportunities to craft and deploy truly innovative solutions. Products and services can be configured in robust value propositions. Data can enable digital and financial service providers to effectively offer value to people and enterprises, delivered through business models that organize economic activity in new ways.

One example is linking savings and other financial services directly to health, education, agriculture and transportation services to address unmet needs.<sup>19</sup> As is happening in Nepal, where a UNCDF agricultural initiative is helping smallholder farmers gain access to affordable solar water pumps through a Pay-as-you-go solution enabled by mobile payments. See the article **More productive and resilient agriculture enhancing food security** (Section 3.6). New sources of data may serve as substitutes for traditional data. For example, psychometric data can overcome challenges presented by the lack of decision-making data on young borrowers – in turn, facilitating lending to promote their entrepreneurial endeavours. See the article **Creating pathways to economic opportunity for youth** (Section 3.2).

Customer-centric approaches and product personalization made possible by data enhance the economic viability of solutions and business models, improving our ability to reach the last mile. In this digital era, data are the lifeblood of inclusive digital economies.

An informed citizenry with more choices about how to meet its needs will make better decisions. Better information enables citizens to make more informed choices, with confidence because they are grounded in truth. Those may be decisions about their health, with patients able to understand symptoms and take appropriate measures. Equally, it may relate to the weather, allowing farmers to take decisive action on harvests, or to the level of pollution in a city and the best available options for commuting. Access to better information enables citizens to understand the consequences of their choices, and to assess these, such as their impact on certain Sustainable Development Goals (SDGs), in an informed manner.

Data can spur and drive innovation. They not only help providers to improve existing services, but enable the development of new solutions focused on client needs, using approaches such as human-centred design. Data can lead to new ways of performing existing

activities, enabling new business models that improve the commercial viability of reaching the last mile. This innovation is evidenced by the fintech revolution. For example, financial services such as savings and credit can be tailored to women micro-entrepreneurs in the informal sector to align with their specific enterprise, life cycle, gender needs and sector. In a recent gig worker challenge we focused on identifying solutions to reduce the economic risks of gig workers in Malaysia and improve their labour mobility. One solution that emerged was from Pay:Watch. The firm partners with employers and banks to provide gig workers with instant access to earned wages, in real time before pay day. This low-cost bank financing ensures gig workers do not have to turn to expensive informal lenders. Pay-as-you-go for services such as clean energy is another example of new emerging models. See the article **Enhance access to affordable and clean energy through digital innovation and technology** (Section 3.7).

Data support more accurate and transparent programme monitoring, which in turn can crowd-in investment resources. For example, UNCDF has developed both a national view and separate project dashboards. The application has helped to visualize and analyse the current status and trends in usage of mobile money, enabling us to prioritize country-, district- and lower-level interventions with our partners.

The easy capture, storage and analysis of proliferating data improve our ability to assess policies and to develop evidence-based policy. They also help to inform new approaches to public services. For example, enhanced data capture provides more transparency in education, helping to drive reforms. It can inform reforms in the delivery of health care through greater supply chain transparency and provider efficiencies – see the article on **Better health through the use of digital solutions** (Section 3.9). It improves the ability to track progress towards policy goals such as financial inclusion, an inclusive digital economy and the SDGs. In Nepal, after the devastating earthquake of 2015, the Nepal Rastra Bank developed a regtech solution in partnership with UNCDF, mapping active financial access points across the country.<sup>20</sup> The platform addresses the data and analytics challenges faced by the central bank, financial institutions and stakeholders. It not only supports the country's efforts in the wake of a crisis, but also improves financial inclusion efforts in Nepal by highlighting where services and access are still lagging, encouraging market players to take action.

<sup>19</sup> UN Taskforce on Digital Financing of Sustainable Development Goals, "People's money: harnessing digitalization to finance a sustainable future" (United Nations, August, 2020).

<sup>20</sup> Nepal Financial Inclusion Portal, [www.uncdf.org/article/4158/nepal-financial-inclusion-portal](http://www.uncdf.org/article/4158/nepal-financial-inclusion-portal).

The use of data helps to foster greater competition by reducing the barriers to entry in different markets. For example, new disruptive solutions enabled by data can pave the way for the entry of new firms. New business models address market failures, expanding the size of markets, while creating opportunities for new entrants.

## RISKS FROM DATA MUST BE RECOGNIZED AND ADDRESSED

The tremendous potential of data must be balanced with the increased risks that they present. The speed at which digital economies are evolving poses challenges to regulators and policymakers, as the current landscapes are not configured to enable digital innovation that is balanced with adequate risk management. The regulatory landscape in many LDCs still lags in the formulation of adequate data privacy and protection laws, necessary to support innovation, and at the same time safeguard privacy, which is critical to building trust in digital technologies.

Data need to be harnessed to enable citizens to make more informed decisions in their daily lives. Client protection must be ensured through effective data management, supported by good governance. Data ownership and permissible use must be clarified; Europe and India are currently at the forefront of such efforts.<sup>21</sup> In India, for example, citizens have underlying ownership rights to their data and new licensed entities are emerging to share their data with providers, based entirely on user consent.<sup>22</sup> Initiatives such as these, which empower customers to choose how their data are used as they seek financial or other services, are new and offer policymakers around the world important examples of how their choices today can shape the digital economy for years to come.

In LDCs, digital and financial literacy rates are often lower than in developed countries, increasing the importance of such safeguards. Large volumes of personal and behavioural data held by various actors create more opportunities for leakage, exposing citizens to threats that could undermine trust in digital technology – trust that is critical to efforts to build the inclusive digital economy.

## THE PATHWAY FORWARD

Data are at the core of the shift from financial inclusion to inclusive digital economies. They enable us to leverage and build on the payment rails, expanding on progress in financial inclusion to build inclusive digital economies. Data facilitate this paradigm shift, by informing a customer-centric approach to the crafting of robust value propositions that meet customer needs in new sectors across the economy (such as agriculture, energy, health, transport). Digital technology enables us to assemble the necessary components, while data serve as the glue holding them together.

While we embrace the promise of data, and the potential that they possess for building inclusive digital economies, we must remain vigilant. It will be important to identify new risks that may be introduced by data, so that we may mitigate these in a thoughtful way, enabling us to advance efforts to realize the promise of digital economies that leave no one behind.

<sup>21</sup> European Parliament and Council of European Union, "Regulation 2016/679, 2016". Republic of India, "The personal data protection bill", 2018.

<sup>22</sup> Bank for International Settlements (BIS), "The design of digital financial infrastructure: lessons from India", BIS Paper 106, 15 December 2019.



## DIGITAL GIANTS AND THE SUSTAINABLE DEVELOPMENT GOALS

By Jonathan Donner,  
Senior Director of Research at Caribou Digital

When Google was founded in 1998, 3 percent of the world's population was online. Fourteen percent was online by 2004, when Facebook was founded.<sup>23</sup> While it takes many organizations to create a thriving digital ecosystem, these two companies, along with a few other peers from China and the US,<sup>24</sup> are central to the internet experience of the growing ranks of first-time and mobile-only users around the world. In 2021, as the world has notched 50 percent online and its fourth billionth user,<sup>25</sup> it is important to understand the unique roles the digital giants play in building inclusive digital economies and achieving the Sustainable Development Goals (SDGs).

The digital giants are not just 'platforms.' They are also what some call 'super platforms,'<sup>26</sup> constellations of interconnected products and services, leveraging deep pockets, talent, operating systems, hardware, infrastructure, platforms, data and AI to offer a multitude of mutually reinforcing products and services to billions of users, many of whom consume them 'for free' (without payment, instead in exchange for advertisements, data, and attention).

The sheer size of these digital businesses, and the scope of the services they offer, makes it both difficult and important to think carefully about them. As they have come to mediate so many elements of the economic and social spheres, their services support many of the SDGs. For example, satellite imaging can improve sustainable agriculture (Goal 2).<sup>27</sup> Mobile-based personal wellness monitoring<sup>28</sup> and disease surveillance<sup>29</sup> can help ensure well-being (Goal 3), and 'Smart cities' may soon help make human settlements more inclusive, safe, resilient and sustainable<sup>30</sup> (Goal 11).

As companies, too, these digital giants participate directly in "the Global Partnership for Sustainable Development" (Goal 17). Facebook has a new initiative called, accordingly, Project17, focused first on gender equality (Goal 5).<sup>31</sup> Google is a partner on several SDG initiatives,<sup>32</sup> and Microsoft is leading by example, committing to be carbon negative by 2030 (Goal 13).<sup>33</sup>

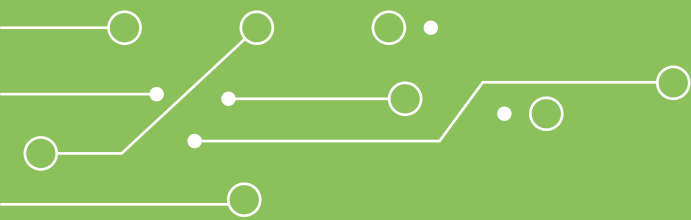
Against this rather complex backdrop of activities, this article focuses on three SDGs to highlight reasons for considerable optimism, as well as measured concern, for the ways in which these digital giants may support inclusive digital economies.

### Deploying Infrastructure

Several of these giants are central to the infrastructure and innovation systems underpinning Goal 9, especially relevant to Target 9.c: *universal and affordable access to the internet*. Specific technologies include everything from undersea cables to urban rings to new low-Earth orbit satellite solutions to promote more universal access. These companies continue to advance the boundaries of affordability and access.<sup>34</sup> A similar logic underpins their role in financial services—the giants have a role to play in addressing the 'unbanked' just as they do with the 'unconnected'. Facebook's efforts to offer a global cryptocurrency may have stalled, but its WhatsApp payment functionality is live in India and Brazil. Alibaba's Alipay, too, is supporting a revolution in payments. The march towards increased accessibility and affordability of digital tools and the internet itself continues, led in no small part by the digital giants.

### Making Inclusive Markets

Goal 8 is to *promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all*. Here, there is promise in new 'platform livelihoods.'<sup>35</sup> Some giants (and many smaller platforms) are revolutionizing e-commerce, allowing microenterprises to sell goods online, either via formal marketplaces or informally via messaging and social media, in a widespread practice known as social commerce. A similar dynamic plays out in labour markets, where people find 'gig work' in freelancing, ride-hailing, delivery, and all manner of local services. An inclusive digital economies agenda here would seek to ensure that these marketplaces not only increase consumer choice and lower prices, but also provide market access and reliable incomes to small enterprises,



and secure, dignified working conditions for individuals. To be clear, this balance is a work in progress, and a combination of carrots (partnerships) and sticks (regulations) will be necessary to make sure these markets are fair and not exploitative.<sup>36</sup>

## Upskilling a Generation

Goal 4 focuses on *equitable access and lifelong learning*. Platforms, including the giants, are developing upskilling programs for gig workers and small-scale sellers and creating training materials like Grow with Google and Facebook for Business that teach valuable business skills to entrepreneurs.<sup>37</sup> Meanwhile, in K-12 learning, advancements in e-learning continue, accelerated by COVID-19 and the demand for remote instruction. Google's YouTube platform hosts a vast array of third-party content. Khan Academy on YouTube is just one great example here: clear, concise instruction in mathematics, available 'for free' in English, Portuguese, Hindi, Spanish and Gujarati.

## Remaining Challenges

Two caveats are in order. First, this article is too brief to explore all the permutations of digital giants' engagement with the SDGs. Second, it is critical to simultaneously acknowledge some ways in which the current digital ecosystem actually works against the SDGs—for example, in hosting and spreading disinformation,<sup>38</sup> in underestimating the risks of AI bias<sup>39</sup> and in allowing skewed competition,<sup>40</sup> there are substantive critiques of the digital giants which cannot be ignored by the digital development community.

Yet the examples above illustrate how the world's largest digital companies are playing an important, albeit complex, role in the world's advancement towards an inclusive digital economy.

To frame a closing challenge, though, note the absence of Goal 1—ending poverty in “all its forms, everywhere”—from this list. The digital giants were built to advertise to the first billion, to bring groceries or airport rides

to the first billion, etc. Given the lack of purchasing power among the world's most poor, vulnerable digital businesses, large and small, will struggle to find business rationales to directly and profitably serve the last billion.<sup>41</sup> Even the gig workers and microenterprises finding new digital livelihoods are not (yet) members of the last billion—they are still mostly urban, and mostly young. Of course, the digital giants have the advantage of scale, and may be better positioned to offer digital connectivity and services 'for free' to the poor, but this is not the same as offering services tailored to or for the poor.

Thus, continued innovation by the digital giants that extends transactional business models and lowers the cost of acquiring and serving customers is required to include and serve the last billion. Innovations like Reliance Jio (nearly free internet) and MPESA (sachet-based financial services) are promising and important exceptions to tech's focus on middle-and high-income users. But there remains a risk of technologies continuing to exacerbate separation between those who are able to take advantage of these technologies and those who are not, and, in the case of the current digital giants, those who are valuable to advertise to and those who are not. In the longer run, a failure to make technologies work for everyone, even outside the market incentives to do so, may end up leaving a subset of our world on the outside looking in, and perhaps even poorer for it. It is precisely the job of the digital development community to be aware of this tension and the persistence of a digital divide, and not to put all its faith and eggs in the (market) basket of the business logics of the giants, while working productively with them to build a better and more inclusive digital economy for everyone.

<sup>23</sup> ITU, "Individuals Using the Internet (% of Population)," World Bank Data Bank, 2021, <https://data.worldbank.org/indicator/IT.NET.USER.ZS>.

<sup>24</sup> There are overlapping lists of digital giants.

<sup>25</sup> ITU Development Sector, "Measuring Digital Development: Facts and Figures 2020" (Geneva: International Telecommunication Union, 2020), <https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2020.pdf>.

<sup>26</sup> Ariel Ezrachi and Maurice Stucke, "The E-Scraper and E-Monopsony," Oxford Business Law Blog (blog), April 10, 2017, <https://www.law.ox.ac.uk/business-law-blog/blog/2017/04/e-scraper-and-e-monopsony>; David Porteous and Olga Morawczynski, "Inclusive Digital Ecosystems of the Future," FiBR Whitepaper #2 (Somerville, MA: Bankable Frontier Associates and Mastercard Foundation, December 2017), [https://bfaglobal.com/wp-content/uploads/2020/01/BFA\\_FiBR\\_Nov8\\_WhitePaper\\_20171220.pdf](https://bfaglobal.com/wp-content/uploads/2020/01/BFA_FiBR_Nov8_WhitePaper_20171220.pdf).

<sup>27</sup> Murali Krishna Gumma et al., "Agricultural Cropland Extent and Areas of South Asia Derived Using Landsat Satellite 30-m Time-Series Big-Data Using Random Forest Machine Learning Algorithms on the Google Earth Engine Cloud," *GIScience & Remote Sensing* 57, no. 3 (April 2, 2020): 302–22, <https://doi.org/10.1080/15481603.2019.1690780>.

<sup>28</sup> Ida Sim, "Mobile Devices and Health," *New England Journal of Medicine* 381, no. 10 (September 5, 2019): 20, <https://doi.org/10.1056/NEJMr1806949>.

<sup>29</sup> Theresa Kuchler, Dominic Russel, and Johannes Stroebel, "JUE Insight: The Geographic Spread of COVID-19 Correlates with the Structure of Social Networks as Measured by Facebook," *Journal of Urban Economics*, January 9, 2021, 103314, <https://doi.org/10.1016/j.jue.2020.103314>.

<sup>30</sup> Carlo Ratti, "We Need More Urban Innovation Projects like the 'Google City'. This Is Why," WEF Global Agenda (blog), September 23, 2020, <https://www.weforum.org/agenda/2020/09/google-smart-cities-urban-innovation-technology/>.

<sup>31</sup> Marne Levine, "Helping to Close the Gender Data Gap," Facebook Newsroom (blog), March 10, 2020, <https://about.fb.com/news/2020/03/closing-the-gender-data-gap/>.

<sup>32</sup> (A listing where the government/entity/organization Google is listed as a partner, 2021; Google, 2021); United Nations, "A Listing Where the Government/Entity/ Organization Google Is Listed as a Partner," SDGs partnerships platform, 2021, <https://sustainabledevelopment.un.org/partnership/partners/?id=10449>; "Google," Business for 2030: Forging a Path for business in the UN 2030 development agenda, 2021, <https://www.businessfor2030.org/google>.

<sup>33</sup> Brad Smith, "Microsoft Will Be Carbon Negative by 2030," January 16, 2020, <https://blogs.microsoft.com/blog/2020/01/16/microsoft-will-be-carbon-negative-by-2030/>.

<sup>34</sup> Alliance for Affordable Internet, "Members," 2021, <https://a4ai.org/who-we-are/members>.

<sup>35</sup> Caribou Digital and Qhala, "The Quality and Experience of Platform Livelihoods: A Literature Review for Digital Development" (Farnham, Surrey, UK, October 2020), <https://www.platformlivelihoods.com/wp-content/uploads/2020/10/QYDEL-v1.01.pdf>.

<sup>36</sup> International Labour Organization, "The Role of Digital Labour Platforms in Transforming the World of Work" (International Labour Organization, February 23, 2021), [https://www.ilo.org/wcmsp5/groups/public/-/-dgreports/-/-dcomm/-/-publ/documents/publication/wcms\\_771749.pdf](https://www.ilo.org/wcmsp5/groups/public/-/-dgreports/-/-dcomm/-/-publ/documents/publication/wcms_771749.pdf).

<sup>37</sup> Jonathan Donner et al., "Platform-Led Upskilling: Marketplace Platforms as a Source of Livelihoods Training," in Proceedings of the 2020 International Conference on Information and Communication Technologies and Development, ICTD2020 (New York, NY, USA: Association for Computing Machinery, 2020), 1–12, <https://doi.org/10.1145/3392561.3394629>.

<sup>38</sup> Siva Vaidhyanathan, *Antisocial Media: How Facebook Disconnects Us and Undermines Democracy* (Oxford University Press, 2018).

<sup>39</sup> Emily M. Bender et al., "On the Dangers of Stochastic Parrots: Can Language Models Be Too Big? &#x1f99c;," in Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency, FAccT '21 (New York, NY, USA: Association for Computing Machinery, 2021), 610–23, <https://doi.org/10.1145/3442188.3445922>.

<sup>40</sup> (UNCTAD, 2019) UNCTAD, "Digital Economy Report 2019: Value Creation and Capture: Implications for Developing Countries" (Geneva: United Nations Conference on Trade and Development, 2019), 20, [https://unctad.org/en/PublicationsLibrary/der2019\\_en.pdf](https://unctad.org/en/PublicationsLibrary/der2019_en.pdf).

<sup>41</sup> Jake Kendall, "Fortune at the Middle of the Pyramid: The Contours of African Consumer Purchasing Power and the Opportunities for the Tech Industry," DFS Lab Blog (blog), December 9, 2020, <https://medium.com/dfs-lab/fortune-at-the-middle-of-the-pyramid-3a6886eb97f3>.



## SECTION 1.4

# MEASURING AND TRACKING PROGRESS OF INCLUSIVE DIGITAL ECONOMIES

By François Coupienne and Tobias Schillings



## HIGHLIGHTS

- To support governments in tracking progress and adapting priorities to accelerate the digital transformation, UNCDF developed a strategic performance tool, the Inclusive Digital Economy Scorecard (IDES).
- The IDES considers four components relevant to the development of a digital economy: Policy & regulation; Infrastructure; Innovation; and Skills.
- By the end of 2021, the IDES tool will have been implemented in a wide range of countries. The tool will continue to evolve on a yearly basis to incorporate latest market developments and ensure that it remains the reference for governments to measure digital transformation.

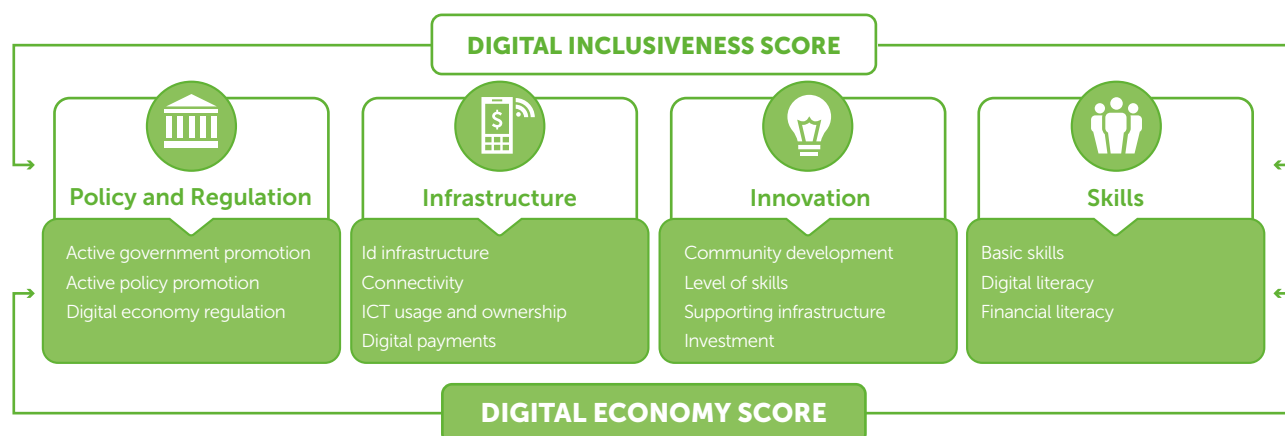
Tracking progress and continuously adapting priorities to accelerate the digital transformation is a key responsibility for governments seeking to bolster economic growth and advance inclusive development. Even more important in a fast-changing environment of emerging technologies and new stakeholders, this role is complex due to the nature of digital development. Firstly, digital transformation is not driven by a single government entity; responsibilities are widely distributed throughout the whole government, making monitoring and coordination more difficult. Secondly, due to the wide scope of digital transformation processes, finding reliable, regularly updated and comprehensive data sources for tracking progress is often challenging.

To support governments in this crucial task, UNCDF developed a strategic performance tool, the [Inclusive Digital Economy Scorecard](#) (IDES). The IDES is a policy tool that governments can use to help set the priorities for their country's digital transformation. It identifies the key market constraints hindering the development of an inclusive digital economy and helps in setting the right priorities to foster a digital economy that leaves no one behind. The tool is developed in collaboration with individual governments to ensure that it can become an enabling part of their digital journey.



FIGURE 2.

Foundations of the inclusive digital economy scorecard



## FROM AN INTERNAL TOOL TO A GLOBAL REFERENCE

The IDES was initially developed in 2019 as an internal tool for UNCDF to track the progress of its work on digital transformation in different programme countries. However, building on our increased involvement in supporting governments in their digital transformation, we discovered the value of adapting the IDES as a policy tool for governments. To achieve this, UNCDF set up a reference group in early 2020 to further refine the IDES as a measurement tool for policymakers, national governments and the private sector. The reference group comprises partners from the European Commission, the Global System for Mobile Communications Association (GSMA), the United Nations Conference on Trade and Development, the United Nations Department of Economic and Social Affairs, the United Nations Development Programme and UNCDF. The group's objective is to refine the scorecard and its indicators and, more broadly, drive the agenda of the measurement of inclusive digital economies.

The 2020 version of the IDES was implemented in four pilot countries (Burkina Faso, Nepal, Solomon Islands and Uganda). To support this process, UNCDF worked closely with the governments of these countries to further strengthen the tool and complement the recommendations from the reference group. UNCDF collaborates with policymakers to populate the IDES and supports them in identifying focus areas that align with their priorities. Since 2021, Burkina Faso, Solomon Islands and Uganda have been using the IDES as a tool to drive and monitor the development of their digital transformation. Implementation often involves many ministries, including those for

information and communications technology and the digital economy, as well as the planning authority and central banks. For example, the IDES is now informing the development of the National Financial Inclusion and the National Digital Economy strategies in Solomon Islands. Since the last quarter of 2020, the IDES has been implemented in 21 additional countries (Bangladesh, the Democratic Republic of the Congo, Ethiopia, Fiji, Gabon, the Gambia, Ghana, Guinea, Malawi, Malaysia, Myanmar, Namibia, Niger, Papua New Guinea, Rwanda, Samoa, Senegal, Sierra Leone, Tanzania, Timor-Leste and Zambia).

In the course of a single year, the IDES has become a global reference tool for measuring digital transformation. By the end of 2021, the tool will have been implemented in a wide range of additional countries. With the support of all countries, the tool will continue to evolve on a yearly basis to incorporate latest market developments and ensure that it remains the reference for governments to measure digital transformation.

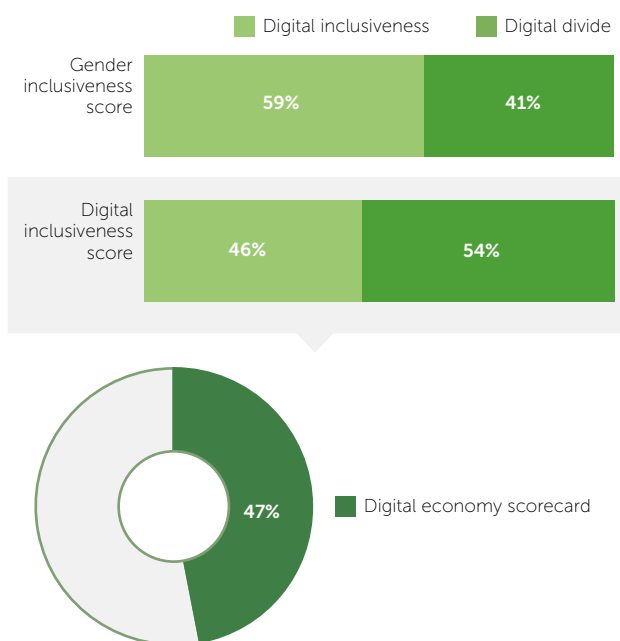
## A SPECIFIC FOCUS ON INCLUSIVENESS

A fundamental issue in the digital era is the exclusion of billions of citizens, especially from marginalized segments (women, youth, the elderly, refugees, migrants, micro, small and medium enterprises (MSMEs), rural inhabitants and people with disabilities). As mentioned earlier in this publication, the sector predicts that the number of unique mobile subscribers will reach 5.9 billion by 2025, equivalent to 71 percent of the world's population. Yet this still means that in 2025, approximately 30 percent of the population will

not have the opportunity to benefit from the digital revolution. Given the rapid development of the digital sector and its related transformation, this exclusion is becoming more and more problematic, as the level accumulates and deepens the digital divide. This divide does not only relate to having access to a phone; it also implies that 30 percent of the population is denied access to all the services and skills available in the digital ecosystem. It is therefore the responsibility of governments to focus on the inclusion of all citizens in their digital transformation processes, from the start of their digital journey.

**FIGURE 3.**

The IDES and its components



At global level, the IDES provides 3 main scores on a scale from 0 to 100:

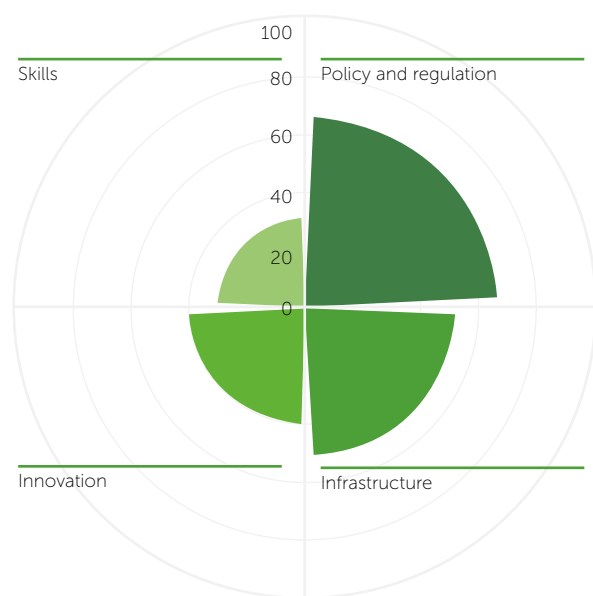
- The Digital Economy Score measures the development of a national digital economy and its four main components.
- The Digital Inclusiveness Score measures the level of inclusion in the digital economy for key customer segments (rural, women, youth, the elderly, refugees, migrants, disabled people, MSMEs).
- The Gender Inclusiveness Score is a subset of the Digital Inclusiveness Score and measures the level of inclusion in the digital economy for women.

From the outset, the IDES has been built around inclusiveness, to ensure that governments have the right indicators to assess the inclusiveness of their digital economy for marginalized segments. With this information, government can then set the right priorities, according to the development of their markets.

The IDES considers four components relevant to the development of a digital economy: Policy & regulation; Infrastructure; Innovation; and Skills. For each of these components, a series of indicators measures the development of the digital economy and its inclusiveness.

**FIGURE 4.**

The Digital Economy Score



In the **Policy & regulation** component, the scorecard captures the extent to which a government actively promotes the development of an inclusive digital economy, as well as the policies and regulations in place that support digital finance and the digital economy. The scorecard covers a range of critical enablers relating to the financial sector, competition, data privacy and security, consumer protection, and telecommunications.

In the **Infrastructure** component, the scorecard quantifies the level of development of mobile infrastructure (ID, information and communications technology usage and ownership, network coverage, access to electricity) and the status of the digital payment ecosystem, including the level of interoperability and the openness of the digital infrastructure for third-party players.

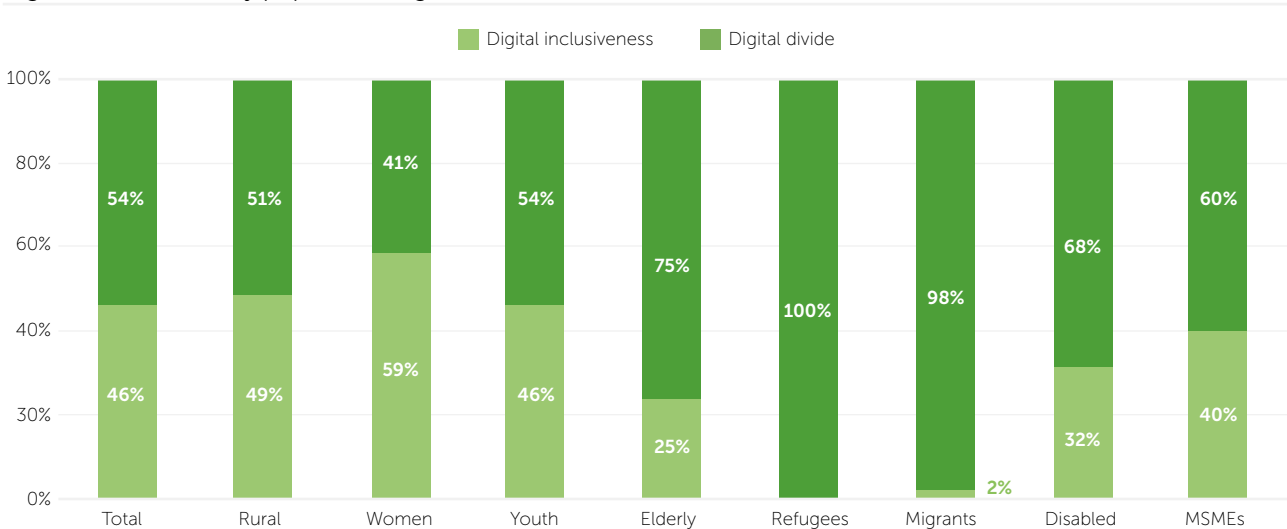
Policy & regulation and Infrastructure form the foundation of an inclusive digital economy. At UNCDF, this foundation is referred to as the 'digital rails.' If the digital rails are properly developed, they open avenues for innovation by third-party players and for the use of technology for people's skills development.

In the **Innovation** component, the scorecard measures the state of a country's innovation ecosystem. Key elements are the following: the level of development and the synergies within the innovation community; the level of skills held by entrepreneurs in the ecosystem; the presence of supporting infrastructure; and the availability of financing.

In the **Skills** component, the scorecard tracks the active participation of the public and private sectors in digital and financial skills development, as well as the level of basic, financial and digital skills among the population.

The **Inclusiveness** of the digital economy is measured through quantitative and qualitative assessment of the efforts made by the public and private sectors to include specific population segments in the expansion of the digital economy.

**FIGURE 5.**  
Digital inclusiveness by population segment



## "FROM BIG DATA TO SHARED DATA"

By Frederic Pivetta, CEO Dalberg Data Insights

Data and technology are at the core of many economic development strategies of the 21<sup>st</sup> century. Digitization and advanced technical approaches using artificial intelligence (AI) and Big Data have generated expectations and promises beyond anything we could have dreamed of 40 years ago. It is now important to reflect on the progress made and what needs to be done moving forward. What is our shared understanding when it comes to investing in data and AI? How can we ensure our approach is inclusive and sustainable?

### Building on systemic learnings

Over the last decade, there has been considerable attention and investment on the application of data to achieve development outcomes. Based on this experience, there are some important systemic learnings:

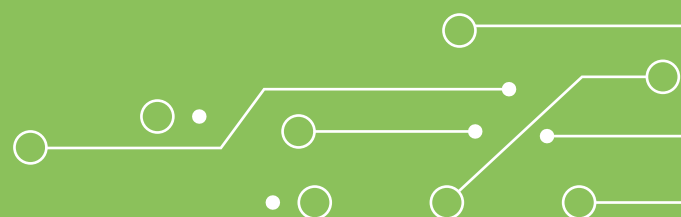
- *Impact is sometimes incremental and can barely be measured* – Digital impact is neither direct nor in step change but rather very indirect and incremental. Each step builds gradually on each other to generate digital transformation. This makes measurement more challenging.
- *Capacity building is not a silver bullet* – We need to unpack the cognitive path of the end-users of the data. In complex environments, it becomes important to create intuitive technical interfaces offering more ready-to-digest insights rather than mobilizing a large group of on-call data analysts.
- *Cutting-edge innovation is not always key* – Big Data and AI-based models and tools have been piloted over the last few years. Hence, it becomes increasingly important to move to the next phase and imbed the most advanced approaches into operational processes.

- *Social impact-driven products and services should find the right balance between not being economically sustainable vs. supporting a business case for the private sector* – For instance, telecom operators offering agri-related insights to farmers can both increase crop yields and create commercial stickiness that prevent farmers from moving away from their current telecom operators.

### Integrating the learnings to build the next level of impact: Creating data ecosystems

One way to generate technical innovation and improve quality of life for citizens has often been to build more advanced infrastructure on top of existing infrastructure, while building new goods and services that leverage these new and more advanced infrastructures. More broadly, the historical path and evolution of a country makes us think that economic growth, longer lives, and the very idea of progress are rooted into creating assets. These assets are important as they are meant to last and be leveraged to bring progress at scale. The very idea of infrastructure is at the core of sustainable economic progress and technical innovation. We now are at a stage of digital maturity where we can start building data assets and infrastructure on top of existing data environments and digital assets. This has already been done in the past, for example around the FinTech industry directly resulting from the Payment Services Directive (PSD2) regulation. Such regulation aimed at creating an entire data ecosystem for FinTech in Europe by requiring banks and financial institutions to open their data backend to foster the emergence of new services and business models.

However, with data comes 'the trust question' combined with questions around reputation and liabilities of data holders. These questions can be addressed by creating stable institutions, forward looking regulation and inclusive communities. This translates into a strong governance and market place where different sides can meet. Such vision has been promoted by the European Union over the last decade when it comes to digital and market for data, namely from the General Data Protection Regulation (GDPR) to the Data Governance Act.

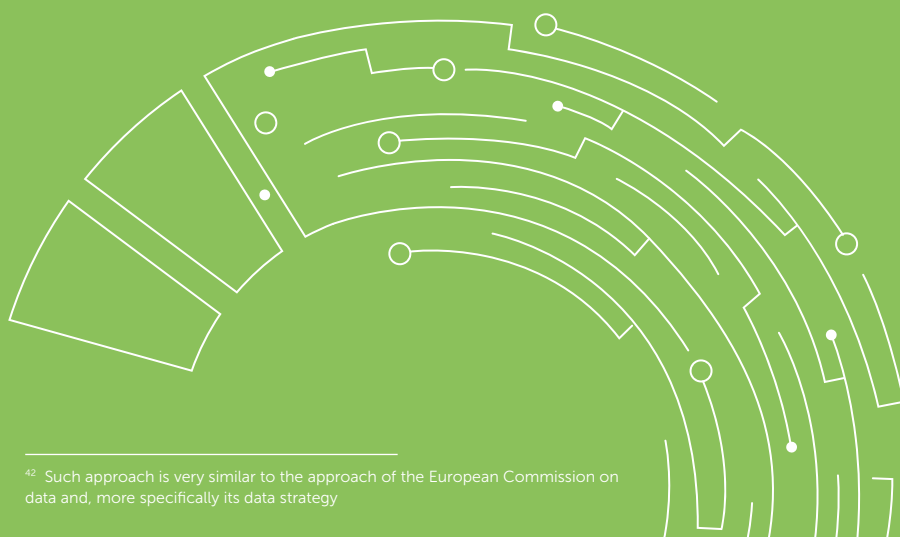


Integrating the creation of additional layers of infrastructure and services and the building of governance and community lead to a more holistic approach that we define as ‘creating data ecosystems’. Such ecosystems can be classified in three pillars: (i) being smart on technical tools and assets; (ii) creating the supportive governance; and (iii) ensuring that there is a strong and vivid community of users and data holders.<sup>42</sup>

## Some critical ingredients

To build a data ecosystem means to be visionary in terms of funding but still intentional about specific strategic investments, such as:

- **Pick relevant topics or questions and develop relevant data governance models**, as different topics might require different types of governance, for example personal health data (to support mental health questions) vs. satellite images (to support agriculture questions).
- **Invest in creating reliable and standard data sources**. Leveraging non-standard data sources can be insightful but long-term sustainability requires generating more standard data (e.g. administrative data).
- **Create data hubs/spaces** for each relevant topic, with, for example actual data, data access points, etc.
- **Create a community** of organizations and stakeholders for a given data space/topic to ensure mobilizing the relevant organizations with the right set of incentives.
- Move from monitoring and evaluation analytics to **predictive analytics**.



<sup>42</sup> Such approach is very similar to the approach of the European Commission on data and, more specifically its data strategy













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## PART 2

# WHAT WILL IT TAKE TO LEAVE NO ONE BEHIND?

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## SECTION 2.1

# EMPOWERING CLIENTS TO EMBRACE INCLUSIVE DIGITAL ECONOMIES

By Maria Perdomo



## HIGHLIGHTS

- Finance and digital literacy are critical if consumers are to embrace the range of services driving inclusive growth.
- Through the Skills workstream, UNCDF empowers individuals, through literacy, to embrace the digital economy.
- To realize the full potential of digital and financial literacy, critical complementary elements must be in place: robust innovative use cases; a digital infrastructure for use cases to run on and be accessible; and policies and regulation that protect individuals and their information, engendering trust in the digital economy.

Aissatou, a young woman, lives in a small city in Senegal and runs a vegetable stand. She faces constant challenges in managing her finances. She is, however, able to save some of her daily proceeds in a small box under her bed. Aissatou has heard about savings accounts accessible through mobile phones from her friends, who are members of a nearby microfinance institution (MFI). While Aissatou

sees their benefit, she knows little about such services and in her mind these unanswered questions translate into risk. Recently, she has received literacy training through an application on her phone, which has empowered her to open and begin using a mobile savings account. Now, rather than putting her earnings under her bed, she keeps them safe in an MFI, where they are easily accessible.

# INCREASING FINANCIAL LITERACY TO PROPEL INCLUSIVE DIGITAL ECONOMIES

People like Aissatou would like to save for an emergency and have funds available for opportunities, such as sending their children to school. But they are challenged by their lack of knowledge regarding formal solutions. They do not feel empowered to access these services and doubt their ability to use them effectively.

To increase participation in the digital economy, we must recognize that many people do not possess the capability to access and use either financial or digital services. Literacy in this regard – and its ongoing development – is therefore critical if consumers are to embrace the range of services driving inclusive growth. It is this development challenge of addressing illiteracy – both financial and digital – that UNCDF focuses on in the Skills workstream.

Financial literacy is an understanding by individuals of basic financial instruments and how they can be used to meet one's financial needs and goals. It encompasses the functional knowledge about using a product. In the case of a savings account, for example, it involves knowing how to save and best use these savings. How long will it take for a deposit to be posted and what if there is an error? Literacy instils the trust required for individuals to constructively engage with the financial system.

Digital literacy is an understanding of the tools related to digital networks, such as communications and the Internet. It encompasses the ability to use a mobile phone, understand how to use Unstructured Supplementary Service Data technology, and overcome the challenges of using low-quality devices, patchy network coverage, and resetting personal identification numbers (PINs). Smartphone users require additional skills to navigate applications and operating systems, set up accounts, manage privacy and security settings, and monitor data usage and costs, among others. These are all critical skills and knowledge, if citizens are to embrace the digital economy.

Lack of literacy may result in the increased self-exclusion of certain groups, who may already be at greater risk, such as women and rural residents; it may also lead to increased customer vulnerability to fraud and misuse of personal data. Among those who are aware of mobile Internet services, but do not use them, lack of literacy and skills is listed as the biggest perceived barrier by 34 percent and 35 percent of people in Africa and Asia, respectively.<sup>43</sup>

## UNLOCKING THE BENEFITS OF THE INCLUSIVE DIGITAL ECONOMY

There are a number of barriers that hinder the adoption of digital services, including constraints related to energy, point of sale and gender.<sup>44</sup> Efforts in the Skills workstream focus on empowering individuals through literacy, seeking to address four progressive barriers to enable them to fully embrace the digital economy. As they progress, learners advance along a journey culminating in the ability to actively use these services with confidence, capturing the benefits of digital innovation – both financial and non-financial. These four steps include: (i) the knowledge needed to use a solution; (ii) the skills required to functionally use a service; (iii) confidence and self-assurance to overcome doubt; and (iv) the assurance that you are able to realize the full potential of a solution.<sup>45</sup>

Barriers to the adoption of digital services exist across society, but are more challenging for some segments. Excluded groups may fall even further behind, a risk that is compounded when we consider that the adoption of digital services is often socially motivated – with skills frequently learned through social contacts and peers. That is why explicit segment-based interventions for rural residents, the poor and women are needed to build digital skills. Literacy propels individuals along a journey of financial health, making them increasingly able to better manage their situation, access necessary services, be resilient in unexpected situations, and plan their future.

<sup>43</sup> Global System for Mobile Communications Association (GSMA), *The State of Mobile Internet Connectivity 2019*, [www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/07/GSMA-State-of-Mobile-Internet-Connectivity-Report-2019.pdf](http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/07/GSMA-State-of-Mobile-Internet-Connectivity-Report-2019.pdf).

<sup>44</sup> This article focuses specifically on literacy. A number of other issues are addressed in this paper, including infrastructure (Section 2.2); innovative solutions (Section 2.3); enabling policy (Section 2.4); and gender (Section 3.1).

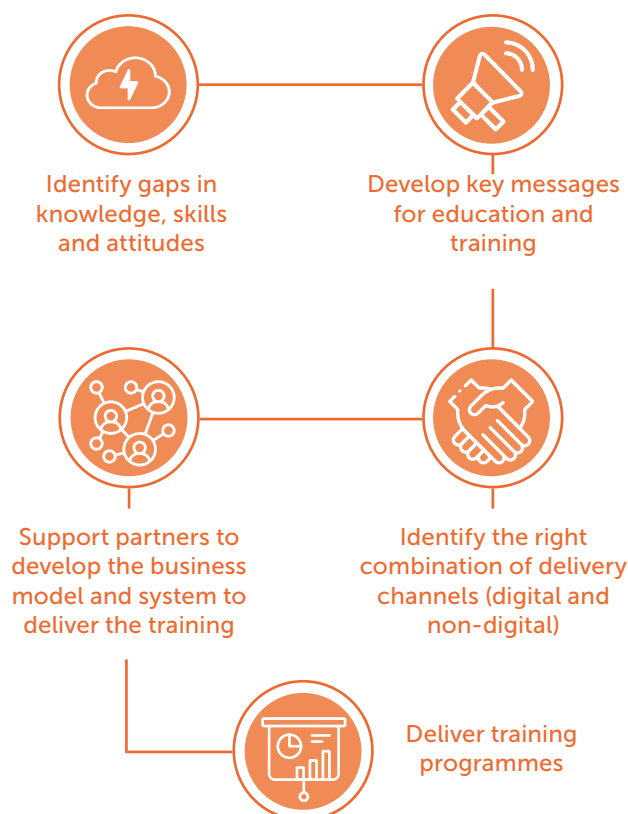
<sup>45</sup> UNCDF, "Empowered customers: leaving no one behind in the digital era", (September 2019). [www.uncdf.org/article/4935/empowered-customers-leaving-no-one-behind-in-the-digital-era](http://www.uncdf.org/article/4935/empowered-customers-leaving-no-one-behind-in-the-digital-era).

# EFFORTS TO ADDRESS THE CHALLENGES OF LITERACY

UNCDF works with a range of partners, including providers and non-governmental organizations (NGOs) engaged in a wide spectrum of initiatives to improve literacy.

FIGURE 6.

The pathway to financial and digital literacy



The UNCDF pathway to financial and digital literacy involves the following steps:

**Identify gaps** that hinder the development of trust. Gaps may vary by segment and country. Some representative examples include: lack of knowledge about formal financial arrangements; absence of skills necessary to use financial products; and lack of confidence to engage with a financial institution.

**Develop messages** – We examine the customer journey to identify ‘moments of truth’ to intervene in the customer experience with messages that resonate. We advise our partners on these opportunities to educate customers, including initial literacy training for acquisition targets and teaching individuals about savings planning at account opening.

**Identify channels** – Our work integrates digital innovations into our partner’s literacy efforts, improving efficiency and effectiveness through appropriate channels and low-cost models, increasing learning opportunities at the ‘last mile.’ Channels include classroom learning, digital applications and individual coaching. Use of digital approaches, such as smartphones, is showing tremendous impact and an entertainment approach could further boost this.

**Support partners** – We support partners through several models. Training can be provided directly by a financial institution, a specialist such as an NGO, or by a combination of both. We help partners to build their monitoring capabilities, so as to understand impact and inform adjustments.

**Deliver training programmes** – All these efforts enable us to provide effective training programmes, with impactful messaging through appropriate channels and sustainable delivery models.

The UNCDF digital application CommCare is currently running in several West African nations: the Gambia, Guinea, Niger and Senegal. The application contains four literacy modules, which users can access as needed. It is being delivered directly by service providers to clients and several NGOs focused on delivering more effective financial literacy training to beneficiaries. This application has helped individuals like Aissatou to gain the skills and confidence to use digital financial services effectively.

Another initiative targets small businesses in the Gambia and Ghana with UNCDF partner InSIST. An application focused on transaction tracking is helping small businesses to improve their cash management, and providing information needed by lenders to help inform lending decisions.

## A JOURNEY OF PERSONAL DEVELOPMENT

Developing literacy – both financial and digital – not only enables people to access and use services, it can help them to make decisions because they understand and trust the systems that they are using. As economies and financial markets become increasingly digital, there are growing opportunities for individuals to develop agency, which itself becomes more important.

Technology is providing new means and channels for building financial literacy. For example, SMS and other messaging services, which can replicate the functionality of chatbots, have been deployed to farmers at scale in Kenya and the United Republic

of Tanzania – increasing engagement on financial literacy topics, such as usage, interest rates on financial products and fees.<sup>46</sup>

Attaining digital and financial literacy is a journey. As individuals progress along this pathway, new opportunities emerge to benefit from more advanced digital and financial services, or to earn income in the digital economy. For those who are digitally included, opportunities may emerge to build their financial literacy and capabilities in tandem with their vocational skills through digital work platforms. When paired with business training, financial literacy prepares entrepreneurs to acquire productive assets and expand their business. Lynk, a company in Kenya, connects artisans and tradespeople, such as carpenters, to work opportunities through its digital platform. Training is provided to market their services effectively and improve their financial management skills. Supporting clients, for example by saving for equipment, drives increased billing across Lynk's platform.<sup>47</sup>

As micro, small and medium enterprises earn more revenue online through digital channels and platforms, they struggle with new challenges. For example, traders on the African e-commerce platform Jumia need to improve their bookkeeping and to be able to accept payment in multiple forms. Such digital platforms now offer tailored in-person training, available online and on-demand to improve the skills of micro and small entrepreneurs registered with them.<sup>48</sup>

To empower clients such as Aissatou, UNCDF partners with private and public stakeholders, to enhance the financial and digital literacy that people need if they are to embrace the digital economy, its tools, devices and networks. However, to realize the full potential of literacy, critical complementary elements must be in place: robust innovative use cases providing access to broader sectors of the economy; a digital infrastructure for use cases to run on and be accessible by digitally literate clients; and policies and regulation that protect individuals and their information, engendering trust in the digital economy. Together these efforts help to support the digital empowerment of individuals.

<sup>46</sup> Consultative Group to Assist the Poor, "Interactive SMS drives digital savings and borrowing in Tanzania" (August 2016). [www.cgap.org/blog/interactive-sms-drives-digital-savings-and-borrowing-tanzania](http://www.cgap.org/blog/interactive-sms-drives-digital-savings-and-borrowing-tanzania).

<sup>47</sup> Mercy Corps, *Towards a Digital Workforce: Understanding the Building Blocks of Kenya's Gig Economy* (2019). [www.mercycorps.org/sites/default/files/2020-01/Youth\\_Impact\\_Labs\\_Kenya\\_Gig\\_Economy\\_Report\\_2019\\_0\\_0.pdf](http://www.mercycorps.org/sites/default/files/2020-01/Youth_Impact_Labs_Kenya_Gig_Economy_Report_2019_0_0.pdf).

<sup>48</sup> Mastercard Foundation and Caribou Digital, "Platform-led upskilling: how marketplace platforms can transform emerging markets by investing in skills development" (London, 2019). [www.cariboudigital.net/wp-content/uploads/2020/04/PLTU-FINAL-WEB-v2.1.pdf](http://www.cariboudigital.net/wp-content/uploads/2020/04/PLTU-FINAL-WEB-v2.1.pdf).



## FROM FINANCIAL INCLUSION TO INCLUSIVE DIGITAL ECONOMIES: THE CASE FOR THE PACIFIC ISLANDS

By Bram Peters, UNCDF Regional Digital Lead for the Pacific and Riad Meddeb, UNDP Senior Principal Advisor for SIDS

Small Island Development States (SIDS) are considered to be the most vulnerable countries in the world and the COVID-19 pandemic has seriously disrupted their economies and livelihoods. SIDS are recognized as a distinct group as they tend to share similar sustainable development challenges (UN-OHRLS). They are dispersed around the globe, but are mainly located in three geographic regions: the Caribbean, the Pacific, and the Atlantic, Indian Ocean, Mediterranean and South China Sea. Many of these island states depend heavily on tourism to drive their development, and while individually distinct, they share a set of common geographical, socio-economic and environmental characteristics. These include poverty, remoteness, dispersed communities and the threat of natural disasters, such as cyclones, drought and volcanic eruptions. Given the requirements of minimizing personal contact imposed by the COVID-19 virus, the absence of good quality, low-cost digital communication leaves many people living on these islands in a particularly difficult position, in terms of facing the pandemic and its ripple effects on socio-economic welfare. Significant numbers of people whose homes are on the Pacific islands are at risk of being excluded from the rapidly developing digital economy that has already reached their shores and the opportunities this brings when linked to the 'real' economy.





Riding the waves of the digitization trend, Pacific mobile penetration currently stands at around 38 percent<sup>49</sup> and is seeing modest growth in the mobile subscriber base. Among the Least Developed Countries, the average is 44 percent, while in Pacific Island countries the figure ranges from 84 percent (for larger island nations such as Fiji) to 11 percent (for smaller islands such as Marshall Islands) (see Table 1 below). However, mobile subscription across the Pacific Islands is poised to undergo a rapid rise to 60 percent, due to a fall in smartphone prices and the emergence of new vendors.

According to a global study conducted by the Global System for Mobile Communications Association (GSMA), the cost of sending international remittances through mobile money is, on average, more than 50 percent lower than using global money transfer operators (MTOs). In addition, where people are able to send remittances from a mobile money account, the average cost of sending US\$200 is 2.7 percent, compared with 6 percent when using global MTOs.<sup>50</sup> Ensuring a reduction in transaction costs of international remittances from 9 percent to 3 percent to Pacific corridors will lead to additional savings of more than US\$15 million for end users. It was for this reason that the Pacific Islands Forum Secretariat (PIFS) joined the global call to action to keep remittances flowing during the COVID-19 crisis<sup>51</sup> and that the Pacific Financial Inclusion Programme (PFIP) supported Vodafone Fiji in offering fee-free remittances via its M-PAiSA mobile money solution. This initiative led to a drastic change in the sending behaviour of family and friends supporting their loved ones back in Fiji. International money transfers to the M-PAiSA platform saw growth from FJ\$2 million (US\$943,000) per month pre-COVID-19 to FJ\$10.5 million (US\$4.9 million)<sup>52</sup> in October 2020, representing an increase of 425 percent in a matter of a few months.<sup>53</sup>

This trend demonstrates that digital solutions are already showing transformative impact in the Pacific financial sector, enabling parents in Solomon Islands to pay for their children's school fees through their ANZ GoMoney account, transforming payments in public transport in Fiji using the latest NFC contactless technologies, and converting paper-based savings accounts to digital accounts with the National Bank in Vanuatu.

New technological innovations can play a pivotal role in the digital transformation of the Pacific Islands and provide a pathway for recovery from the impact of COVID-19, enabling access to life-enhancing services in areas such as health and education, while proving a catalyst for innovation and economic growth, with the promise of new jobs and increased tax revenues. Initiatives such as Pacific Trade and Invest are already showing the way in that respect, for instance by encouraging Pacific tourism operators to acquire new digital skills in preparation for the reopening of borders.<sup>54</sup>

The potential for digital services to impact many more lives in the Pacific is strong; significant investments have been made in core digital infrastructure, including various undersea fibre optic cables, and national governments are giving priority to leveraging these investments for their economy. In line with the aspirations of the Framework for Pacific Regionalism and the Samoa Pathway, by 2019, a majority of Pacific Island countries will have completed their ambitious submarine cable projects and improved connectivity in the capital cities.

Solomon Islands is one such country in the region. In December 2019, this island state was finally connected via undersea cable to the global Internet backbone. The completion of this project has included international connectivity between Honiara, Sydney and Port Moresby, managed by the Coral Sea Cable Company, as well as crucial domestic connectivity between Western Province (Taro), Malaita Province (Auki) and Choiseul Province (Taro). To deliver the maximum benefit of this potentially transformational infrastructure and to further enhance the economic impact for its citizens, in early 2020 the Solomon Islands Government, with technical support from UNCDF, decided to kick-start the process of developing its first National Digital Economy Strategy (NDES).

As a prerequisite for Solomon Islands to develop its NDES, the Government decided to use a new policy tool, becoming one of four countries – together with Burkina Faso, Nepal and Uganda – involved in piloting the Inclusive Digital Economy Scorecard (IDES). This new tool has been developed by UNCDF with support from the United Nations Development Programme (UNDP), the United Nations Department of Economic and Social Affairs, GSMA, the United Nations Conference on Trade and Development (UNCTAD) and the European Union to help governments set priorities for their country's digital transformation. It identifies the key market constraints hindering the development

<sup>49</sup> Global System for Mobile Communications Association (GSMA), *The Mobile Economy - Pacific Islands* (London, 2019).

<sup>50</sup> Global System for Mobile Communications Association (GSMA), *GSMA research shows mobile money is significantly reducing the cost of sending international remittances* (London, 2 November 2016).

<sup>51</sup> See [www.uncdf.org/article/5787/the-pacific-island-forum-secretariat-joins-global-call-to-action-to-keep-remittances-flowing-during-the-COVID-19-crisis](https://www.uncdf.org/article/5787/the-pacific-island-forum-secretariat-joins-global-call-to-action-to-keep-remittances-flowing-during-the-COVID-19-crisis).

<sup>52</sup> Conversion rate: US\$1=FJ\$2.12. Source: <https://treasury.un.org/operationalrates/OperationalRates.php> (accessed October 2020).

<sup>53</sup> See [www.fijitimes.com/10-5m-international-remittances-in-october/](https://www.fijitimes.com/10-5m-international-remittances-in-october/).

<sup>54</sup> See <https://pacifictradeinvest.com/explore-our-work/insights/tourism-operators-acquire-new-digital-skills-to-prepare-for-borders-reopening>.

of an inclusive digital economy and helps, together with public and private stakeholders, to pinpoint the right priorities for fostering a digital economy that leaves no one behind. For the Government of Solomon Islands, the IDES has proved to be a valuable policy tool, enabling it to take stock of the current state of digitization in the nation. Through interactive and collaborative workshops with principal stakeholders, the IDES has helped to survey existing policies and initiatives, while highlighting market constraints to be prioritized and addressed within the NDES.

Efforts to achieve digital financial inclusion made by UNCDF and UNDP, through the Pacific Financial Inclusion Programme, are directly contributing to the emergence of digital economies in the region, and vice versa. Digital technologies are connecting financial services to 'real-economy'-related services and solutions that can transform the lives of Pacific Islanders. The wider

application of digital solutions to solve the daily constraints and needs of vulnerable islanders strengthens use cases for the adoption of digital financial services. One such example is SolaPayGo, a small fintech start-up company from Papua New Guinea that is paving the way for the adoption of pay-as-you-go solar energy for households in the country's rural highlands, and is now looking to expand its services to Solomon Islands.<sup>55</sup> Another example is the approach taken by the Solomon Islands National Provident Fund, which has worked together with the Central Bank, the tax authorities and the country's two competing mobile network operators to develop the use of mobile airtime top-ups as a currency, thereby tapping into the large network of more than 8,000 airtime resellers. This innovative approach and collaboration of committed public and private sector partners has enabled the Fund to scale up its highly successful micropension services for the informal sector, in a country that has no mobile money service providers.<sup>56</sup>

**TABLE 1.**  
Mobile subscriber numbers and penetration in the Pacific Islands

2018	Population (000)	Unique subscribers (000)	Connections (000)	Subscriber penetration
American Samoa	56	30	40	55%
Cocos (Keeling) Islands	0.6	0.2	0.3	38%
Cook Islands	17	5.6	6	32%
Fiji	915	770	1,192	84%
French Polynesia	287	163	294	56%
Guam	166	109	179	65%
Kiribati	119	22	56	19%
Marshall Islands	53	6	6	11%
Micronesia (Federated States)	107	18	24	17%
Nauru	11	7	11	61%
New Caledonia	282	186	276	66%
Niue	1.6	1	1.5	58%
Norfolk Island	2	1	1.6	47%
Northern Mariana Islands	55	23	35	41%
Palau	22	15	26	67%
Papua New Guinea	8,502	2,525	2,734	30%
Samoa	198	93	142	47%
Solomon Islands	629	310	459	49%
Tokelau	1.3	1	1	52%
Tonga	109	68	110	62%
Tuvalu	11	3	4	24%
Vanuatu	285	163	330	57%
Wallis and Futuna Islands	11	6	8	50%

Source: GSMA, The Mobile Economy - Pacific Islands (2019).

<sup>55</sup> See [www.uncdf.org/article/5809/how-solar-pay-as-you-go-energy-is-helping-papua-new-guineans-access-financial-services](http://www.uncdf.org/article/5809/how-solar-pay-as-you-go-energy-is-helping-papua-new-guineans-access-financial-services).

<sup>56</sup> Ibid.

Today, digital financial services and the ubiquitous use of mobile phones have opened up a range of solutions for low-income households, ranging from energy access to education, health care and agricultural services. Improved Internet connections and the rapid uptake of smartphones in the region will allow UNCDF and UNDP to leverage the opportunities that these new technologies and digital platforms present for low-income consumers, while building on a decade of in-depth experience working with key stakeholders within the Pacific financial inclusion and digital ecosystem. As a result, the need for a new initiative focusing on building inclusive digital economies in the Pacific could not be more critical, since the starting point is now vastly different from that in 2008, when the first phase of PFIP was launched.

UNCDF and UNDP recognize that digital technology will be at the forefront of development efforts, especially in the Pacific region where the challenges of remoteness and territorial dispersion call for innovative digital solutions. Research demonstrates that through the adoption of digital services by individuals, businesses and governments, the digital economy has emerged in recent years as a global key economic driver.<sup>57</sup> The Digital Pacific Conference held in Samoa in June 2018 highlighted the importance of advancing the use of digital technologies in the Pacific. It noted the critical role of governments in creating a conducive regulatory

environment for digital innovations and promoting digital technology in the public sector as a stepping stone to the creation of a more inclusive digital economy. It was also recognized that investments in upgrading education and workers' skills will be crucial if the potential benefits of digital technology are to be reaped for sustainable development. This will require a commitment to supporting training in information and communications technology, as well as education in science, technology, engineering and mathematics, fostering stronger partnerships between the public and private sector and regional leadership on policy initiatives that promote mutual learning, knowledge and data exchange.<sup>58</sup>

It is against this background that UNCDF and UNDP have sought collaboration with UNCTAD and PIFS, two important organizations that in recent years have been instrumental in driving the agenda for e-commerce and the digital economy at large in the Pacific region. Together, these partners have joined hands to launch a new regional initiative, the Pacific Digital Economy Programme, to support the development of inclusive digital economies in the Pacific. The vision is that these economies will enable rural communities, women and micro, small, and medium-sized enterprises, as well as seasonal workers, to enhance market participation, resulting in poverty reduction, improved livelihoods, and inclusive economic growth in the Pacific.

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<sup>57</sup> Strategy&, Digitization for economic growth and job creation: regional and industry perspectives (PwC, 2013).

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<sup>58</sup> United Nations Development Programme, Digital Pacific Conference Report (2018), p.7-9.



## SECTION 2.2

# ENABLING INFRASTRUCTURE FOR INCLUSIVE DIGITAL ECONOMIES

By Sabine Mensah

## HIGHLIGHTS

- The UNCDF Infrastructure workstream seeks to catalyse investments and build coalitions to ensure that key components of digital infrastructure are in place, such as mobile phones and connectivity, in order to provide universal access to the systems and networks necessary for the next level of functionality.
- Accessible infrastructure alone is not sufficient; it must be supported by other key factors (skills, innovation, and policy and regulation) to ensure transformative impact.

Fatoumata is a grandmother and small businesswoman from rural Matam in Senegal, near the border with Mauritania. She lives with her daughters and daughter-in-law, helping to care for their children. The *de facto* head of household, Fatoumata frequently needs to collect cash transfers from her sons, who work in far-off cities. The journey to the agent – to receive her funds in cash – is one hour each way on foot, taking up valuable time that Fatoumata could be using to manage her business. When she returns home, she puts the money in a cash box that she keeps under her bed. Fatoumata needs to make decisions about how to use the funds, given the many needs of her extended family – deciding what household expenses to prioritize, which of the grandchildren will go to school, which investments she should make for her vegetable business, and what to set aside for emergencies.

## BARRIERS TO ACCESSING AN ENABLING INFRASTRUCTURE

A critical problem for Fatoumata and the millions like her is lack of access to the infrastructure necessary to enable financial inclusion. Several barriers constrain access to crucial infrastructure, which in turn impede access to digital payments and basic services – services which can be enabled by payments in health, education, agriculture, etc. Barriers to accessing enabling infrastructure disproportionately impact the poor and the vulnerable, and the presence of these obstacles creates a new form of exclusion – a digital divide separating those who have access to the digital economy from those who do not.

Our efforts at UNCDF focus on addressing these barriers to narrow the digital divide. In particular, we focus on four core areas, with country priorities differing based on unique market circumstances:

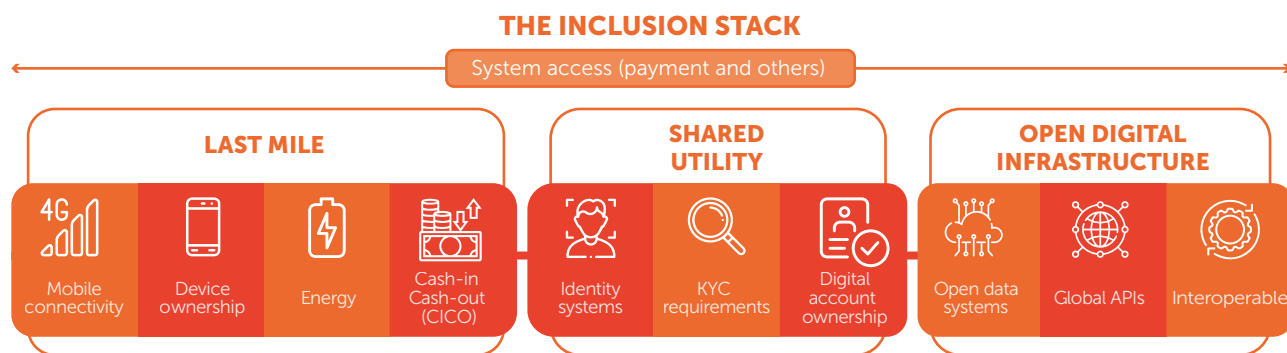
- possession of identity documents critical for gaining access to government and financial services, as well as other systems and services
- ensuring mobile and digital connectivity for target populations through mobile network coverage where they live, study and work
- access to a phone, together with a secure source of energy, either one's own or one that can be accessed, as well as the ability to easily keep it charged
- ability to secure one's money in a digital account and access open payment services grounded in interoperability and open application programming interface (API).

## THE CRITICAL NEED FOR UNIVERSAL ACCESS TO DIGITAL INFRASTRUCTURE

Fatoumata and those like her lack access to digital services that could be enabled by appropriate infrastructure configured for the market. These include systems and networks that would enable vulnerable populations – such as rural residents, women and the poor – to have access to basic services and greater opportunities. For Fatoumata, this might be the ability to easily access remitted funds or to make small incremental fee payments for the education of her grandchildren.

The goal of the UNCDF **Infrastructure workstream** is to address the inadequate deployment of necessary and appropriate infrastructure, which stems from a number of reasons, including the inability to cost-effectively meet latent demand, lack of cost-effective business models, and the absence of standards. This workstream seeks to catalyse investments and build coalitions to ensure that key components of digital infrastructure are in place, such as mobile phones and connectivity, in order to provide universal access to the systems and networks necessary for the next level of functionality.

**FIGURE 7.**  
Infrastructure supporting inclusive digital economies



## LACK OF DISTRIBUTION AT THE LAST MILE

A critical gap that we address is last-mile distribution infrastructure, such as mobile connectivity, device ownership, and cash-in cash-out (CICO) distribution networks. Our efforts seek to develop this infrastructure by catalysing investments and building coalitions with market players, facilitating access to digital systems and networks by vulnerable populations.

This infrastructure is important for enabling a number of services, including network access, account onboarding, and the ability of households to effectively manage their liquidity and finances. Due to the failure of infrastructure to reach the last mile, there is no easily accessible on-ramp for excluded and vulnerable populations.

One reason for the infrastructure gap at the last mile is insufficient demand. An opportunity for addressing this lies in combining complementary features in propositions for customers. Working with providers in Uganda, UNCDF



undertook such an initiative, with good results. In order to promote device ownership in underserved communities, a bundle was created that included access to electricity, mobile money and a phone rechargeable through a solar panel. A low monthly fee made the bundle more accessible to consumers.

Failure to establish robust infrastructure can also stem from an inability to deploy it in a cost-effective manner. This may occur – especially in rural areas with low population density – when there is no commercially viable business model to support network deployment. The answer can lie in testing new models, for example, a trust-based high-touch approach, to help realize the promise of digital technology such as CICO networks.

Together with partners, services were distributed through the UNCDF Digital Community Entrepreneur Model in Uganda. The model is built around recruiting trusted youths with good business acumen within a community, to help them become entrepreneurs.<sup>59</sup> The position of these agents in their communities and the trust that they engender has helped to drive higher volumes than would otherwise be the case, improving business viability in the process.

Digital product sales for early 2020 show that 68 percent of the phone purchases and 53 percent of solar energy purchases were made by women. By March 2019, 373 agents had been deployed, exceeding the project's objective. Youth mobilization was particularly effective, with more than 50 percent of the active agents under 35 years of age.<sup>60</sup>

## SHARED MARKET INFRASTRUCTURE AND OPEN DIGITAL INFRASTRUCTURE

The lack of shared market infrastructure such as identity systems, digital account ownership and the digitization of bulk payment is another infrastructure gap that UNCDF seeks to address. Shared market infrastructure is foundational, enabling the broader reach of core infrastructure and a critical mass of payment flows. Since this infrastructure is similar to a public good in that it benefits all members of a society, our efforts have focused on identifying issues and

developing broader stakeholder coalitions to address gaps. Combining elements (such as identity, bulk transfer) is more cost-effective and can be addressed by digital technology, while engaging key actors such as government can help to achieve the viable economics and the distribution necessary to address latent demand.

The third infrastructure gap that we target is the absence of open digital infrastructure, such as interoperable payments and open information, which is critical for realizing the network effects inherent in a digital economy. The development of this infrastructure often requires coordination among key stakeholders to draw up appropriate rules and standards. Addressing these shortcomings helps to realize the full potential of network infrastructure. The critical elements of open infrastructure include open data and the adoption of global API standards. UNCDF efforts in Uganda to support stakeholder understanding of their value has proved an important first step towards creating the standards required as a basis for this infrastructure.

Other interventions have focused on developing interoperable payment systems. The absence of network interoperability prevents mobile payment networks from realizing the benefits of network economics, impeding their ability to expand beyond digital finance to support the growth of inclusive digital economies.

## THE TRANSFORMATIVE IMPACT OF A ROBUST DIGITAL INFRASTRUCTURE

UNCDF is careful to address the need for digital infrastructure with the foundational characteristics required to ensure universal access to digital systems and networks. Our efforts focus on critical investments, technical assistance and stakeholder engagement, to ensure that the appropriate digital infrastructure is in place to overcome critical constraints to market development. It is important that this infrastructure enables distribution to the last mile; comprises features to ensure the proper functioning of markets; and is open in design to help realize the full potential of the digital economy through network effects and unlocking the power of data.

<sup>59</sup> UNCDF, "Reaching the last mile: the foundation for growth of Uganda's digital economy" (June 2020). [www.uncdf.org/article/5797/reaching-the-last-mile-the-foundation-for-growth-of-ugandas-digital-economy](http://www.uncdf.org/article/5797/reaching-the-last-mile-the-foundation-for-growth-of-ugandas-digital-economy).

<sup>60</sup> UNCDF, "Is the agent aggregator model the solution for rural areas?" (October 2019). [www.uncdf.org/article/5084/is-the-agent-aggregator-model-the-solution-for-rural-areas](http://www.uncdf.org/article/5084/is-the-agent-aggregator-model-the-solution-for-rural-areas).

Accessible infrastructure alone is not sufficient; it must be supported by other key factors to ensure transformative impact. Clients must be empowered through literacy to effectively access digital tools and infrastructure (see Section 2.1, **Empowering clients to embrace inclusive digital economies**). They must be able to use innovative products riding on top of this infrastructure, underpinned by use cases addressing their needs (see Section 2.3, **Inclusive innovation drives inclusive digital economies**). Policies and regulations must be in place to protect clients, engendering the trust that propels them to embrace digital services (see Section 2.4, **Enabling policy and regulation**). These elements, put in place in a coordinated manner, will address critical gaps to help create network effects and further market development, putting us on a path to attaining the Sustainable Development Goals.



## OPEN APIS AND FINANCIAL INCLUSION

By Greta Bull, CEO, CGAP

APIs are the technology innovation most people have never heard of, but they are powerful drivers of the digital economy. APIs, or Application Programming Interfaces, have been around for two decades, but they have only recently begun to change the way financial services are delivered. They have the potential to transform it.

An API is essentially an interface that enables one software programme to talk to another. It allows businesses from start-ups to established companies to share data and services. This happens behind the scenes in many familiar services and works so seamlessly consumers aren't even aware they are there. APIs are what allow you to buy an airline ticket on Expedia, post a photo or news article to Facebook, buy an app on the App Store or take a ride with Uber (and much more!). They are the glue that holds the digital economy together.

APIs can be used to connect different IT systems, both inside and between companies, and they are deployed on a spectrum from internal to open:

- **Internal APIs** are reserved for use by developers working within or on behalf of an organization. They can help improve efficiency and lower time to market for innovations – making providers more **agile**.
- **Partner APIs** allow data to flow between two different organizations according to an agreed set of parameters. In other words, they enable **collaboration**.
- **Open APIs** are made more broadly available. Selected organizational assets (for example, payments functionality or data) are made available on a self-service basis to developers who meet minimum criteria, register for access and are willing to operate to a defined set of parameters for participation. Open APIs are used to promote **innovation**.

From an innovation perspective, Open APIs are key enablers as they allow different players to harness and leverage the assets and capabilities of each other — combining, for example, payments capabilities with geolocation and communications services in the case of Uber. Together, these services deliver enhanced customer value, in this case, getting from point A to point B. With any one of those capabilities on its own, the rider would likely not be able to make the journey.

Large digital financial services providers are often not best placed to develop a full range of services themselves to meet the needs of their many customers. Take the case of a Mobile Network Operator (MNO) running a payment platform in Africa: they are too busy managing core operations — registering customers, managing a huge distribution network, and dealing with regulations. They have neither the time, the skills nor the inclination to develop financial or other consumer products. They just want to attract as many people to their platforms as they can and keep them in their payment ecosystem. One of the best ways to do this is to bring third party services into the platform. And one of the best ways to do that is through Open APIs.

There are many small and nimble companies with creative ideas that range from leasing tractors to PAYGO solar to financial health apps to social networks and e-commerce. They need a way to get their product out to customers and to get paid for their services. Large DFS players offer that channel. Problem is, normal methods of integration are complicated, expensive and time-consuming, and small companies have neither the resources nor the bargaining power to deal with the MNOs. Without an Open API scheme, large DFS providers prioritize integration with a handful of larger partners with a clear business case where profits outweigh the high cost of one-off integrations. These tend to be companies like utility providers who integrate for bill payments. Sometimes they offer an innovative solution, but often as not, we are looking at established, volume-based businesses. That makes life easier for consumers at the margins — being able to pay a bill remotely is certainly a convenience — but it does not open up many new services for consumers.

By making a platform available to third parties on an open basis, platform providers enable developers with good business ideas to onboard themselves to the platform, using processes, rules and technologies published in the platform provider's developer portal. If the small company is able to meet the platform's standards, then it can start selling its services over the platform, making its service visible, communicating with customers and collecting payments from them. It's a win-win.

Open APIs are not only good for giving consumers more choice, they are also good for businesses. Open APIs expand the ways people can use digital money and therefore help drive usage of digital accounts. Because consumers have more options, they buy more, increasing revenues. The integration costs for large providers come down due to economies of scale, and the universe of partner services that can be onboarded in a short period of time expands. And smaller start-ups have lower integration costs and can bring their products to the market more quickly, testing customer demand and improving the product incrementally.

APIs are at the core of transformations taking place in the financial sector, like Open Data and Open Banking, which are leading to the 'disaggregation' of banking. As these services are gradually integrated into the digital platforms that are transforming the ways people earn incomes and buy goods and services, they open up new possibilities to improve the lives of the poor by bringing them into the wider digital economy.



## SECTION 2.3

# INCLUSIVE INNOVATION DRIVES INCLUSIVE DIGITAL ECONOMIES

By Jaspreet Singh



## HIGHLIGHTS

- Facilitating access to services that people want will drive adoption and usage, creating desirable network effects. However, these benefits must be tempered by an understanding of some of the potentially negative impacts of innovation, some of which can be addressed by education.
- The UNCDF Innovation workstream aims to build robust use cases, providing access to broader sectors of the economy. Innovation, when supported by policy & regulation, infrastructure, and skills helps to enable the development and usage of solutions that can help us to move towards inclusive digital economies.

Bibhaker, a small-scale farmer in rural Nepal, grows enough food to feed his family, but there is seldom money for other things. He is eager to diversify what he grows on his 3-hectare plot. He is considering crops such as corn or jute, which he could sell at market for extra income. This revenue would enable him to meet some of his needs, as well as his aspirations for the family, such as educating his children and saving for difficult times. Bibhaker is hesitant, because these crops require an upfront investment in seed and fertilizer, and are also more prone to bad weather. There is the added challenge of getting his harvest to market, which is several hours away, but where prices are higher than local ones.

Farmers like Bibhaker, with the drive and ability to build a better life for their families, often have no access to markets or critical services such as credit and insurance. The lack of relevant, convenient and affordable services that effectively meet the needs of excluded populations is a relatively common development challenge for farmers such as Bibhaker, and the millions of other people who, like him, live at the last mile. Services leveraging digital technology can overcome constraints to market development, addressing the needs of clients in a commercially viable manner, underpinned by innovative business models. Providing Bibhaker with access to critical services would be a game changer,



enabling him to diversify his crops, while protecting him – for a small fee – from risks, and equipping him with the tools to build a better life for his family.

Unleashing innovation focused on the development of relevant services can address the needs of small-scale farmers like Bibhaker, as well as entrepreneurs and micro, small and medium enterprises. It can also enable local providers, such as mobile network operators and fintech companies, to innovate in markets, providing sustainable services and creating marketplaces for services, both digital and non-digital. For example, Africa's fintech companies have raised more than US\$320 million in funding since January 2015.<sup>61</sup> Facilitating access to services that people want will drive adoption and usage, creating desirable network effects. However, these benefits must be tempered by an understanding of some of the potentially negative impacts of innovation, some of which can be addressed by education (see Section 2.1, **Empowering clients to embrace inclusive digital economies**) and others by policy (see Section 2.4, **Enabling policy and regulation**).

## DEVELOPING SERVICES REQUIRES BARRIERS TO BE ADDRESSED

Several barriers need to be overcome to address the lack of use cases. Providers must possess the necessary capabilities, have access to open platforms, and be committed to meeting customer needs. Hurdles must be removed so that financial and digital service providers can deliver the services that excluded populations require to participate in the digital economy. Customer-centric solutions can leverage finance as an enabler, helping to overcome the high fixed costs of basic needs, in turn driving usage and improving economics for both customers and service providers. A case in point is Kenya-based M-KOPA,<sup>62</sup> a digital asset financing platform that offers customers access to pay-as-you-go products and services, including solar energy, smartphones, financial services and home upgrades.

## ORGANIZATIONAL CAPABILITY AND COMMITMENT

Providers need to possess capabilities in several areas to ensure that they can develop relevant use cases. This includes the ability to map out the customer journey, leverage research and data to deepen their understanding of customers, and use human-centred design in product development. They must be able to apply the lens of customer-centricity, lean innovation and agile design to craft solutions that address these unmet needs – a lens that helps to identify broader, more robust valuable propositions. These should be grounded in digital technology, combining complementary solution components, which are often held together by data, and distributed through commercially viable business models.

An organization must resist the urge to tweak existing products. It is not sufficient to use recycled product constructs on target customer segments. Providers must embrace the capabilities identified above and be truly committed to customer-centricity, without succumbing to the temptation to take shortcuts.

## OPEN PLATFORM

Innovation in the digital world requires access to open platforms, which should have three important characteristics. First is the ability to access and analyse open data. Second is that platforms can integrate with each other effectively, through technological infrastructure and commercial arrangements known as open application programme interfaces (APIs), to enable the efficient use of an expanding array of data. Open APIs greatly improve the ability of digital platforms, such as agricultural e-commerce companies, to integrate and embed financial services provided within their broader offering to customers. Third, innovation is accelerated when solutions can connect to an interoperable payments network, which provides users with a strong incentive for use because they can reach more people and businesses. A platform so configured can support providers to develop new solutions on top of the enabling digital rails, in turn fostering an innovative ecosystem. Achieving open platforms requires regulatory and policy engagement and support to overcome the perceived concerns that hold back data sharing and interoperability – a role played by UNCDF through policy (see Section 2.4, **Enabling policy and regulation**) and its advocacy for open platforms (see Section 2.2, **Enabling infrastructure for inclusive digital economies**).

<sup>61</sup> Forbes, "Africa's fintech investment quadrupled to US\$357m in 2018", [www.forbes.com/sites/tobyshapshak/2019/07/30/africas-fintech-investment-quadrupled-to-357m-in-2018/?sh=1ed4b35162db](http://www.forbes.com/sites/tobyshapshak/2019/07/30/africas-fintech-investment-quadrupled-to-357m-in-2018/?sh=1ed4b35162db).

<sup>62</sup> See [www.m-kopa.com](http://www.m-kopa.com).



# CLIENT-CENTRED INNOVATION DRIVES DIGITAL INCLUSIVITY

At UNCDF, we support different approaches to innovation, each with its respective focus, so that multiple paths for business innovation and sustainability can be developed. Accelerators enable start-ups to gain access to the tools required to achieve rapid growth in a short period of time. To support large numbers of start-ups seeking to develop sustainable business models, we work with incubators. And finally, we work with innovation labs to support business growth that is strategic and goal focused.

In developing supporting ecosystems for entrepreneurs and nascent fintechs, our work involves more than financial technology. It is focused on connecting with the broader technology enabled ecosystem, creating linkages with critical sectors in the real economy to build products grounded in deep sectoral understanding (such as agriculture, health and education).

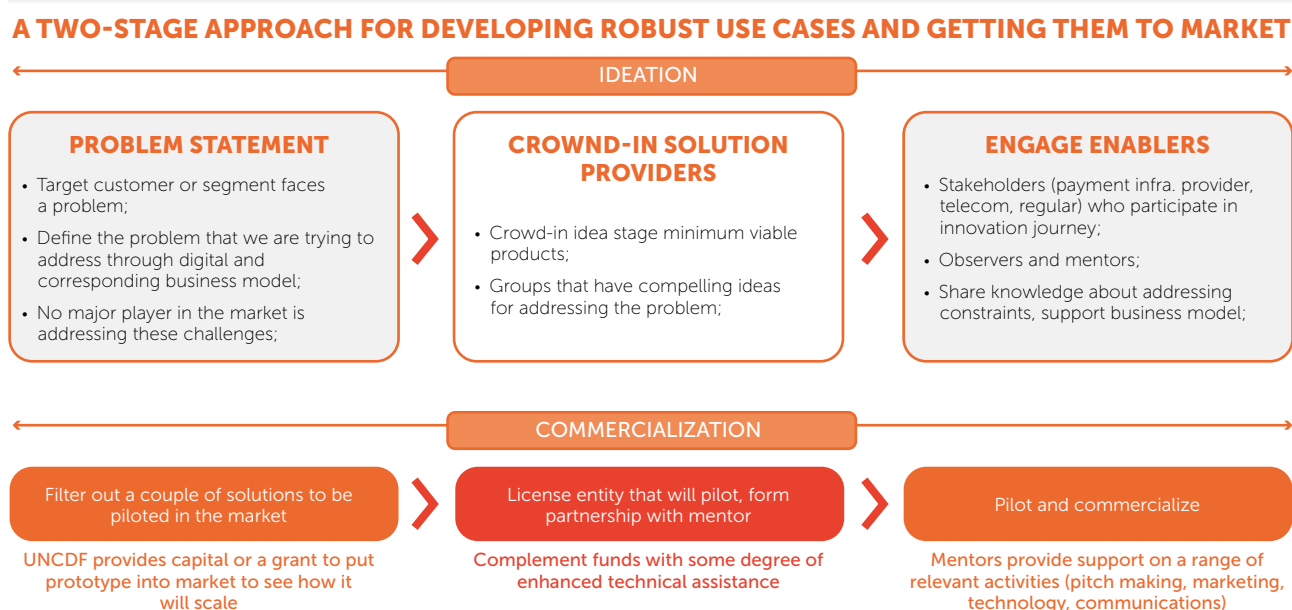
Our Nepal Agritech for Fintech Challenge is an example of an innovation lab initiative. The challenge focused on general problems faced by small-scale farmers in Nepal: the need to increase predictability and reduce

wastage, improve productivity, and enhance market access. By bringing together key buyers, suppliers and agricultural ecosystem participants, UNCDF was able to broker relationships and raise awareness of potential solutions. The challenge resulted in the development of an app-based loan appraisal platform, which accelerates loan appraisal, optimizes bank risk profiling, and forges an economic identity for the previously unbanked.

UNCDF runs a two-stage programme with innovative fintech companies to support them in developing robust solutions and getting these to market. At the ideation stage, we work with high-potential solution providers with promising business concepts and established enablers operating in the market. The work is focused on defining the problem, identifying relevant digital tools, and developing a business model. Solution providers are crowded-in to identify minimum viable products, while a number of enablers participate as mentors, sharing their insights to address constraints. Next, several high-potential prototypes are identified to receive additional support in the commercialization stage. Mentors partner with solution providers, providing assistance to take solutions to market. High-potential solutions receive funding, including loans and guarantees, to de-risk business plans, as well as enhanced technical assistance from UNCDF. One such company is SafePay Zambia, which is helping to improve access to health care in that country.

FIGURE 8.

The innovation delivery model



These structured approaches to problem-solving drive innovation and bring new solutions to market, which address the needs of the excluded, such as small-scale farmers like Bibhaker, helping clients to improve productivity and market access and protect against risks. In supporting the evolution of innovation ecosystems, we accelerate the development of digital tools and use cases that enable clients to build better lives.

## THE IMPACT OF INNOVATION ON THE MARKET

The ability of digital innovation to create effective solutions to the challenges faced by marginalized communities is anchored in customer-centricity. Solutions crafted through this lens have greater potential to reach vulnerable segments and new sectors in a viable manner. Grounded in customer need, these solutions drive more meaningful usage, enhancing their viability, and in turn the viability of the enabling infrastructure.

In pursuit of the Sustainable Development Goals, our efforts focus on improving the lives of the vulnerable and the poor by increasing their access to and use of other sectors. Mobile money, for example, has played a central role in facilitating new energy markets. Other solutions have forged new ride and delivery infrastructure via transport companies like Bolt and Gojek.<sup>63,64</sup>

This **Innovation workstream** aims at building robust use cases, providing access to broader sectors of the economy: for agriculture (see Section 3.6); clean energy (see Section 3.7); education (see Section 3.8); and health (see Section 3.9). To realize the full potential of the digital economy, however, other critical complementary elements must be in place. These include a digital infrastructure for use cases to run on, and clients with the skills to eagerly embrace the tools, devices and networks that underpin the digital economy. Policies and regulation that promote innovation must be balanced, addressing the risks that this creates (see Section 2.4, **Enabling policy and regulation**). Innovation, when supported by the complementary elements of these other workstreams, helps to enable the development and usage of solutions that can help us to move towards inclusive digital economies.

<sup>63</sup> See <https://bolt.eu>.

<sup>64</sup> See [www.go-jek.com](http://www.go-jek.com).



## ENSURING NO ONE IS LEFT BEHIND, THROUGH DIGITALIZATION

By Surina Shukri, MDEC CEO

The Malaysia Digital Economy Corporation (MDEC) has become a force to be reckoned with since its inception 25 years ago. Established in 1996 as the primary agency to lead the MSC Malaysia initiative<sup>65</sup>, it evolved in the last decade to become a critical mover for the digital economy. Operating under the oversight of the Ministry of Communications and Multimedia Malaysia (KKMM), it continues to manage its track-record of successfully driving forward the nation's digital economic agenda.

MDEC has been spurring the country's digital economy through three key thrusts – empowering digitally skilled Malaysians, enabling digitally-powered businesses and driving digital sector investments. These initiatives have created multiple positive impacts on the nation's economy.

There is no doubt that the growth of the digital economy plays an important part in society's betterment. As is, the digitalization of the economy is at the forefront of societal change today as it serves as a social equalizer to drive shared prosperity for all. This is especially so for countries that are now emerging from the debilitating COVID-19 pandemic.

The chaos of 2020 has underscored the urgency and relevancy of digital transformation for geopolitical segments; businesses and services sectors; and all socio-economic facets. This includes acknowledging and embracing the digital new norms and gaining access to the right tools as well as support services that can help all Malaysians make that digital leap.

<sup>65</sup> Established by the Malaysian government to accelerate the growth of the nation's Digital Economy, the MSC Malaysia status provides eligible ICT-related businesses, both local and foreign, with a wide range of incentives, rights and privileges to promote continued growth. <https://mdec.my/what-we-offer/msc-malaysia/>

## Ensuring Digital Literacy for All

To ensure that no one is left behind in this shift to a digital economy, it is critical that Malaysians of all economic levels have some basic level of digital skills. That is the main fundamental for MDEC's #SayaDigital Movement, an initiative that aims to empower and embolden Malaysians with the right capabilities so they can quickly embrace living in the digital era faster.

Done in collaboration with the Malaysian Ministry of Communications and Multimedia (KKMM), it will feature several MDEC-led capacity-building programmes that will provide not only businesses with various means to go digital but more importantly, enable Malaysians to be digitally skilled with speed and at scale.

With this Movement, we hope to accomplish four primary goals, namely 'digital making life convenient'; 'digital boosting income'; 'digital empowering careers'; and "digital accelerating business expansion".

Part of the movement includes MDEC's eBerkat programme that aims to help Malaysians gain knowledge on digital financial services. Specifically targeting the B40<sup>66</sup> community and micro-, small- and medium-sized enterprises (MSMEs), the platform gives them access to Savings, Lending, Investment, Payment (SLIP) capabilities and access to digital financial services and instruments.

## Digital Literacy Leading to More Opportunities

Increased digital literacy among Malaysians will eventually lead to more opportunities for them as well. This is especially true with revenue generation, which is a core concern for Bottom 40 percent (B40) and Middle 40 percent (M40) communities in the country. With the chaos caused by COVID-19, it has become crucial that affected communities have as many avenues for revenue and income generation as possible.

MDEC initiatives, like the Global Online Workforce (GLOW) programme, provides a digital platform where Malaysians are able to generate income through work found via crowdsourcing.

There is also eRezeki, another programme designed to open-up revenue opportunities for Malaysians, especially those with low incomes. This is done by allowing them to do digital assignments matched with their respective skills via an online crowdsourcing platform.

Launched in June 2015, over 300,000 participants (until end 2019) have since benefited from this initiative and have reported earning additional incomes.

## Digitalizing MSMEs

Aside from ensuring digital literacy among Malaysians and opening up income opportunities for them, it is also important that businesses, especially the MSMEs, digitalize so they can readily leverage on and access the digital economy.

In our effort to accelerate digitalization among MSMEs, MDEC introduced our eUsahawan programme in November 2015 to help onboard MSMEs into various e-commerce platforms. With the challenges that many MSMEs, who are mostly traditional brick and mortar business, face, the programme ensures that we help prepare them with an alternative avenue to access customers and income.

Accessing a bank of knowledge is also key for MSMEs that want to digitalize, which is where our Go-eCommerce learning platform comes into play. Launched in July 2017, this platform features an internationally recognized curriculum for beginners, intermediate learners and advanced entrepreneurs with the goal to provide participants with the knowledge they need to successfully transition from a traditional brick-and-mortar business to e-commerce.

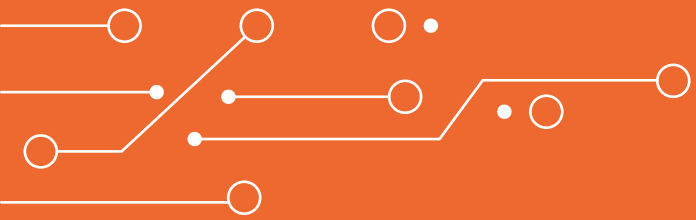
## Towards Malaysia 5.0

Even with MDEC developing and introducing many initiatives that encourage digital literacy and digitalization to bridge the digital gap, we also understand the importance of including private enterprises as well. This is why MDEC has also partnered with the United Nations Capital Development Fund (UNCDF) and Malaysia's Central Bank, Bank Negara Malaysia (BNM) to organize the Financial Innovation Lab in Malaysia.

By harnessing the innovativeness of these local private enterprises, businesses and startups through the challenge, we can develop and find solutions that help to promote an inclusive and connected digital economy.

This is especially important as while MDEC is focused on growing and developing the country's digital economy, we are also driven by the vision of Malaysia 5.0 – a human-first society in a tech-age.

<sup>66</sup> Malaysians are categorized into three different income groups: Top 20 percent (T20), Middle 40 percent (M40), and Bottom 40 percent (B40).



This will see digital innovations capably resolve societal problems while building a sustainable and inclusive economy where Malaysians of all walks of life will enjoy shared prosperity.

So, while we are making efforts to march forward towards the Fourth Industrial Revolution (4IR), we are also mindful that we have to put society at the centre of technology rather than the other way round.

After all, technology should work for the betterment of all, or else, what is the point.



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## SECTION 2.4

# ENABLING POLICY AND REGULATION

By Ahmed Dermish

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## HIGHLIGHTS

- Laws and regulations are not neutral. They can empower or discriminate, so their intent matters. The objective of inclusive regulation should be to engender trust in the financial system and enable greater choice.
- The UNCDF Policy and Regulation workstream accelerates an enabling environment for large-scale use of trustworthy digital services that contribute to inclusive economic growth.
- UNCDF works with partners to establish a policy environment that enables the deployment of solutions, technologies and enabling infrastructure to meet people's needs. These policies and regulations expand inclusion in a manner that balances the risks presented by new solutions and approaches, thereby engendering the trust necessary to build an inclusive digital economy.

Philip is a senior manager in the banking supervision team at a central bank. He has been charged with leading the process of developing a new consumer protection regulation. He is familiar with the regulations used in neighbouring countries and would like to implement similar approaches at home, to benefit as many people as possible. However, his job is time-consuming, and he only sees the complaints and concerns of higher-income customers who come directly to the central bank offices

in the capital city, or those of banks about increased costs that new regulations will bring. Philip wants a broader perspective of the customer experience with financial services, especially since mobile money services are increasing and more providers are using WhatsApp and Facebook to communicate with customers. He also needs to understand how he can compare his learning with examples from other countries and make them appropriate in his market context.



Meanwhile, Fatmata is the leader of an informal association of women merchants in a large local market. Many of the vendors and their customers are using mobile money for payments and cash management. This is even easier for those who use WhatsApp to share current prices with regular customers. However, she has noticed that many customers have stopped using mobile money because they are surprised by the fees that they are charged. Even merchants are receiving 'robo-calls' from unknown numbers after they use social media for sharing information about their goods, leading to concerns about their privacy. Customers and merchants have observed that at least with cash there are no hidden fees, and no need to give anyone your number.

Recently, Fatmata has been asked by a senior manager at the central bank if she can organize her association to participate in a public consultation process for new regulations. These new rules would help to define how financial service providers share information about services, and how they manage customer data and privacy. Her community of merchants is uncertain about the impact that they might have on such a big institution as the central bank, but they are excited about participating, promising to come with all their stories to share.

Growth of an inclusive digital economy requires people to trust digital systems and solutions. The UNCDF **Policy and Regulation workstream** accelerates an enabling environment for large-scale use of trustworthy digital services that contribute to inclusive economic growth. Our efforts help to establish this environment by assisting regulators and policymakers to strike the right balance between the benefits of inclusive growth and the risks presented by digital innovations needed to drive growth. The efforts in this workstream complement and support the three other workstreams discussed in Chapter 2.<sup>67</sup>

Laws and regulations are not neutral. They can empower or discriminate, so their intent matters. The objective of inclusive regulation should be to engender trust in the financial system and enable greater choice. Regulations can drive confidence in the financial sector by ensuring that assets are protected, services are fair, and that institutions treat clients with dignity. Choice can be

enabled by reducing the dominance of a few players, lowering barriers to entry (for customers and innovators), and providing equitable access to essential infrastructure. Interoperability of payment systems<sup>68</sup> or mobile number portability<sup>69</sup> are examples of areas where policy and regulations have enabled core infrastructure to be more accessible and available to people.

An effective enabling environment needs a broad and ambitious 'digital for development' policy framework to create a shared vision among market actors. The regulatory environment in turn needs to gently 'lean against this wind', to ensure that these policies are implemented safely and that large-scale services deliver the expected impact. This is particularly important where people are accustomed to the flexibility and familiarity of informal services, with which digital will always compete. Yet, in this world of rapid innovation and constant change, it is hard to know the best way to address the right combination of policy and regulation to build inclusive digital economies that exceed the benefits of informal services, which have been around for generations.

Least developed countries are not the only ones struggling with these issues; all countries are navigating this challenge – trying to understand how to establish an appropriately balanced policy and regulatory environment. The magnitude of the challenge can be understood by examining two indicators. First is the size of the informal economy, which provides a good cross-cutting metric to gauge the extent of the challenge in building an inclusive digital economy. Second is the scale of digital penetration in high-priority digital sectors, to highlight progress as well as flag potential challenges such as regulatory interaction.

Fortunately, regulators and policymakers are not alone on this journey. The power of peer-to-peer learning has revolutionized how governments model their priorities and design solutions, based on the successes of others. In addition to bilateral peer learning, multilateral learning has emerged as an essential means of South-South cooperation, thanks to partners such as the Alliance for Financial Inclusion, the Consultative Group to Assist the Poor, the Global System for Mobile Communications Association, the Bank for International Settlements, and other global institutions that have prioritized learning as a means of promoting change.

<sup>67</sup> These workstreams include the focus on Enabling Education in Section 2.1, the development of Infrastructure in Section 2.2 and Inclusive Innovation in Section 2.3.

<sup>68</sup> The United Republic of Tanzania's mobile payment infrastructure has seen significant benefits from interoperability. See International Finance Corporation, "Achieving interoperability in mobile financial services" [www.ifc.org/wps/wcm/connect/d16ceebb-1853-4a2a-89f3-52985f8e5134/IFC+Tanzania+Interoperability+Case+Study.pdf?MOD=AJPERES&CVID=IA4tZDN](https://www.ifc.org/wps/wcm/connect/d16ceebb-1853-4a2a-89f3-52985f8e5134/IFC+Tanzania+Interoperability+Case+Study.pdf?MOD=AJPERES&CVID=IA4tZDN).

<sup>69</sup> The European Union's regulations on mobile number portability are expressly intended to promote customer choice and competition. See <https://ec.europa.eu/digital-single-market/en/number-portability>.

## THE NEED TO UNDERSTAND TRADE-OFFS

The development challenge in building inclusive digital economies is understanding the trade-offs among competing policy and regulatory goals. This is made more difficult by the fact that navigating the trade-offs inherent in regulating an *inclusive* digital economy is an emerging practice. Nor is this a unique problem. The microfinance industry provides salient examples of such trade-offs. For example, interest rate caps on microloans are a public policy paradox:<sup>70</sup> they may reduce the cost of borrowing, but will also increase the cost of lending.<sup>71</sup> An inclusive economy will need to navigate similar trade-offs, in order to promote the safe use of new business models and innovations by low-income and marginalized people.

Contributing to these trade-offs is the presence of multiple well-established regulatory domains and their need to interact together. These domains include regulations encompassing competition, infrastructure and financial services. Multiple trade-offs intersect across these domains in our efforts to build inclusive digital economies. To better understand the nature of such trade-offs, it is useful to highlight relevant examples.

Licensing new types of financial service provider has expanded access to digital financial services. For example, policies have allowed non-bank entities to become licensed issuers of e-money. Yet to offset the perceived risk of introducing non-bank financial providers, regulators have opted to limit funds intermediation, restricting their scope of services and business opportunities. Here we see another trade-off, with the expansion of services and increased competition tempered by efforts to limit perceived operational and liquidity risk.<sup>72</sup>

In the case of data and privacy, there are efforts to give individuals greater control over their personal information, with attempts to design data protection regulations that put privacy first.<sup>73</sup> The European Union's (EU) General Data Protection Regulation is a pioneer in this regard, but for emerging markets that are different from advanced EU markets, it is unclear if these intersections are synergistic, promoting inclusion, or if they are counterproductive. Such fundamental changes in ownership rights create a trade-off between enabling innovation, with its potential for expanding data-driven business models, and limiting access to data with overly stringent data protection rules.

Many countries have adopted policies such as those noted to support innovation and efforts to build an inclusive digital economy, often leveraging inclusive digital finance as an enabler of these efforts. There is an increasing trend to develop specific tools that provide more space for regulators and policymakers to learn about appropriate responses, such as using sandboxes or innovation offices.<sup>74</sup> However, while we have playbooks for some circumstances, we do not for the intersection of these domains.

## UNCDF'S UNIQUE APPROACH TO HELPING GOVERNMENTS ADDRESS BARRIERS

At UNCDF, we make a point of helping our partners, as well as policymakers and regulators, to enable an inclusive digital economy by supporting their efforts to increase trust and drive network effects. People need to have trust that their money is safe on a card or phone, and that their personal data are secure, while positive network effects will unlock benefits of wide-scale use of digital services. Clients need to be convinced that public institutions have the governance and oversight tools to hold themselves accountable to outcomes that serve the public good.

<sup>70</sup> Appui au Développement Autonome, "The paradoxical case against interest rate caps for microfinance", [www.ada-microfinance.org/en/our-resources/media-center?media=185](http://www.ada-microfinance.org/en/our-resources/media-center?media=185).

<sup>71</sup> Although meant to protect consumers, interest rate ceilings almost always hurt the poor. See FinDev Gateway, "The impact of interest rate ceilings on microfinance industry", (July 2015). [www.findevgateway.org/paper/2015/07/impact-interest-rate-ceilings-microfinance-industry](http://www.findevgateway.org/paper/2015/07/impact-interest-rate-ceilings-microfinance-industry).

<sup>72</sup> Consultative Group to Assist the Poor, "A guide to supervising e-money issuers" (December 2018). [www.cgap.org/research/publication/guide-supervising-e-money-issuers](http://www.cgap.org/research/publication/guide-supervising-e-money-issuers).

<sup>73</sup> The European Union's General Data Protection Regulation (GDPR) and the embrace of 'privacy by design' as a policy tool is an excellent example of this. GDPR is a model that many regulators would benefit from adapting to their local context. The term 'privacy by design' means nothing more than 'data protection through technology design'. Behind this is the thought that data protection in data processing procedures is best adhered to when it is already integrated in the technology when created. See <https://gdpr-info.eu/issues/privacy-by-design>.

<sup>74</sup> See [www.findevgateway.org/slide-deck/2019/07/cgap-world-bank-regulatory-sandbox-global-survey-2019](http://www.findevgateway.org/slide-deck/2019/07/cgap-world-bank-regulatory-sandbox-global-survey-2019).

Our process focuses on prioritization and helping partners to identify options. We engage our partners in a dialogue, beginning by understanding their high-level policy objectives. We then break these down into component parts, interrogating them one at a time. Moving through each step with intention and urgency accelerates the policy and regulatory design process.

In Africa, the Bank of Sierra Leone teamed up with our technical specialists to design an innovative consultation process that involved working directly with customers, particularly women, in various remote parts of the country. This has resulted in regulations that are much more in line with customer needs, while also balancing business sustainability.<sup>75</sup> In the Pacific, the Reserve Bank of Fiji and other regional regulators collaborated with our regional specialists to design an innovation focused 'regional sandbox' to unlock new business models.<sup>76</sup> This has resulted in dialogue and approaches that help multiple regulators in the region to balance innovation with stability and safety.

Sustainable solutions are not the only thing that policymakers and regulators ask for. There is clear demand for additional support to enable inclusive markets, and despite the differences among market environments, the 'demand context' often falls into three distinct categories. These are (i) **accelerating the policymaking process**; (ii) **building systems for market oversight and supervision**; and (iii) **developing strategic plans to leverage digital services that promote inclusion and market development**.<sup>77</sup> Individually, each category improves policymaking and regulatory capacity to manage systemic stability and protect customers. Collectively, they ensure that regulators and policymakers have the tools to keep pace with rapidly changing markets catalysed by technology. UNCDF has organized its support of policymakers and regulators in line with these needs.

Dialogue on high-level policy objectives is a useful starting point for engaging our regulator and policymaker partners. We have worked closely

with regulators and policymakers to design a set of tools and guides that build on their objectives and put them in the driver's seat.<sup>78</sup> This empowers their decision-making while we work with them to be rigorous in their process, collaborating on multiple pathways to achieve the desired outcomes.

The efforts of this **Policy and Regulation** **workstream** are transformative. We help our partners to establish a policy environment that enables the deployment of solutions, technologies and enabling infrastructure to meet people's needs. These policies and regulations expand inclusion in a manner that balances the risks presented by new solutions and approaches, thereby engendering the trust necessary to build an inclusive digital economy.

<sup>75</sup> UNCDF, "Bank of Sierra Leone's consumer protection journey", <https://policyaccelerator.uncdf.org/whats-new/bank-sierra-leones-consumer-protection>.

<sup>76</sup> AFI, "PIRI publishes Pacific Regional Regulatory Sandbox Guidelines", [www.afi-global.org/newsroom/news/piri-publishes-pacific-regional-regulatory-sandbox-guidelines/](http://www.afi-global.org/newsroom/news/piri-publishes-pacific-regional-regulatory-sandbox-guidelines/).

<sup>77</sup> UNCDF, "Enabling policy and regulation for digital finance ecosystems", [www.uncdf.org/article/3687/enabling-policy-and-regulation-for-digital-finance-ecosystems](http://www.uncdf.org/article/3687/enabling-policy-and-regulation-for-digital-finance-ecosystems).

<sup>78</sup> See <https://policyaccelerator.uncdf.org/policy-tools>.

## **BETTER THAN CASH ALLIANCE MEMBERS ACCELERATE RESPONSIBLE PAYMENT DIGITIZATION IN COVID-19 RESPONSE**

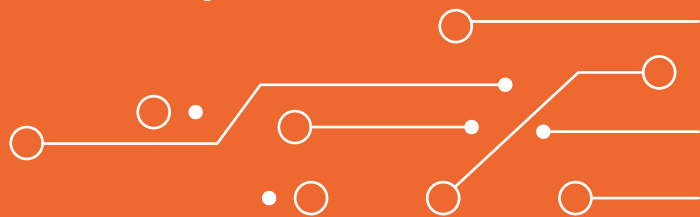
By Ruth Goodwin, Managing Director,  
Better Than Cash Alliance

The Better than Cash Alliance (the Alliance), with its secretariat hosted by the United Nations Capital Development Fund, is a partnership of governments, companies, and international organizations that accelerates the transition from cash to digital payments. During the past decade, member governments of the Alliance have built effective regional and national coalitions to accelerate responsible digitization of payments to expand financial inclusion and to work towards achieving the Sustainable Development Goals (SDGs), in particular in LDC countries.

The latest Global Findex data revealed that 69 percent of adults – 3.8 billion people – now have a bank account. The significant increase in the use of mobile phones and the internet to conduct financial transactions contributed to a rise in the share of account owners sending or receiving payments digitally from 67 percent to 76 percent globally. In emerging economies, it went up from 57 percent to 70 percent between 2014 and 2017.<sup>79</sup> When done right, digital payments bring efficiency and transparency, drive women's economic participation, and inclusive growth. The most important takeaway from these numbers is that the biggest gains overall, and the most significant progress in gender equality, are in countries where the Alliance members have made responsible digital payments a top priority. They have adopted the Alliance Responsible Digital Payments Guidelines which identify nine good practices for empowering users who have previously been financially excluded or underserved.

Alliance LDC members such as Ethiopia, Rwanda, and Bangladesh, are leading by example, moving away from cash, and supporting progress towards the achievement of the SDGs. In Ethiopia, the Alliance provided catalytic technical assistance to the Government to develop a widely consulted National Digital Payments Strategy 2020-2023, where key public and private sector stakeholders prioritized and championed to close the gender gap in financial inclusion and boost women's economic participation. Similarly, in Rwanda, the Alliance provided technical expertise including drawing lessons from peer members to catalyse Government of Rwanda's award-winning "EjoHeza" Long-Term Savings Scheme (LTSS). The goal of the scheme is to bridge the existing pension coverage gap, so all Rwandans have an equal right and opportunity to achieve a financially secure and dignified retirement in a safe, affordable, convenient and well-regulated environment.

Highlights of the Alliance's work in Bangladesh include bringing millions of women into the digital economy, and building more transparent, efficient, and inclusive supply chains (B2P). The ready-made garment (RMG) sector represents 15 percent of Bangladesh's GDP, and contributes over 80 percent of the country's exports. The sector employs approximately 4 million workers, 60 percent of whom are women. Yet in 2017 only 25 percent of garment factories were paying workers digitally through bank account or mobile wallet, according to research we conducted with the Sustainable Apparel Coalition.<sup>80</sup> To move this needle on digital wages in the RMG sector, in November 2019, the Alliance leveraged our convening powers and the Government of Bangladesh's leadership to bring all key public and private sector stakeholders including the Central Bank – the Bangladesh Bank, the Bangladesh Garment Manufacturers and Exporters Association (BGMEA), and global garment brands together for the first time to focus on action at the Digital Wages Summit. This led to several landmark commitments<sup>81</sup> by brands like Gap, M&S, Inditex, H&M (see box) to responsibly digitize wages and create new social and economic opportunities for Bangladesh garment employees in Bangladesh's growing digital economy. The Alliance led knowledge creation,



<sup>79</sup> <https://globalfindex.worldbank.org>

<sup>80</sup> <https://www.betterthancash.org/news/blogs-stories/factories-paying-workers-digitally-are-five-times-more-likely-to-provide-good-social-and-labor-practices>

<sup>81</sup> Call to action from 4 leading garment companies: Digitizing workers' payments in the garment sector in Bangladesh

targeted advocacy, and capacity-building, together with proof-of-concept pilots, with strong government, industry body and private sector leadership proved effective. Responsible digital payments is now embedded in and recognized as a sustainable practice for government, companies and their apex bodies working in RMG in Bangladesh, driving inclusive local ecosystems for digital cash.

### Landmark commitments at the Digital Wages Summit in November 2019

- H&M announced that all its supplier factories in Bangladesh would have digital payment systems by the end of 2021
- Gap Inc. said all its tier-1 suppliers would digitize wages by the end of 2021
- The BGMEA committed to 90 percent of the garment workers being brought under a digital wage system by 2021
- The International Labour Organization (ILO) announced its membership to the Alliance and a new commitment to responsible digital payments

The COVID-19 crisis in 2020 meant that millions of people in Bangladesh were under lockdown, including the garment factories. The Bangladesh government's

COVID-19 RMG Wage Relief Fund mandated that all salaries continue to be paid – but paid digitally. This resulted in the opening of 2.5 million new accounts in second quarter of 2020! This massive shift from analog to digital was possible because of the strong commitment to digitize wages made at the Digital Wages Summit. During the pandemic, the Alliance worked with key stakeholders to build digital payments grievance redressal capacity to support first time users of digital payments to create trust and put in place a recourse mechanism for first time users – important elements of the Alliance's responsible digital payment guidelines.

Following the International Labour Organization (ILO) membership of the Alliance in 2019, a global learning exchange series was hosted between the Alliance, ILO, the International Finance Corporation (IFC), and their Better Work programme on digital wages during the pandemic. The Alliance catalyzed the launch of the ILO's Global Centre on Digital Wages for Decent Work, which will showcase Bangladesh's key successes and good practices for other emerging markets to transition to digital wage payment through research and evidence-based advocacy.

LDCs now face unprecedented challenges in making progress on towards the SDGs due to COVID-19. Continuing to advance financial inclusion by facilitating access to digital financial services is a vital element in tackling inequality, improving prosperity, and empowering women and men worldwide. The Better Than Cash Alliance will continue to help its members respond better and faster to the ongoing demands brought by COVID-19 and help them drive progress in the transition from cash to digital payments.







## PART 3

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## SECTION 3.1

# OVERCOMING THE GENDER DIVIDE: WOMEN AS BUILDERS OF INCLUSIVE DIGITAL ECONOMIES

By Nandini Harihareswara



## HIGHLIGHTS

- Digitally delivered services that provide access and control – tailored to women’s needs and accessible through alternative delivery channels such as women’s groups – can help them to meet their challenges and become linked to the formal economy.
- UNCDF helps to empower women, both in the decisions that they make and in their economic empowerment across sectors, including health, education and access to financial services. Our efforts encompass market diagnosis, helping to advance women’s financial and digital capabilities, improving digital services and policy efforts among others.

**“It has greatly changed my life – I set a savings plan, then I started saving. It has helped me to learn how I can become income independent, how to become protective of my body, and how to make decisions about my body.”**

These are the sentiments expressed by Winnie, a young Ugandan empowered by the Trust Girls App, an interactive mobile application training adolescent girls – particularly low-income girls – in critical topics related to sexual and reproductive health and financial education.

## UNEQUAL IN EVERY WAY

The World Economic Forum’s Mind the 100 Year Gap report<sup>82</sup> asserted that we are unlikely to see gender parity in our lifetime. Gender gaps diminish the role of women in society and their potential contribution, marginalizing them to the sidelines.

In the context of economic activity, women are not empowered to make decisions, and lack autonomy in their control over digital and financial tools. According

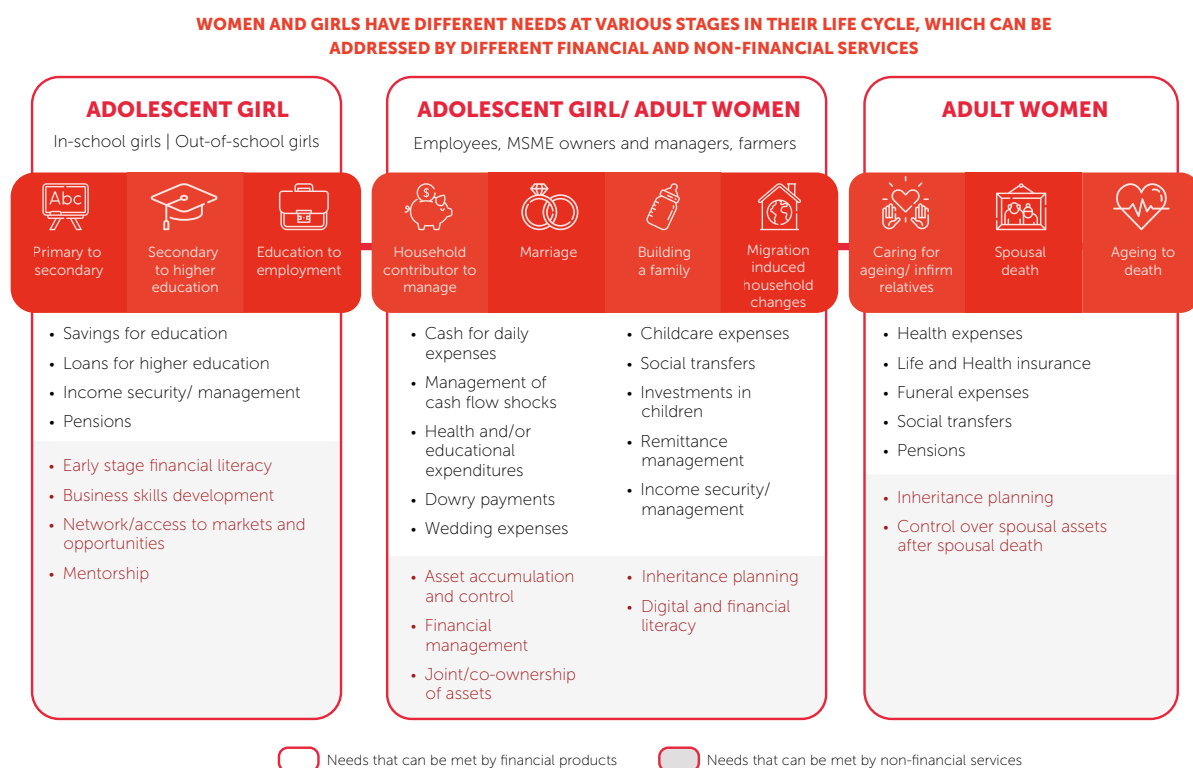
<sup>82</sup> World Economic Forum, *Mind the 100 Year Gap: Global Gender Gap Report 2020*, [www.weforum.org/reports/gender-gap-2020-report-100-years-pay-equality](http://www.weforum.org/reports/gender-gap-2020-report-100-years-pay-equality).

to statistics from the United Nations Department of Economic and Social Affairs, one in three married women from developing countries has no control over household expenses or major purchases.<sup>83</sup> There are fewer economic opportunities for women, and their access to critical infrastructure and digital services lags behind that of men; across low- and middle-income countries, the gender gap is about 8 percent for mobile usage and 20 percent for Internet usage on a mobile phone.<sup>84</sup> Women are disproportionately excluded from payments services, savings and access to credit. Their access to financial services in least developed countries (LDCs)<sup>85</sup> is 28 percent lower than that of men, and

this increases to 63 percent for women entrepreneurs trying to access capital.<sup>86</sup> Finally, women often lack the necessary education and skills, such as basic digital and financial capabilities.

UNCDF considers the unique financial product and service needs of women as they move through life, working in a focused, impactful manner to address the disparities in empowerment and opportunity which disadvantage women. Through our efforts, we are helping to close the access gap to products and services to achieve gender equality helping to empower girls and women (Sustainable Development Goal (SDG) 5).

**FIGURE 9.**  
The evolving financial product and service needs of girls and women



<sup>83</sup> United Nations Department of Economic and Social Affairs, *The World's Women 2015: Trends and Statistics*, <https://unstats.un.org/unsd/gender/chapter8/chapter8.html>.

<sup>84</sup> Global System for Mobile Communications Association (GSMA), *Connected Women: The Mobile Gender Gap Report (2020)*. [www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/05/GSMA-The-Mobile-Gender-Gap-Report-2020.pdf](http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/05/GSMA-The-Mobile-Gender-Gap-Report-2020.pdf).

<sup>85</sup> World Bank, *Global Findex Database 2017* (World Bank Publications, 2018).

<sup>86</sup> World Bank, Global Enterprise Survey, [www.enterprisesurveys.org/en/enterprisesurveys](http://www.enterprisesurveys.org/en/enterprisesurveys).



## HOW CAN DIGITAL HELP?

Digitally delivered services that provide access and control – tailored to women’s needs and accessible through alternative delivery channels such as women’s groups – can help them to meet their challenges and become linked to the formal economy.

At different stages in their life, women and girls face different challenges, occupying different economic roles with distinct needs. Women have a different experience from men when it comes to accessing and using services, including challenges with accessing basic, digital and financial literacy. But increasingly, digital products can create sustainable business models that can address these life cycle challenges.

From an early age, access to education can be improved through new digital approaches, including virtual learning and high-quality learning materials. As girls grow older, they shoulder more responsibilities, contributing to their household or building their own family. They need to develop resilience, enabling them to successfully navigate transitions. Improving access to technology can help them to enhance their digital skills and financial literacy, expand their network, achieve better access to critical services such as education and health, and have better prospects of accessing market opportunities and finance to develop new businesses.

A number of barriers need to be overcome to address the lack of parity in access to enabling products and services, and autonomy by women and girls:

- absence of empowerment and autonomy
- lack of economic opportunity
- poor access to infrastructure and services
- absence of services designed to address the needs of women
- lack of opportunities for education and skills development.
- Overcoming these barriers is critical in order to attain gender parity, providing more opportunities to women.

## ENABLING WOMEN AS BUILDERS OF DIGITAL ECONOMIES

UNCDF helps to empower women, both in the decisions that they make and in their economic empowerment across sectors, including health, education and access to financial services. Our efforts encompass market diagnosis, helping to advance women’s financial and digital capabilities, improving digital services and policy efforts among others.

## DIAGNOSING MARKET CONSTRAINTS AND TARGETS FOR WOMEN’S INCLUSIVENESS

For example, the UNCDF Participation of Women in the Economy Realized (PoWER) diagnostic in Myanmar provided deeper understanding of the main constraints to women’s digital and financial inclusion. These included product awareness, particularly digital, and the need for sex-disaggregated data. These findings resulted in a project to increase awareness and usage of financial products by rural women living in post-conflict areas. Following this initiative, which was conducted with eight financial partners in Myanmar, we have helped to add five solutions tailored to women’s needs, while increasing the number of women served by these partners by 85,000. The tool, developed in partnership between UNCDF and the Bill and Melinda Gates Foundation, has been used across Asia and Africa.

Our Inclusive Digital Economy Scorecard (IDES) is being used in Uganda to establish baselines and targets for the inclusion of women in the digital economy (such as the gender gap in mobile phone ownership, account ownership) through a women’s inclusiveness score. The IDES is being rolled out across countries where our Inclusive Digital Economy Practice is active. For more information about the tool and its deployment, see Section 1.4 **Measuring and tracking progress of inclusive digital economies**.

Alongside its partners, UNCDF has helped to develop linkages with informal savings groups in Africa dominated by women at a community level and supporting peer learning in a ‘safe space’. These efforts have supported 900,000 women group members in accessing and using formal financial services over the past four years. In Tanzania, a toolkit that delivers training modules through a tablet-based app and SMS learning platform has helped to improve the digital and financial capabilities of almost 15,000 women refugees.





## BETTER DIGITAL SERVICES TO BUILD BETTER LIVES

In most LDCs, women's access to digital services is impeded by lack of innovation when addressing their needs. Our efforts foster innovation to bring relevant digital services to market, supporting opportunities for women. Examples include platforms, to help improve market access and provide opportunities for skills development; and solutions, including collateral free lending, crowdfunding and peer-to-peer lending.

UNCDF has deployed a competition model to spur innovation and expand tools used by providers to focus on women clients. In the *Zambian Sprint4Women* competition, digital finance providers tested their products and business models in the field, then pitched these to judges. UNCDF supported finalists with technical assistance encompassing product design, digital finance and data analytics. The competition winner, local FinTech *Hobbiton*, changed its approach to messaging and the delivery of its products for women. Its efforts have helped to expand the customer base by more than 50 percent, reaching 1.1 million customers, and increasing the women served from 74,000 to 264,000.

Open digital payment systems can increase women's access to financial services. In its partnership with Women's MicroBank Limited (WMBL) of Papua New Guinea, UNCDF provided technical assistance to support the creation of biometric enabled *Mama Bank Access Points (MAPS)*. MAPS enable easier and secure access to banking services, requiring only a fingerprint to authenticate customers. The rollout of MAPS has enabled WMBL to significantly increase its customer base. In addition, UNCDF provided a de-risking mechanism in the form of a US\$244,000 loan to WMBL to finance its growing loan portfolio, resulting in a 145 percent increase in women micro-entrepreneurs to almost 2,000, and a 66 percent increase in savings customers, to more than 56,000.

## PUBLIC AND PRIVATE 'COALITIONS OF THE AMENABLE'

Coalitions can address barriers such as the need for data disaggregated by sex, which can highlight the economic and social participation of women and track their progress over time. One example is our participation in the *Generation Equality Forum's Economic Justice and Rights Coalition*. Working together with key stakeholders, we are creating a blueprint to accelerate the attainment of gender equality in the next 10 years.

## EFFORTS TO INFORM POLICY AND REGULATION

It is important to work together with policymakers and regulators to inform policies that take into account the needs of women. Such efforts play a key role in advancing an ecosystem approach for addressing constraints to gender equality and women's economic empowerment.

At UNCDF, we work together with regulators such as the Central Bank of Cambodia, to increase the number of women with savings accounts. By analysing transactional data from key financial service providers and demand-side data, we determined that women were more likely to have passive savings accounts (75 percent) than men (59 percent). This helped to make savings mobilization a key element of Cambodia's national financial inclusion strategy. One component of the strategy is to increase the promotion of remittance-linked savings products, particularly cross-border remittances, which are more often received by women. In addition, the Cambodian strategy has a target of halving the financial exclusion of women, from the current 27 percent to 13 percent.

## REDUCING THE 100-YEAR GENDER GAP

Our work with women to address the gender divide is transformative in a number of ways. It focuses on the ability of women to be agents of change, enabling their digital and financial autonomy. It inspires collaboration among actors who do not work together, such as women's groups and mobile network operator associations. These collaborations are foundational in enabling women to be builders of the digital economy. Our efforts provide a roadmap for LDCs and other markets on how to address the 100-year gender gap in a tangible manner, to achieve gender equality (SDG5) and an end to poverty (SDG1).<sup>87</sup>

<sup>87</sup> These efforts seek to promote SDG5 and SDG1. The objective of SDG5 is to achieve gender equality and empower all women and girls, while SDG1 seeks to end poverty in all its manifestations.



## A CALL FOR BOLD, COLLECTIVE SOLUTIONS TO SPARK A GENDER-DIVERSE DIGITAL RESET

By Helene Molinier, Senior Adviser for the Action Coalition on Innovation and Technology, UN Women

With 2020 marking the 25<sup>th</sup> anniversary of the Fourth UN World Conference on Women, momentum was building to celebrate and more importantly consolidate fragile progress gained in women's rights. We could not have imagined that a global pandemic would put the world into lockdown, producing enormous reversals in the well-being of women while deepening gender inequalities.

25 years ago, only 4 percent of the world's population could benefit from the Internet. Nowadays, approximately half of the world's population is connected and COVID-19 has made digital tools a lifeline for millions of people. However, the pandemic has also exposed the digital divide and shown that the population excluded from the digital world – which includes a majority of women and girls – are the most at risk of being left behind by this crisis.

The year 2021 will be a pivotal point, where public and private partners will need to embrace collective action to improve the state of the world and build a future that will move towards a more equal and inclusive digital transformation. The **Generation Equality Action Coalition on Technology and Innovation** (Action Coalition) builds and reflects this imperative, as an innovative, multi-stakeholder partnership that will mobilize governments, civil society, international organizations, and the private sector to catalyse action, drive investment and deliver concrete, game-changing results for gender equality.

The challenges faced by women and girls to access, use, influence, and create digital technologies are multi-dimensional. They will require designing transformative actions to remove barriers associated with traditional social norms, lack of education, costs,

trust, safety concerns or geographies, among many others. The Action Coalition aims to drive commitments towards specific tactics that will allow us to accelerate progress toward this change.

### Bridge the gender gap in digital access and competence

The current trends show lower access to and utilization of digital tools for women and girls and a lack of diverse skilled workforce in the technology sector, in a world with an ever-increasing demand for qualified professionals. To thrive in a 4<sup>th</sup> Industrial Revolution shaped by technology, girls and women need equitable access to science, technology, engineering, and mathematics (STEM) education, digital and transferable skills. This requires engaging with families and enlisting communities to change harmful gender norms, attitudes and mindsets. We need to provide more opportunities for women and girls, especially those in vulnerable situations, who are facing the most barriers to take full advantage of technology. The Action Coalition will explore blended financing instruments to mobilize private, public and philanthropic capital specifically to promising education models that address the combination of 21<sup>st</sup> century skills and gender gaps.

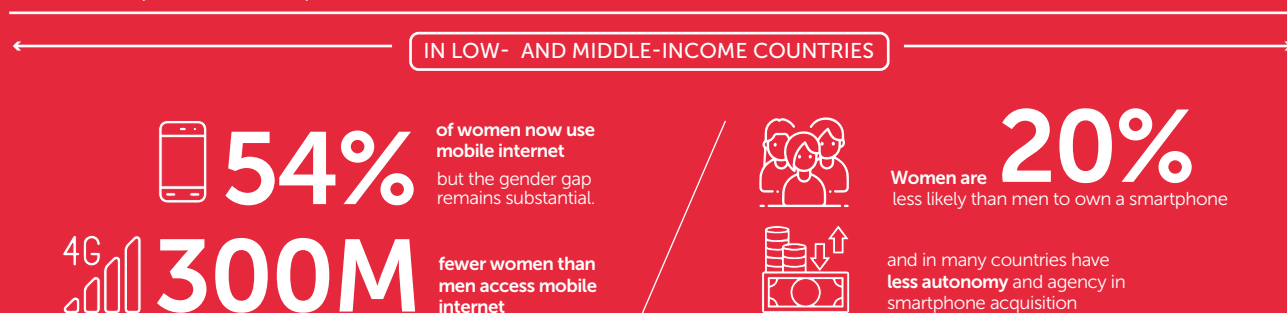
### Invest in feminist technology and innovation

Technological innovations can empower women and girls on multiple fronts. They provide access to platforms that amplify their voices. They help leapfrog traditional structures and enhance women's economic participation. However, very few of these digital tools are developed by women or for women, leaving them no opportunity to influence and shape the design of technology. The Action Coalition aims to catalyse efforts across public and private sector actors to develop inclusive and gender transformative technology. The objective will be to invest in and amplify innovations that provide affordable, accessible, useable and sustainable solutions for women and girls to access new opportunities in a variety of sectors such as health, education, agriculture, climate or financial inclusion.



FIGURE 10.

The mobile phone landscape for women<sup>88</sup>



## Build inclusive, transformative and accountable innovation ecosystems

Countries and businesses need to build intentional pathways for women and girls' advancement in technology and to lead in changing behaviours and addressing workplace stereotypes. This will require a focus on the human side of the digital transformation and to create new networks that connect talent, investors, academia, government institutions, companies and non-profit organizations. The Action Coalition will pioneer gender-transformative digital innovation hubs, advocate for the adoption of feminist digital policies, and actively promote women's participation in decision-making procedures that shape global digital cooperation.

## Prevent and eliminate online and tech-facilitated gender-based violence and discrimination

Women and girls are more likely to be targets of online violence, such as physical threats, sexual harassment, bullying, stalking, sex trolling, and exploitation. As a result, their voices and representation online are

at risk of being marginalized. We need to reset how we develop technology so that everyone equally benefits from platforms, services, and data while maintaining control over their digital lives. Countries and businesses must take responsibility and provide greater transparency and accountability in tackling technology-facilitated gender-based violence (GBV) and discrimination. This will require new regulations but also innovative user care services, and data analysis of safety and privacy issues faced by women and girls or persons in vulnerable situations.

The current efforts to bridge the gender digital divide cannot afford to stall now. We must be united because moving past the COVID-19 pandemic will require extraordinary collaboration and solidarity – among people, organizations, and countries. A generation of girls will be excluded from the digital world if we fail to seize this unique opportunity. UN Women and the Action Coalition's leadership group stand ready to collaborate with all stakeholders interested to join the coalition - civil society, governments, businesses, and academia - to ensure the international community is mobilised and committed to leverage technology to empower women and make irreversible progress that will help realise gender equality before 2030.

<sup>88</sup> GSMA, Mobile Gender Gap Report 2020, <https://www.gsma.com/r/gender-gap>

## SECTION 3.2

# CREATING PATHWAYS TO ECONOMIC OPPORTUNITY FOR YOUTH

By Maria Perdomo  
and Ata Cisse



## HIGHLIGHTS

- The world is experiencing a demographic bulge in its youth population, with more than 3 billion people presently under the age of 25. But many of today's youth lack the digital and non-digital skills necessary to successfully access meaningful economic opportunities. They also lack access to the formal economy and its associated opportunities.
- UNCDF is using digital technology to address the challenges of building skills, unlocking markets, creating new employment opportunities and improving youth access to financial services and capital. Our efforts seek to create skills and opportunities for today's young people as they move through life's transitions, to attain the objectives of SDG8.

Mamadou Bah is a 24-year-old farmer from Guinea who had never owned a bank account. He is a beneficiary of the Guinea INTEGRA programme. Participating in this programme has enabled him to open a checking and savings account with a local microfinance institution and receive financial education through an application on his phone. After nine months of training, and regular contacts with the financial service provider (FSP), Mamadou has asked for a loan to fund an agricultural project. The education that he received empowered him to request the loan and he is pleased with the conditions of the offer. Having received his loan, Mamadou is now working with a group of other youths to expand his farming activities.

The world is experiencing a demographic bulge in its youth population, with more than 3 billion people presently under the age of 25.<sup>89</sup> The bulge is most pronounced in least developed countries and is challenging the ability to create gainful employment. Youth unemployment currently accounts for 35 percent of the world's total, with significantly higher rates for young women. Yet globally, there are skilled and specialized jobs that cannot be filled. Nevertheless, 470 million new jobs are needed by 2030 to absorb the growing youth population into the labour force.

<sup>89</sup> World Bank, *Atlas of Sustainable Development Goals 2018: 8 Decent Work and Economic Growth*, <https://openknowledge.worldbank.org/handle/10986/29788>.

Many of today's youth lack the digital and non-digital skills necessary to successfully access meaningful economic opportunities. They also lack access to the formal economy and its associated opportunities. Finally, youth have poor access to the financial services and capital necessary to propel them on their journey of self-employment or entrepreneurship. At UNCDF, we are seeking to close the skills and jobs gap, in order to attain Sustainable Development Goal (SDG) 8.<sup>90</sup>

## YOUTH FACE CHALLENGES AS THEY NAVIGATE IMPORTANT TRANSITIONS

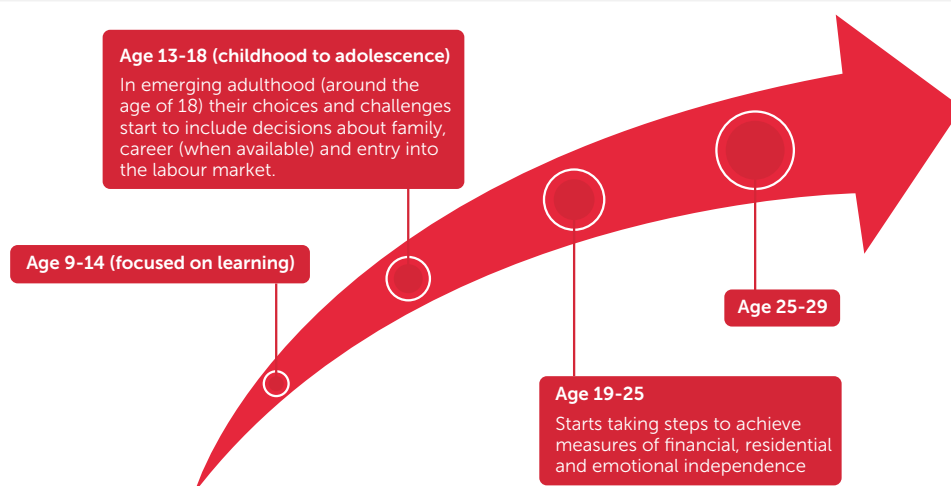
Youth is not a homogenous segment, but is comprised of several distinct age-based groups between the ages

of 18 and 35, each with its own unique needs.<sup>91</sup> Those aged 12–14 are typically at a learning stage, while those aged 15–18 experience important transitions as they start their journey into adolescence. As they move towards adulthood, around the age of 18, young people's choices and challenges include decisions about family, career (when available) and entry into the labour market. Young adults (those aged 19–25) go through another complex transition as they take definite steps towards achieving measures of financial, residential and emotional independence. Fully engaged in their work life, those aged 26–35 continuously strive to build a better life for themselves and their families, learning to develop support networks in order to advance.

It is important to ensure that youths are not forced at a premature age to take on adult roles as they transition from school to work. Instead, the resilience of youth needs to be enhanced, helping young people to successfully navigate transitions or hinge points – each with unique needs – to ensure their continued development.

FIGURE 11.

Youth: key age points and transitions



## DIGITAL CAN EMPOWER YOUTH

Digital can and is empowering youth in several ways, through even the simplest technology. Yet there are particular challenges around the digital inclusion of girls and young women (see Section 3.1 **Overcoming the gender divide**). Combining smart technology and connectivity, digital technology offers an opportunity to bundle the services needed by youth: information, training, access to crowdfunding platforms, payment systems, savings, credit

and insurance. Failure to digitally include youth will have a serious negative impact on their resilience.

Digital solutions can help young farmers and business owners to access capital and professionalize the way that they manage their business (such as bookkeeping and marketing). Social network platforms can be tailored to youth, who can reach out to experts on specific topics and network with other youth entrepreneurs. The development of content can leverage the capabilities of creative industries.

<sup>90</sup> The objective of Sustainable Development Goal 8 is to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

<sup>91</sup> While the UN definition for youth is 15–24, UNCDF uses the definition provided by governments to ensure alignment with their respective contexts and priorities.



Digital technology can help to address the challenges faced by youth in several areas:

- developing the skills needed for the digital economy
- enhancing access to employment opportunities, both formal and informal
- mobilizing savings
- increasing access to finance
- improving market access.

Properly understood and used in context-specific approaches, digital technology can produce positive results for youth. UNCDF is unlocking the potential of digital technology to address youth challenges, taking a market development approach in its work.

## DEVELOPING NECESSARY SKILLS FOR YOUTH

We help young people to develop a variety of digital and non-digital skills to improve their ability to successfully navigate life transitions.

In the Gambia, UNCDF is supporting young entrepreneurs to access relevant services through a digital application designed to improve their business management skills. This formalizes and tracks their business information, facilitating better decision-making. In addition, FSPs can use this information to improve their lending decisions. Launched in late 2020, the initiative has a target outreach of 12,000.

Digital tools can be used to deliver more focused financial education at lower costs and to expand the reach of these services. For example, a financial education initiative implemented with a Ugandan partner through physical channels resulted in 20,000 account openings over four years. A digital education initiative focused on a smaller, harder-to-reach population of girls from the urban slums of Kampala generated more than 1,000 account openings in a single month. While a clean comparison is difficult, the digital results are nevertheless impressive.

In a separate initiative across five African nations, UNCDF is developing the financial capabilities of youth through literacy training offered by financial service providers on a digital platform. Launched in 2019, the platform had trained more than 4,500 youths as of the end of 2020 and is on track to reach 30,000 by the end of 2023. These literacy efforts are indicative of the opportunity to expand reach through digital solutions.

## ENHANCING EMPLOYMENT OPPORTUNITIES

Digital finance creates new employment opportunities for youth by facilitating new business models in finance, in sectors such as energy and the sharing economy, helping to absorb young people into the local workforce. In Senegal, UNCDF has supported a major mobile operator in setting up satellite mobile money kiosks managed by young entrepreneurs in peri-urban and rural areas. The successful pilot not only created jobs for 150 youth, but also increased access to mobile money services. Our activities in other sectors such as clean energy and ride-hailing services, have created new jobs. For example, work with Tootle in Nepal has contributed to the registration of 12,000 young bike riders.

## MOBILIZING SAVINGS

Many young people lack the knowledge and funds required to start a business. To address this gap, we have worked in a number of countries across Africa to provide youth with the knowledge and skills to use digital services. For example, UNCDF has supported efforts to develop and commercialize solutions linking savings with credit. Financial education and a demonstrated ability to manage savings have helped participants to gain access to credit. More than 760,000 young people have been trained and have gained access to financial services through these initiatives. Young entrepreneurs (43 percent of them young women or girls) have saved US\$24 million. Close to 395,000 were able to borrow more than US\$76 million to start or expand their own business.

## IMPROVING ACCESS TO FINANCE

Enhancing youth access to financial services and capital through digital technology is another key area of UNCDF focus. Improved access can empower young people to improve their lives by instilling positive behaviours, facilitating the development of products that meet their needs and enabling new access channels.

UNCDF is also addressing challenges faced by FSPs in the Gambia and Guinea in lending to youth – testing the use of a psychometric solution to facilitate lending decisions, in the absence of scoring models, to assess clients' potential of repayment. Initial results suggest that the model is performing well. Full validation would enable wider use of psychometric solutions.

Crowdfunding platforms, which provide a new access channel, can provide start-up capital to young entrepreneurs who have no collateral. This channel is well suited to youth due to its low delivery costs, as well as its alignment to segment needs and behaviours. In late 2020, UNCDF partnered with M-Change to bring its solution to Gambian youth, enhancing their access to capital. Linking to local financial service providers, such efforts can help young people to build a credit history and access greater capital to grow their business.

## IMPROVING MARKET ACCESS

Digital technology can help youth to unlock market opportunities by providing young entrepreneurs with access to marketplaces and the formal economy. Platforms such as Jumia and Alibaba are revolutionizing the way that people trade. Digifarm, a platform focused on agriculture, is providing farmers with access to new markets, impacting the way that they sell and organize their activities. Such platforms can spur sectoral improvements by providing an ecosystem of complementary services: in this case, crop advice, financial services and market access, increasing productivity, as well as the appeal of the agriculture sector to young people, with its tremendous absorptive capacity in terms of jobs and income.

## TRANSFORMATIONAL IMPACTS AND THE SDGs

Demographic trends and the resulting bulge in global youth populations present us with a significant development challenge. This is a problem that can be addressed through efforts focused on education and the creation of new economic opportunities. UNCDF is using digital technology to address the challenges of building skills, unlocking markets, creating new employment opportunities and improving youth access to financial services and capital. Our efforts seek to create skills and opportunities for today's young people as they move through life's transitions, to attain the objectives of SDG8.



## DIGITAL FINANCIAL SERVICES AS A KEY FOR ENABLING OPPORTUNITY IN AFRICA

By Reeta Roy, President and CEO of The MasterCard Foundation

Arguably, the single biggest challenge—and opportunity—facing Africa's policymakers today is youth employment. The global pandemic has exacerbated existing problems, many of which are rooted in poverty and driven by a lack of opportunity. Addressing economic inequity is an imperative for all of us—governments, the private sector, education leaders, and philanthropic organizations like the Mastercard Foundation. Digital financial services can help us achieve this goal to better serve communities, improve economic inclusion, and create opportunities for dignified work.

For over a decade, the Mastercard Foundation has been advancing financial inclusion to enable millions of people facing poverty across Africa to improve their livelihoods and lives. One initiative that has been key to this is the Mastercard Foundation Fund for Rural Prosperity. The US\$50 million Fund was launched in 2015 with the goal of expanding financial services to 1 million smallholder farmers and other economically-disadvantaged groups in rural Africa. It enabled 38 businesses to develop and scale innovative approaches to offering savings, credit, insurance, and other services to rural clients in 15 countries.

Approximately 95 percent of the products and services these companies delivered had digital components. One company in Kenya, for example, developed a 100 percent mobile-based loan facility to enable smallholder farmers to access affordable working capital. Easy Solar in Sierra Leone sold entry-level solar products on a rent-to-own basis and used the clients' repayment history as

a form of credit-scoring so that they could purchase other products. In Uganda, Ibero offered farming inputs on credit, along with agronomic and financial training, while guaranteeing farmers a market for their produce. Elsewhere, a technology-based credit-scoring engine was used by financial service providers to analyse data from various sources relevant to the agriculture sector—from mobile phone usage data to warehousing data—to create credit scores of clients to enable them to access credit.

So, what were the results? By 2017, the Fund for Rural Prosperity reached 1 million clients. To date, more than 3 million clients have benefitted from this programme. 36 percent of these were rural women. 28 percent were young people under the age of 35. More than half of these individuals received financial products and services, as well as a training on important topics like agricultural practices and financial literacy. Equipped with knowledge and tools, these clients started to increase their yields and incomes, and could begin to look ahead and plan for the future.

A number of factors contributed to these results. First, the prevalent use of digital platforms enabled rapid scale. Second, the Fund required companies to co-fund these activities, giving them a stake in the success of their clients. Finally, several of the companies used a human-centred approach to understand the needs and views of farmers in order to design relevant products and services.

A second set of results was more surprising—and intriguing. Increased access to financial services enabled these companies to create more than 2,600 jobs,

most of which were filled by young people. Equally impressive, were the indirect benefits. As smallholder farmers were able to purchase more agricultural inputs, buy better equipment, improve land productivity, and increase yields, they also hired others in the community to help cultivate their land and harvest their produce. With this extra income, they generated new local demand for a variety of products and services, sparking entrepreneurship and stimulating the local economy.

These findings set us on a journey to understand and unravel the link between financial inclusion and improved livelihoods for young people. In 2018, the Mastercard Foundation launched Young Africa Works, our bold new strategy to enable 30 million young people across Africa, particularly young women, to access dignified and fulfilling work by 2030. We believe that digital financial services will be a powerful lever to increase these opportunities across Africa. Our experience with the Fund for Rural Prosperity certainly suggests that. Yet surprisingly, there is a relatively limited body of evidence that connects these dots. As part of the Young Africa Works strategy, we will seek to build that evidence base.

Digital financial services hold the promise of cost-effective delivery of financial products and services to hundreds of millions of people. Moreover, digitally-enabled agency banking enhances access to banking services to underserved populations, thus deepening financial inclusion. As we navigate this global pandemic, this is an opportune time to better understand the multiple benefits of digital financial inclusion on the resilience of families and communities. If our experience is anything to go by, the ripples of impact may be greater than we realize.



## SECTION 3.3

# ADVANCING FINANCIAL RESILIENCE FOR MIGRANTS AND THEIR FAMILIES

By Amil Aneja



## HIGHLIGHTS

- As important as remittances are in their own right, and as necessary as it is to improve efficiencies and lower costs, remittances' truly transformative potential goes far beyond moving money from point A to point B. Remittances can and should be a gateway product to a full suite of financial services for a population that is largely financially excluded at present.
- All kinds of migrant-centric financial innovations become possible with a shift to digital. Few of them are practical until that happens. What is ultimately needed is end-to-end digitization: migrants receiving wages digitally, and sending digital remittances to their families, who in turn use those remittances for an array of digital services, such as payments and savings.

An estimated 272 million people, or roughly 4 percent of the world's population, live and work outside their countries of origin. The vast majority are voluntary or economic migrants, and regardless of individual circumstances, they share a common goal: sending money to loved ones back home. Remittances, as these money transfers are known, are a vital source of income for millions of households in developing countries. Families receiving remittances spend more on nutrition, health, education, housing and livelihoods development, all of which directly advance the Sustainable Development Goals (SDGs).

The SDGs acknowledge the importance of remittances both to household well-being and economic development. They also cite the issue of high remittance fees, and set a target of no more than 3 percent transaction costs. However, as important as remittances are in their own right, and as necessary as it is to improve efficiencies and lower costs, remittances' truly transformative potential goes far beyond moving money from point A to point B. Remittances can and should be a gateway product to a full suite of financial services for a population that is largely financially excluded at present. That suite of services can and should, in turn,

be a powerful way to enhance resilience for migrants and their families: to help them avoid setbacks when possible, prepare for them when necessary, and recover from them quickly.

Many migrants are shut out from quality financial services by a variety of physical, technical or cultural barriers. Low-income or low-skilled migrants, in particular, are likely to be financially excluded in their host countries, while their families are excluded back home. Individuals on both sides may lack proof of identity, awareness about quality financial services, or practical access to such services. But even financially excluded migrant families will find a way to move money from the wage earner in the host country to the loved ones at home. If financial inclusion efforts (like development in general) begin with meeting people where they are, then financial inclusion for migrants logically begins with remittances, the universal financial experience for that population.

The migration life cycle provides specific entry points for 'remittances plus' interventions, both those aimed at product delivery and skills building.

**Pre-departure.** Targeted financial literacy education can demonstrate the benefits of well-managed, formal, digital remittances which, unlike the cash-based alternatives, can be linked to savings and credit products.

**Arrival.** Early adoption support can help migrants with the process of actually opening accounts, which may be an unfamiliar experience that poses cultural or linguistic difficulties. Workshops and support groups can help migrants to adopt a long-range planning orientation, for financial but also other life goals, and share experiences with one another.

**Settlement.** Intermediate support interventions can deliver vocational skills development, connect migrants to additional resources as relevant, and provide counselling on financial products and institutions in both the host and home countries.

**Pre-return.** Financial and legal counselling is often useful to effect the safe and cost-effective repatriation of savings or other funds. Migrants preparing to return home will also benefit from referrals to travel agencies, movers and other reasonably priced service providers, including legal aid and documentation support.

**Post-return.** Financial and legal counselling present available options among financial institutions in home countries. For entrepreneurs, counselling and referral services can provide introductions to connect business ideas or plans to the right local incubator(s) or accelerator(s).

Every step on the path presents opportunities to think beyond remittances as a transaction, and reimagine them as the on-ramp to a superhighway of financial services that can help to take migrants to the future that they want. Digitizing remittances themselves is the all important first step. As long as remittances remain the cash-based, over-the-counter transfers that are dominant, it will be logistically impractical and cost-prohibitive to layer on additional services.

In a digital model, however, such products become real options. For example, one of the ways that families use remittances is to capitalize small businesses. The overseas migrant family member sends home money, and the family uses it to stock the shelves of its grocery store, or to buy more livestock, or whatever its livelihood requires. However, the migrant still has to send the money, and the family is still limited by what can be sent, and when.

UNCDF is supporting a company called SympliFi in a digital innovation. SympliFi works with financial institutions in the receiving country to provide the local family with a line of credit for their business, guaranteed by the overseas migrant. Instead of actually having to send the money, the migrant agrees via the SympliFi platform to act as guarantor.

In one stroke, the SympliFi digital solution gives the family greater financial flexibility and control, generates business for the home country financial institution, and enables the migrant to keep the money that he or she would otherwise have remitted. SympliFi's innovation focuses on business lending, but all kinds of financial services are ripe for creative adaptations.

In Malaysia, UNCDF facilitated a partnership between AXA, a leading global insurance company, and Merchantrade, a money transfer operator. In May 2018, the partnership launched Remit Secure, an insurance product that delivers income support for temporarily disabled or hospitalized migrants, as well as providing migrant families with up to six months of remittances in the event of the migrant's death or disability. Available for purchase at the equivalent of just US\$1.25 per month via Merchantrade's E-Remit Mobile App and Merchantrade Money wallet, the product features plain language terms and conditions, a simple claims process, and the flexibility to make premium payments either at branches or via mobile wallet deductions. In the very active migration corridor between Nepal and the United Arab Emirates, UNCDF is bringing together an ecosystem of financial institutions, delivery partners and point of sale networks to connect through a blockchain-powered lending platform. Migrants with no or thin-file credit histories, and without savings or other collateral, can access uncollateralized credit on the basis of their remittance histories and other alternative data.



In short, all kinds of migrant-centric financial innovations become possible with a shift to digital. Few of them are practical until that happens. What is ultimately needed is *end-to-end digitization*: migrants receiving wages digitally, and sending digital remittances to their families, who in turn use those remittances for an array of digital services, such as payments and savings. With generous support from the Swiss Agency for Development and Cooperation and the Swedish International Development Agency, UNCDF is pursuing this end-to-end approach, aligned with the four workstreams that guide all the work within our Inclusive Digital Economies practice.

Within **Policy & Regulation**, we are reviewing remittance legal and regulatory frameworks at country and regional level, and supporting central banks to monitor and analyse remittance flows.

Within **Open Digital Payment Ecosystems**, we are strengthening the capacity of providers to acquire agent networks and/or develop partnerships with other agent networks, while also facilitating interoperability and implementation of regional KYC (know your customer) protocols.

Within **Inclusive Innovation**, we are supporting remittance service providers with financial and technical assistance for research and product development.

Within **Empowered Customers**, we are working with our implementing partners and with governments to ensure transparency and consumer protection on pricing and service delivery.

Migrant-centric financial products are crucial to reducing low-income migrants' vulnerability in a world where increasingly fluid labour markets may fray the social contract between employer and employee. They are also vital to ensuring that all migrants can go where their best opportunities lie, and can make the most of their talents once there, for the benefit of themselves, their families and their host countries.

## DIGITIZATION: THE KEY TO MIGRANTS' FINANCIAL INCLUSION

Digital technologies are rapidly expanding the potential to increase migrants' resilience and reduce their vulnerability. From digital identity, cross-border remittances, machine learning-based risk models to price insurance premiums and more, innovative digital business models are challenging the incumbent, traditional systems. Moreover, the evolution of regulations and digital deployments is steadily advancing the inclusive digital economies that can create equal access to fundamental opportunities – finance, health and job skills – which are essential to the economic inclusion of migrants and their families.

**Access to finance.** Financial products and services – such as payments, savings, insurance, credit, pension portability – adapted to the needs of migrants increase the capacity of migrant families to generate savings and invest in livelihood opportunities. Such products and services, however, are not often available.

**Access to health.** Relative to native populations, migrants may have less access to health services or to the kinds of job that provide medical leave. Especially for migrants working in higher-risk occupations, such as construction, mining, shipping, port services, dangerous good transport, etc., life-threatening diseases must be addressed. If untreated, these diseases can spread multi-drug resistant infections and create public health hazards. Curative and preventive health services must encourage better health-seeking behaviour among migrants, especially among vulnerable, traditionally underserved groups, such as women, children and the elderly.

**Access to job skills.** In major countries of destination, immigrants drive 40–80 percent of labour force growth,<sup>92</sup> which in turn helps to fuel economic growth. As many destination countries confront falling birth rates, ageing populations and other demographic changes, targeted immigration can help to fill critical skill gaps and occupational gaps, while investing in job skills can also improve migrant income and savings.

<sup>92</sup> McKinsey Global Institute, "Global migrations' impact and opportunity" (2016).

TABLE 2.

Digital economies for migrants

	Finance	Health	Job skills
Migrant	<ol style="list-style-type: none"> <li>1. Remittances</li> <li>2. Payments</li> <li>3. Salary deposits</li> <li>4. Savings</li> <li>5. Credit</li> <li>6. Seed capital for business</li> <li>7. Superannuation/Pension portability</li> </ol>	<ol style="list-style-type: none"> <li>1. Health Insurance offered through the digital platform of remittance service providers. (e.g. AXA migrant insurance offered by remittance service provider, Merchantrade)</li> <li>2. Access to basic health-care services offered through the digital platform of remittance service providers</li> </ol>	<ol style="list-style-type: none"> <li>1. Digital content for migrants specific to their jobs offered through the platforms of remittance service providers (e.g. freight services, mining, shipping and port services, air cargo, hospitality, etc.)</li> <li>2. Skills that can facilitate the return and integration in the home communities. (e.g. agri value chain, supply and cold chain management, etc.)</li> </ol>
Migrant family	<ol style="list-style-type: none"> <li>1. Personal credit</li> <li>2. Housing loan</li> <li>3. Overdraft</li> <li>4. Financing against remittances</li> </ol>	<ol style="list-style-type: none"> <li>1. Accidental death</li> <li>2. Accidental disability</li> <li>3. Funeral insurance</li> <li>4. Disaster risk (e.g. Fiji, Nepal, the Philippines)</li> </ol>	<ol style="list-style-type: none"> <li>1. Pre-departure campaigns</li> <li>2. Skills for prospective migrants. (e.g. logistics, port processes, air cargo, passenger handling, dangerous goods handling, supply and cold chain, freight forwarding, etc.)</li> </ol>

## DIGITAL TECHNOLOGIES AND ACCESS TO BASIC SERVICES IN THE GLOBAL SOUTH

By Keith Tatenda Mudadi and Gabriela Violim Mercurio,  
Cities Alliance

The concept of 'smart city' has gained significant traction in recent years and has influenced development approaches and policy responses by local governments in rapidly urbanizing countries. This has spurred the development of projects that seek to leverage the deployment of Information and Communications Technologies (ICT) and data to solve challenges experienced by rapidly urbanizing cities. At the core of the smart city concept lie various understandings and components, including:

- Sensing
- Data driven urban systems designed to improve government service
- Enhancing local economies
- Reducing natural resource consumption and waste
- Enhancing citizen's engagements with governments and each other

While digital innovation remains central to the smart city concept, a key question is whether investment in smart technologies and digital innovations ultimately contributes to improving the well-being of citizens in order to 'leave no one behind'. Standardized application of technology-driven approaches to data monitoring in cities without due consideration of the local context may create adverse developmental effects, such as exclusionary governance practice.

However, a collaborative approach in the deployment of digital technologies can positively impact the provision of urban services, livelihoods, and living standards of the urban poor. This is the main conclusion from the Cities Alliance's *Secure Tenure Call in African Cities: Micro Funds for Community Innovation Call of 2019*<sup>93</sup> and a recent publication on *Smart technologies for more equitable city economies*<sup>94</sup>. Services that can be leveraged by a collaborative approach in deployment of digital technologies (and were supported by the innovation call and investigated in the publication) include waste management, access to electricity, and land management. Transformative effects of digital technologies in access to these services unfolded into three main functions:

1. Operational uses by removing barriers to entry on formal markets
2. Transactional uses by reducing transactions costs and asymmetries of information
3. Informational uses by bringing evidence and putting on the map informal dynamics

The Secure Tenure Call for Proposals provided some evidence on successful initiatives that use digital technologies to solve some of the challenges faced by municipal and national authorities in developing countries. Lack of tenure security, land and property rights in informal urban settlements remains one of the biggest challenges in improving access to basic services and living conditions of the urban poor. It has a direct impact on investment decisions made by households in upgrading their own dwellings and the private sector, and governments in investing in infrastructure and access to basic services. Similarly, tenure insecurity directly impacts the livelihoods of the urban poor as the constant threat of eviction discourages vendors and small businesses reliant on the public space to sell their goods and services to further invest in their ventures and market stalls. The call provided small grants of up to US\$50,000 to support local innovative solutions that deploy modern technologies to improve tenure security, land, and property rights in African cities.

<sup>93</sup> Cities Alliance, *Call for Proposals - Secure Tenure in African Cities: Micro Funds for Community Innovation*, (2019). Available at <https://www.citiesalliance.org/newsroom/news/business-opportunities/call-proposals-secure-tenure-african-cities-micro-funds>.

<sup>94</sup> Cities Alliance, *Smart technologies for more equitable city economies*, (Brussels, Cities Alliance/UNOPS, 2020), Available at <https://www.citiesalliance.org/resources/publications/publications/smart-technologies-more-equitable-city-economies>.

A key finding from this Call was the need to embed technology into social interaction and social dialogue. This has proven to be crucial not only to ensure that the technology will fit local practices and needs, but also to create acceptance and adherence from both users and beneficiaries. All five projects funded under the Secure Tenure Call have demonstrated the transformative effects of collaborative deployment of digital technologies in alleviating urban challenges.

For instance, the project in Zanzibar<sup>95</sup> used new data collection and processing methods to solve the challenge faced by the Government of Zanzibar in providing certificates of occupancy to landowners. Working closely with the government, Spatial Collective (the grant recipient) set up a data model and data collection protocols, developed a field guide and criteria for selection of tools and methods, created customized technology to collect data, trained Zanzibar stakeholders on data collection and management, carried out data collection in a pilot area, and supported the Zanzibar Commission for Lands (COLA) with data processing. The collaborative approach in the deployment of digital technologies in the land management system resulted in the review of the existing adjudication process, redesigning the paper-based adjudication form, and building a platform for digital land data collection to be used by the government.

Another interesting example was the initiative implemented by Association 3535 (the grant recipient)

in Côte d'Ivoire<sup>96</sup> in partnership with the technical services department of the municipality of Cocody. The project created an open-source software application that speeds up issuance of permits for occupation of public space benefitting informal vendors and small business in the municipality of Cocody. The platform's key functionalities are modelled after the existing steps in the process to obtain a permit, but it uses online alternatives to replace most steps requiring in-person interactions and visits to the technical services' local office. The process equally leverages other digital solutions such as mobile money to allow vendors to make payment for the permit. These innovations, which were conceived considering literacy challenges, support transparency and accountability. Deployment of these digital solutions during the pilot project resulted in a significant decrease in the processing time of requests for permits from eight weeks to 22 working days.

The cases of use of digital technologies to improve access to basic services and rights highlighted here are small, incremental, replicable, and driven primarily by civil society and private actors. However, ensuring community engagement and collaboration with local governments in the early stages of the initiatives have proven to be key for the successful adoption of the technologies proposed. Promoting similar initiatives and scaling-up existing ones will require creating an enabling environment to spur investments in digital technologies and a demand driven approach, based on a willingness to consider grassroots technological uses and innovations.

<sup>95</sup> Cities Alliance, *Secure Tenure on Zanzibar: creating a new methodology for collecting data on land*, (2020). Available at <https://citiesalliance.org/resources/knowledge/global-knowledge/secure-tenure-zanzibar-final-report>.

<sup>96</sup> Association 3535, *eServices Techniques: a tech solution to help street vendors get access to the public space*, (Cities Alliance, 2019). Available at <https://citiesalliance.org/resources/knowledge/global-knowledge/eservices-techniques-report>.

## SECTION 3.4

# EXPANDING OPPORTUNITIES FOR REFUGEES AND OTHER FORCIBLY DISPLACED PEOPLE

By Ivana Damjanov



## HIGHLIGHTS

- Digital technology can support the arrival of refugees through registration and identity solutions, assist with emergency response, improve refugee resilience and self-reliance, and lay the foundation for access to services from other sectors, such as health, energy and education.
- UNCDF seeks to overcome the obstacles that prevent refugees from using digital technologies. This work paves the way for refugees to access digital services that build stronger inclusive digital economies. Enhanced self-reliance provides refugees with agency over their economic lives and a path to prosperity for their families and communities.

The past decade has seen a dramatic change in the refugee landscape; the population of forcibly displaced people (FDPs)<sup>97</sup> reached 79.5 million in 2019,<sup>98</sup> with more than half of all refugees having been displaced for more than 10 years.<sup>99</sup>

In response to the growing refugee crisis, in 2016 United Nations member states adopted the United Nations High Commissioner for Refugees (UNHCR)-issued

comprehensive refugee response framework (CRRF)<sup>100</sup> and in 2018 affirmed the Global Compact on Refugees.<sup>101</sup> These efforts provide a basis for predictable and equitable burden-sharing and the assumption of responsibility among member states. Both emphasize refugee self-reliance and integration with host communities, highlighting the potential contribution of refugees to local economic growth.

<sup>97</sup> FDP is used to refer to both asylum seekers and refugees.

<sup>98</sup> See [www.unhcr.org/globaltrends2019](http://www.unhcr.org/globaltrends2019).

<sup>99</sup> See <https://blogs.worldbank.org/dev4peace/how-many-years-do-refugees-stay-exile>.

<sup>100</sup> See [www.unhcr.org/en-us/comprehensive-refugee-response-framework-crrf.html](http://www.unhcr.org/en-us/comprehensive-refugee-response-framework-crrf.html).

<sup>101</sup> See [www.unhcr.org/en-us/the-global-compact-on-refugees.html](http://www.unhcr.org/en-us/the-global-compact-on-refugees.html).



Take the case of 24-year-old Odette, who fled her home in Burundi five years ago. She is one of the thousands of refugees in the Mahama refugee camp in Rwanda. After registering her biographic and biometric data with UNHCR and the World Food Programme (WFP), she was provided with an identity card and a bank account, through which she receives her monthly cash assistance transfer. By selling cassava in the market, she is able to augment her monthly grant. Proceeds from her sales are tucked away until Saturday, when she meets with her savings group, whose other members are also women refugees. At one of their meetings, the group's coordinator shares a tablet showing Odette and her friends how to access other services on their phones and create a budget for their businesses. Odette dreams of being able to farm her own land and open a small stand to sell dresses. Through new friendships and the technology she sees around her, she thinks it may one day be possible.

## TRANSFORMING REFUGEE RESPONSE THROUGH DIGITAL TECHNOLOGY

Digital technology has advanced the way that refugee and humanitarian agencies address their respective challenges.<sup>102</sup> During the COVID-19 pandemic, the humanitarian sector has relied more heavily on digital technology. When refugees, and women in particular, are digitally included, they are more resilient and better prepared to respond to economic shocks. Yet women are less likely than men to access and use mobile technology, especially in humanitarian contexts,<sup>103</sup> so closing this mobile gender gap is essential. Harnessing digital innovation to drive scale and create broader systemic change reaching beyond refugee camps is a central focus of our efforts at UNCDF. Digital technology can support the arrival of refugees through registration and identity solutions, assist with emergency response, improve refugee resilience and self-reliance, and lay the foundation for access to services from other sectors, such as health, energy and education.

However, several barriers prevent refugees from becoming self-reliant and contributing to local communities:

- lack of infrastructure, such as legal identification, Internet access, mobile connectivity and mobile network operator (MNO) agents;
- the absence of an enabling policy environment allowing refugees to become more economically sufficient and contribute to the local economy;
- lack of digital literacy, enabling refugees to understand and use digital services and solutions.

## A CATALYST FOR ENABLING DIGITAL RESPONSES

UNCDF has undertaken a number of efforts to drive digital innovation, in order to facilitate the efficient delivery of assistance to refugees. The CRRF is used to describe the refugee journey to highlight its efforts in this regard.

## ADMISSION AND RIGHTS

As in the case of Odette, once registered and granted refugee status, an asylum seeker is issued with identification, beginning the process of accessing available humanitarian services. Ideally, a robust, portable, digital identification system could facilitate economic self-reliance and local integration, benefiting the host country's economy. UNCDF's efforts address policy-related interventions such as identification – critical for refugees to access basic mobile services<sup>104</sup> and to realize their economic potential. We advocate for refugee rights and digital and biometric technology for identification. In Uganda, for example, UNCDF supported the successful advocacy efforts of UNHCR, WFP and the Global System for Mobile Communications Association to have the Uganda Communications Commission accept the attestation letter that refugees are granted by UNHCR as a valid form of identification for SIM card registration.<sup>105</sup> Based on the needs and perceptions of refugees, it was important for this effort to consider privacy and data protection early in the design of the new enabling policy framework.

<sup>102</sup> United Nations High Commissioner for Refugees, "How smartphones and social media have revolutionized refugee migration" (2018). [www.unhcr.org/blogs/smartphones-revolutionized-refugee-migration/UNHCR](http://www.unhcr.org/blogs/smartphones-revolutionized-refugee-migration/UNHCR).

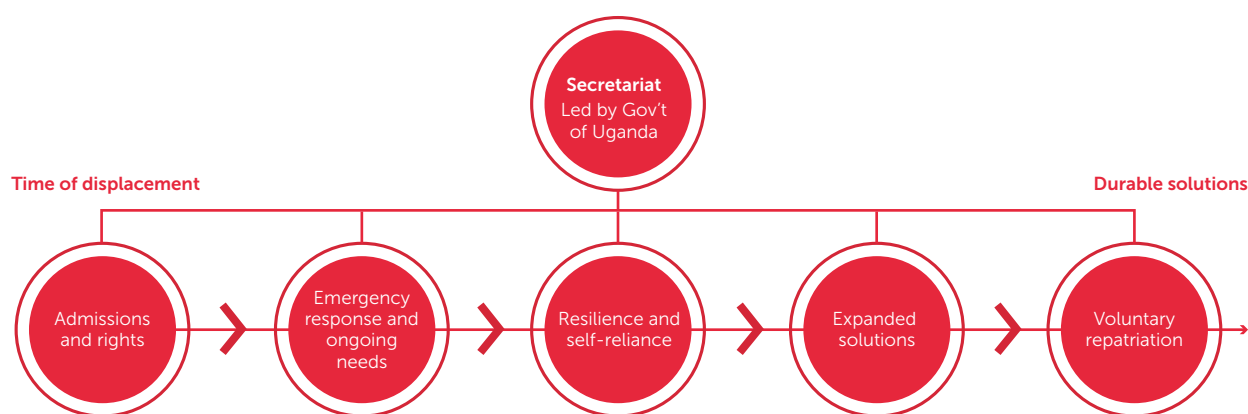
<sup>103</sup> Global System for Mobile Communications Association (GSMA), "Bridging the mobile gender gap for refugees" (2019). [www.gsma.com/mobilefordevelopment/resources/bridging-the-mobile-gender-gap-for-refugees](http://www.gsma.com/mobilefordevelopment/resources/bridging-the-mobile-gender-gap-for-refugees).

<sup>104</sup> GSMA, "Enabling access to mobile services for the forcibly displaced: policy and regulatory considerations for addressing identity related challenges in humanitarian contexts" (2017). [www.gsma.com/mobilefordevelopment/wp-content/uploads/2017/09/Policy-Note-FDPs-and-Mobile-Access.pdf](http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2017/09/Policy-Note-FDPs-and-Mobile-Access.pdf).

<sup>105</sup> See [www.uncdf.org/article/2506/national-sim-verification-uganda](http://www.uncdf.org/article/2506/national-sim-verification-uganda).

**FIGURE 12.**

The journey of refugees, from arrival at a camp to voluntary repatriation



## EMERGENCY RESPONSE AND ONGOING NEEDS

Global advancements in mobile technology and connectivity provide a tremendous opportunity to leverage digital tools to protect and serve refugees. Technology enables humanitarian agencies to deliver services more cost-effectively, with greater accountability and efficiency.

Digital innovation has transformed service delivery from in-kind and direct food assistance to cash transfers delivered through mobile money, using biometric identification.<sup>106</sup> In 2018, WFP successfully piloted its Building Blocks initiative in Jordan and Pakistan,<sup>107</sup> relying on blockchain technology to create virtual accounts accessed by refugees through iris scans in participating local shops and digitally empowering more than 100,000 refugees in the process. UNCDF has been supporting the digitization of cash-based initiatives in Zambia's Maheba camp<sup>108</sup> through a pilot that delivered digital payments to 870 beneficiaries, as well as in Niger and Senegal, which was expected to reach 20,000 refugees in the Matam Camp.<sup>109</sup> In 2017, UNCDF partnered with DanChurchAid and Airtel to pilot the digitization of payments to more than 15,000 refugees in Uganda's Bidi Bidi camp. This was made possible by Airtel's investment in three permanent network towers and the registration of 86,000 new refugee clients.<sup>110</sup>

Knowing the location of financial service touchpoints is pivotal for an efficient and effective humanitarian response. Geospatial mapping can identify access gaps for rural populations and refugees, and is increasingly important with the shift to digital disbursement of emergency benefits. Following the major Nepal earthquake in 2015, UNCDF helped authorities to identify payment points for the delivery of cash, humanitarian aid and supplies.<sup>111</sup>

## RESILIENCE AND SELF-RELIANCE

Digital financial services can be a stepping stone to financial inclusion and contribute to greater resilience for forcibly displaced people.<sup>112</sup> This helps FDPs to access aid and provides them with the tools that they need to better manage future risks and shocks – a bridge between humanitarian and development assistance.

UNCDF works with banks, mobile network operators, regulators and users of digital financial services to improve infrastructure in order to reach refugees. Our objective is to demonstrate that these services can be provided safely, at a reasonable cost, sustainably at scale, in a well-regulated environment. We assist MNOs and banks to understand the refugee business case in order to invest in building towers, establish agent networks, and manage agent liquidity. These efforts help to support sustainability by helping to build viable digital ecosystems, thereby avoiding the closure of recipient accounts after donor funding has ended.

<sup>106</sup> Gabrielle Smith et al., "New technologies in cash transfer programming and humanitarian assistance" (The Cash Learning Partnership, Concern Worldwide, Oxford Policy Management, PRIAD, 2011).

<sup>107</sup> See <https://innovation.wfp.org/project/building-blocks>.

<sup>108</sup> See [www.uncdf.org/article/3883/unhcr-cash-based-interventions-in-meheba-refugee-settlement-in-zambia-the-journey-to-digitization](http://www.uncdf.org/article/3883/unhcr-cash-based-interventions-in-meheba-refugee-settlement-in-zambia-the-journey-to-digitization).

<sup>109</sup> See [www.uncdf.org/article/4223/senegal-launches-a-digitalization-project-in-the-humanitarian-sector](http://www.uncdf.org/article/4223/senegal-launches-a-digitalization-project-in-the-humanitarian-sector).

<sup>110</sup> See [www.uncdf.org/article/3725/digitizing-cash-based-interventions-through-a-mobile-wallet](http://www.uncdf.org/article/3725/digitizing-cash-based-interventions-through-a-mobile-wallet).

<sup>111</sup> See [www.uncdf.org/article/2483/building-a-backbone-for-the-financial-sector-in-nepal](http://www.uncdf.org/article/2483/building-a-backbone-for-the-financial-sector-in-nepal).

<sup>112</sup> Shelly Culbertson et al., "Crossing the digital divide: applying technology to the global refugee crisis" (RAND Corporation, 2019).

Recognizing that digital literacy is a necessary component of the uptake and usage of digital products and solutions, we believe that behavioural change must be the objective of digital education programmes that allow beneficiaries to learn, practise and adopt new skills. Digital literacy uses existing technological tools such as tablets, phones and computers to teach and engage through guided usage toward concrete client objectives. In [Rwanda and the United Republic of Tanzania](#), UNCDF trained more than 7,300 refugees using tablet-based applications, SMS and videos, introducing immediately applicable information and skills through alternative delivery mechanisms that go beyond traditional methods. In Uganda,<sup>113</sup> UNCDF and WFP partnered to develop a financial literacy curriculum for refugees and roll out a Digital Community Entrepreneur (DCE) model to boost access to and use of phones, solar kits and mobile money products;<sup>114</sup> some 1,620 refugees were trained and there are currently 106 active DCEs in Ugandan refugee camps. Examples such as these demonstrate the importance of supporting digital skill development to use a range of services, aside from financial services.

Through their mobile phones, refugees have access to economic and livelihood opportunities. They can receive remittances from abroad, transfer cash to family and friends, contact and pay suppliers, receive payments, access financial services, and reach new clients.<sup>115</sup> There are emerging examples globally of FDPs, especially women with existing skills and small-scale enterprises, accessing on-demand work opportunities through digital platforms. For example, the International Rescue Committee and the Overseas Development Institute find “that the gig economy in Jordan offers some promise to provide work to Syrian women refugees, especially by providing wider markets to women who are already economically active on a small scale.”<sup>116</sup> Recent efforts have leveraged the digital sector to extend refugee services to other sectors. Increased access to digital mobile technology can translate into increased access to education and training.<sup>117</sup> Displacement has taken a substantial toll on refugee education, with 3.7 million children out of school.<sup>118</sup> Digital technology can help to address this gap by delivering and providing educational content, training teachers and facilitating access to information on educational opportunities.

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<sup>113</sup> See [www.uncdf.org/article/5690/financial-literacy-training-toolkit-for-refugees](http://www.uncdf.org/article/5690/financial-literacy-training-toolkit-for-refugees).

<sup>114</sup> See [www.uncdf.org/article/5797/reaching-the-last-mile-the-foundation-for-growth-of-ugandas-digital-economy](http://www.uncdf.org/article/5797/reaching-the-last-mile-the-foundation-for-growth-of-ugandas-digital-economy).

<sup>115</sup> See [www.gsma.com/mobilefordevelopment/resources/the-digital-lives-of-refugees](http://www.gsma.com/mobilefordevelopment/resources/the-digital-lives-of-refugees).

<sup>116</sup> Overseas Development Institute, “Syrian women refugees in Jordan: opportunity in the gig economy?” (2017). [www.odi.org/sites/odi.org.uk/files/resource-documents/11742.pdf](http://www.odi.org/sites/odi.org.uk/files/resource-documents/11742.pdf).

<sup>117</sup> World Bank, “ICT and education for refugees: a stocktaking of innovation approaches in MENA, lessons of experience and guiding principles” (Washington, DC, 2016). <https://openknowledge.worldbank.org/handle/10986/25172>.

<sup>118</sup> See [www.unhcr.org/education.html](http://www.unhcr.org/education.html).

Energy is another sector showing promise. For example, pay-as-you-go services for electricity in off-grid areas are being tested in camps such as the Kakuma Refugee Camp in Kenya, where more than 1,000 solar home systems are in use.<sup>119</sup>

## EXPANDED SOLUTIONS AND VOLUNTARY REPATRIATION

As refugees become ready to move from encampments to permanent living situations, host country policy will determine their ability to access employment opportunities, land and the national educational system. In the absence of such opportunities, the international community must liberalize its own policies towards third-country solutions and agree to resettle refugees in member states.

Resettled refugees should have the same access to digital services as those available to the host country’s citizens. Efforts should be made by member states to support peacebuilding, improving conditions in the countries of origin, so as to allow refugees to voluntarily repatriate. Access to the Internet and messaging applications would allow candidates for repatriation to monitor local news and communicate with people back home, while regionally interoperable mobile money wallets would allow refugees to access and use their funds.

## CREATING SELF-RELIANT REFUGEES

Increasing the self-reliance of refugees and their integration into local communities is currently constrained by several barriers, including the absence of critical infrastructure such as digital connectivity and the lack of nationally accepted identification. Through its efforts, UNCDF seeks to overcome these and other obstacles that prevent refugees from using digital technologies. This work, in turn, paves the way for refugees to access digital services that build stronger inclusive digital economies. Enhanced self-reliance provides refugees with agency over their economic lives and a path to prosperity for their families and communities. Applying digital solutions to programmatic interventions can create new opportunities for displaced populations to help achieve SDG1 (End poverty in all its forms, everywhere) and SDG10 (Reduce inequality within and among countries).

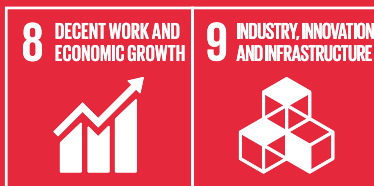
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<sup>119</sup> See [www.unhcr.org/education.html](http://www.unhcr.org/education.html).

## SECTION 3.5

# MSMES NEED BETTER SERVICES, NOT JUST FOR FINANCE, BUT TO SUPPORT THEIR RESILIENCE AND GROWTH

By Rajeev Kumar



## HIGHLIGHTS

- MSMEs generate most of the new jobs that are created in least developed countries (LDCs), and they can be a powerful force for integrating women into the economic mainstream.
- To fast-track the SDGs in least developed countries, UNCDF's Inclusive Digital Economy programme is working with private and public sector partners on MSME-focused initiatives for inclusive innovation, open payment ecosystems, customer empowerment, and enabling regulation. Achieving SDG8 and SDG9 depends on growing MSMEs, which need to benefit from digital transformation, alternative financing solutions and formalization.

Micro, small and medium enterprises (MSMEs) are delivering many vital services at the last mile, which the poor depend on for their personal and productive needs – in the sectors of agriculture, health, energy, commerce and trade, and education. Growing MSMEs are important due to their improved productivity, earnings – and potential tax revenue – services and employment. They generate most of the new jobs that are created in least developed countries (LDCs), and they can be a powerful force for integrating women into the economic mainstream. Empowering MSMEs and enhancing their capacity is a key objective of Sustainable Development Goal (SDG) 8 (decent work and economic growth) and SDG9 (industry, innovation and infrastructure).

The MSME segment is comprised of a diverse group of enterprises, which varies by size, maturity and growth aspirations, among other characteristics. There are 162 million formal micro, small and medium enterprises in developing countries, of which 87 percent are micro-enterprises. Many more enterprises operate informally but are starting to digitalize,<sup>120</sup> as they use common messaging and content platforms to market and learn.

<sup>120</sup> See [www.financedigitalafrica.org/wp-content/uploads/2019/04/FiDA-Micro-entrepreneurs-in-a-platform-era.pdf](http://www.financedigitalafrica.org/wp-content/uploads/2019/04/FiDA-Micro-entrepreneurs-in-a-platform-era.pdf).



Given the prevalence of micro-enterprises, their growth to small enterprise status is critical. Take the example of Elase Mwale, a Zambian entrepreneur who started her mobile money booth in Lusaka in 2015. Elase started a booth with six months of personal savings and quickly expanded to three booths. Her inventory was essentially cash, which she frequently ran out of when people cashed-out from their mobile money wallet. A local microfinance institution, FINCA Zambia, provided her with an 'Agent Cash' loan, and within three months she was able to serve more customers and open four additional booths. She reached out to her church network to recruit four members of staff, whom she could trust, to operate these booths.<sup>121</sup> Elase's business grew from a micro- to a small enterprise, requiring skills to plan for business expansion, manage a larger workforce, set in place systems and processes, and secure financing, as well to partner in order to serve mobile money customers as an agent.

The fallout from COVID-19 has been especially difficult for MSMEs. It has led to declines in income and employment and increased inequality and poverty. A recent survey by UNCDF and the International Chamber of Commerce in 47 LDCs<sup>122</sup> finds that 69 percent of MSMEs experienced substantial disruptions and are operating at less than half their normal business capacity. Micro-enterprises are disproportionately affected, with only 22 percent of them operating at above 50 percent business capacity, compared with 41 percent for the larger SMEs. They face significant difficulty in accessing customers (83 percent) and suppliers (44 percent). The economic impact of COVID-19 is, first and foremost, a crisis of market shutdown and supply chain disruption. As the pandemic is prolonged, with market demand and finance contracting further, the economic emergency is transforming into a business liquidity crisis, in which companies struggle to stay afloat. Informal enterprises are 25 percent more likely to say that the pandemic is pushing them towards bankruptcy. Also, women-led businesses are experiencing higher rates of layoffs, compared with men-led businesses.

While MSMEs are a diverse group, they often experience a common set of challenges to fulfil basic business functions. The degree to which these challenges affect growth varies over the life cycle of an enterprise. Illustrative examples (see Figure 13)<sup>123</sup> in certain sectors, such as retail in East Africa, demonstrate how barriers evolve as MSMEs seek to grow from a micro- to a small enterprise. Three key barriers include a lack of:

- **linkages into markets and supply chains** – Many enterprises are reliant on costly intermediaries and are limited in their ability to reach markets beyond their local community. Without networks and logistics, it can be prohibitively costly to access markets and supply chains to grow.
- **managerial skills and systems** – Early on, micro-entrepreneurs need skills to market, operate and manage the business with some level of customer service. If and as they seek to grow, they must have the ability to plan for growth, manage a larger workforce and more complex operations, use systems and policies, and navigate a dynamic market.
- **relevant financial services** – Lack of available collateral and bookkeeping reduces the visibility of business performance to financial service providers. Consequently, many enterprises rely on family and informal sources of finance to start with limited inventory. As they grow, their financial needs evolve, from cash flow smoothing to expansion capital. Furthermore, savings groups, savings and insurance play an important role in protecting against shocks. For women-owned and led MSMEs alone, there is an estimated US\$1.7 trillion financing gap.<sup>124</sup>

Lack of formal registration is also a barrier to growth for many enterprises, affecting both the cost of doing business and excluding them from formal sources of finance. Unlike Elase in the above example, a relatively high share of MSMEs fail to overcome these barriers and either stagnate or collapse. This is why better services for this segment are critical.

## DIGITAL PLATFORMS TO SUPPORT THE GROWTH OF MSMEs

A wave of new digital platforms offers services to MSMEs to link them to markets and suppliers, provide relevant financial services, and enhance their skills and systems.<sup>125</sup> Notable examples are helping millions of MSMEs in some countries, such as Taobao in China and GoJek in Indonesia;<sup>126</sup> in the process, they are demonstrating the effectiveness of addressing both the non-financial and financial needs of MSMEs digitally. The digital nature of these platforms provides them with the

<sup>121</sup> See [www.uncdf.org/article/5317/five-years-of-market-development-in-benin-senegal-and-zambia-2015-2019](https://www.uncdf.org/article/5317/five-years-of-market-development-in-benin-senegal-and-zambia-2015-2019).

<sup>122</sup> See <https://spark.adobe.com/page/ff78mnd18a46A/>.

<sup>123</sup> Michelle Hassan, "Getting the timing right: the life cycle of a small shop in Africa" (BFA Global, 2018). <https://medium.com/f4life/getting-the-timing-right-the-life-cycle-of-a-small-shop-in-africa-6c10e6e9fab6>.

<sup>124</sup> See <https://financialallianceforwomen.org/download/msme-finance-gap>.

<sup>125</sup> See [www.financedigitalafrica.org/2019/07/15/msmes-are-the-backbone-of-developing-economies-new-research-shows-how-digital-platforms-can-boost-their-impact](https://www.financedigitalafrica.org/2019/07/15/msmes-are-the-backbone-of-developing-economies-new-research-shows-how-digital-platforms-can-boost-their-impact).

<sup>126</sup> See <https://medium.com/caribou-digital-live-learning/indonesias-tech-giants-and-unicorns-catapult-msmes-into-the-digital-economy-914aec661d1f>.



opportunity to add on select services incrementally and at a low marginal cost, to support the needs of MSMEs more holistically. MSMEs in LDCs are underserved by these platforms, in terms of coverage and depth of services.

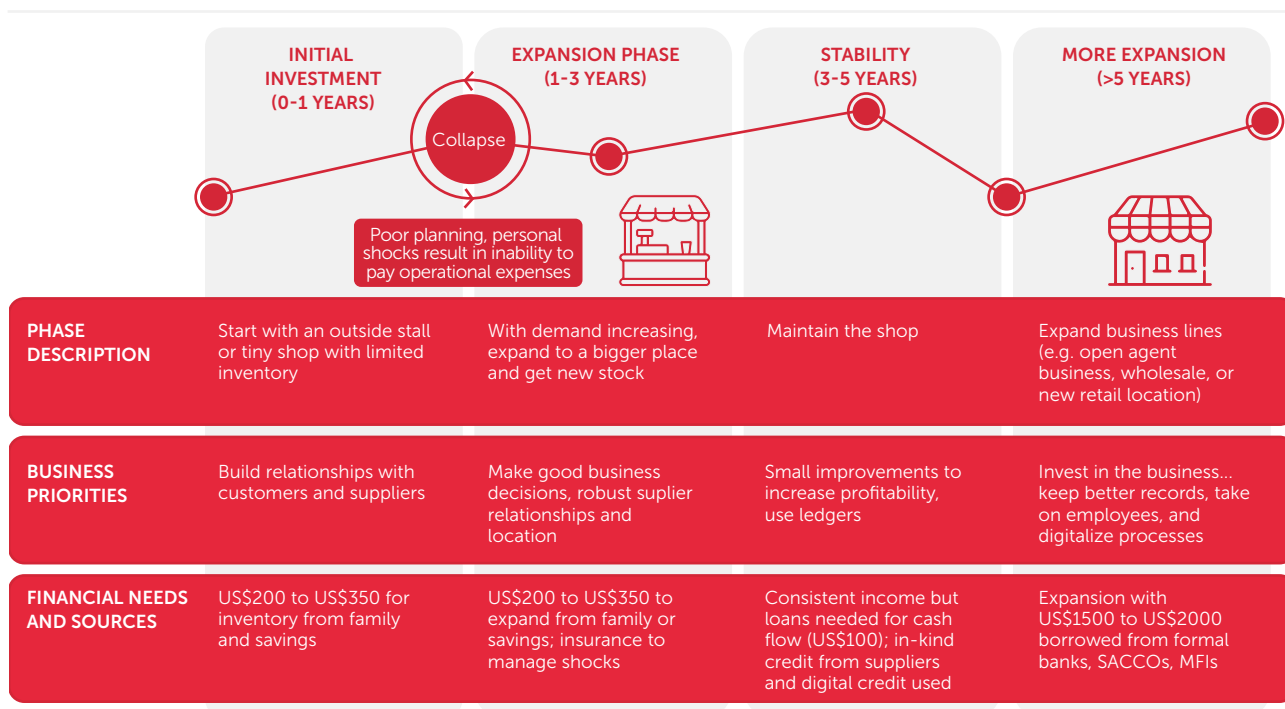
## LINKAGES TO MARKETS AND SUPPLY CHAINS

In order to grow, many MSMEs are now looking beyond traditional footfall and in-person transactions. They are increasingly using new channels, such as popular messaging applications like WhatsApp, for marketing. During lockdowns in the COVID-19 pandemic,<sup>127</sup> these channels have contributed to their resilience. Some informal MSMEs looking to grow further are joining digital marketplaces to sell their goods and services.<sup>128</sup> Jumia, for example, is a popular digital marketplace in Africa, through which many formal MSMEs are selling to clients domestically and internationally.

Micro-entrepreneurs that provide motorcycle taxi services, which are found in most LDCs, can now access many more customers through mobile apps, as well as provide logistic services to businesses.<sup>129</sup> In Uganda, UNCDF supported the ride-hailing company SafeBoda to connect market vendors to customers through a digital marketplace that leverages the drivers' (*boda boda*) logistics.<sup>130</sup> This programme coincided with the start of the COVID-19 lockdown. Six months after the project launch, 520 market vendors are actively selling on the platform. More than 57,000 clients use the platform, providing them with an important lifeline to food and basic goods. Business-to-business (B2B) digital platforms that cater to MSMEs are also growing in Kenya and Nigeria, to provide micro-retailers and agri-input providers with more affordable and reliable goods for resale. B2B digital platforms enable MSMEs to source more effectively and focus on selling.

**FIGURE 13.**

The life cycle of a micro-enterprise shop in the African retail sector



Source: Adapted from BFA's "The life cycle of a small shop (a duka) in Africa", 2018.

<sup>127</sup> See [www.cgap.org/blog/ride-hailing-drivers-indonesia-discuss-livelihoods-covid-19](https://www.cgap.org/blog/ride-hailing-drivers-indonesia-discuss-livelihoods-covid-19).

<sup>128</sup> See [www.cgap.org/blog/could-e-commerce-bring-womens-financial-inclusion-bangladesh](https://www.cgap.org/blog/could-e-commerce-bring-womens-financial-inclusion-bangladesh).

<sup>129</sup> See [https://static1.squarespace.com/static/5ab2a4d655b02c29746fc58c/t/5d84f29c0a997e4f96ae2dae/1568993955203/20092019\\_Digitising\\_Logistics\\_in\\_Africa\\_Report.pdf](https://static1.squarespace.com/static/5ab2a4d655b02c29746fc58c/t/5d84f29c0a997e4f96ae2dae/1568993955203/20092019_Digitising_Logistics_in_Africa_Report.pdf).

<sup>130</sup> See [www.uncdf.org/article/5664/uncdf-and-safeboda-partnership-looks-to-support-last-mile-finance-beyond-COVID-19](https://www.uncdf.org/article/5664/uncdf-and-safeboda-partnership-looks-to-support-last-mile-finance-beyond-COVID-19).

## MANAGERIAL SKILLS AND SYSTEMS

As business transactions and marketing functions digitize, platforms are introducing services that support important managerial activities, such as basic bookkeeping, inventory management and restocking. For example, SureCash, a UNCDF partner in Bangladesh, launched TallyKhata, which is an easy-to-use mobile app with offline capabilities that has been used by more than 100,000 micro and small enterprises during the pandemic. It records sales transactions, helps in credit recovery for the in-kind credit that they extend, and provides profit and cash reports. TallyKhata integrates enterprises' digital payments to and from customers, suppliers and banks.

Advances in this area also include skills development for the MSME owners and workers who use digital platforms. Shop-Up and EkShop are digital platforms in Bangladesh that UNCDF supports to embed digital and financial literacy training into services for MSMEs. Digital platforms like these are motivated to find efficient ways to improve the ability of MSMEs to sell their goods and services on their platform.<sup>131</sup> Whether it is Lynk's training for artisans in Kenya or Jumia's training of merchants in Nigeria, examples are emerging where face-to-face and digital training is complementing the business models of platforms.

## RELEVANT FINANCIAL SERVICES

Digitalization of MSMEs allows for new opportunities to efficiently extend more tailored financial services to them. At one end of the opportunity spectrum, MSME-focused banks and finance companies are digitizing their products and channels to serve these clients. In the examples of Elase and FINCA Zambia, UNCDF supported the development of 'Agency Cash' products to serve MSMEs. At the other end of the spectrum, new fintech companies are introducing solutions to leverage data from MSMEs to provide, for example, peer-to-peer lending products. In the middle, financial service providers are partnering with digital platforms to finance MSMEs on their platforms.

To take an example, TallyKhata in Bangladesh offers credit in partnership with banks to MSMEs through its platform. In Indonesia, UNCDF supported GandengTangan to develop a mobile app for MSMEs to restock inventory and access loans for this purpose.

GandengTangan uses tokens to limit the use of loan funds to inventory from distributors on its platform, providing a level of risk management. More than 3,500 MSMEs have received financing from GandengTangan.

The adoption of digital payments dispels the myth that MSMEs only need credit. MSME growth can be constrained if the type of services on offer does not meet their needs. Their requirements for financing inventory are very different from those for financing trade, which might require invoice discounting and insurance. Savings and debit cards are especially important to the most micro of enterprises that are most reliant on digital platforms,<sup>132</sup> known as gig workers.

## DIGITALIZATION AS A PATHWAY TO FORMALIZATION

A consequence of digitalization is that many enterprises in the informal economy are better equipped to fulfil the business functions, such as recording sales, that must be in place to operate formally. With digitalization, MSMEs can progressively meet formalization requirements. The adoption of mobile money has been found to reduce the size of the informal sector by up to 4 percent of gross domestic product.<sup>133</sup> Whether MSMEs meet these requirements is a more complex question. While there are several deterrents to formalization, including increased taxation, digital platforms can also play a role in enhancing the value to MSMEs of formalizing. For example, during COVID-19 many MSMEs were not able to access social assistance programmes due to lack of registration. It is for this reason that UNCDF has been working with the Government of Bangladesh to register MSMEs through digital platforms.

Given the critical and urgent need for better services to support MSME growth, we must accelerate digitalization to address their needs more holistically. To fast-track the SDGs in least developed countries, UNCDF's Inclusive Digital Economy programme is working with private and public sector partners on MSME-focused initiatives for inclusive innovation, open payment ecosystems, customer empowerment, and enabling regulation. Achieving SDG8 (decent work and economic growth) and SDG9 (industry, innovation and infrastructure) depend on growing MSMEs, which need to benefit from digital transformation, alternative financing solutions and formalization.

<sup>131</sup> See [www.cariboudigital.net/transformationalupskillingpltureport](http://www.cariboudigital.net/transformationalupskillingpltureport).

<sup>132</sup> See [www.uncdf.org/article/6398/the-gig-economy-and-financial-health-a-snapshot-of-malaysia-and-china](http://www.uncdf.org/article/6398/the-gig-economy-and-financial-health-a-snapshot-of-malaysia-and-china).

<sup>133</sup> See [www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/06/Mobile-Money-Driving-formalisation-and-building-the-resilience-of-MSMEs.pdf](http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/06/Mobile-Money-Driving-formalisation-and-building-the-resilience-of-MSMEs.pdf).

## HOW TO BUILD BACK BETTER IN AN INCREASINGLY DIGITAL ECONOMY

By Torbjorn Fredriksson Chief, ICT Policy Section,  
Division on Technology and Logistics, UNCTAD

*The spread of COVID-19 continues to disrupt economic and social life around the world. The crisis has highlighted how people who can participate in the digital economy continue to work, trade and access basic services. It has also accentuated how digitally excluded people can be left behind. Inclusive digital commerce must be kept high on the policy agenda, and government responses will need to balance the huge opportunities and the various risks and costs involved.*

Over the past two decades, the world has become increasingly digital. Digital technologies allow people to better connect and trade online, and businesses to access larger markets and global value chains while overcoming costly intermediaries. E-commerce can improve the productivity of micro, small and medium-sized enterprises (MSMEs) and support agricultural and industrial development. In more recent years, it has helped to diversify and transform countries' economies and improve their export competitiveness. According to UNCTAD's latest estimates, global e-commerce sales in 2018 amounted to US\$25.6 trillion, up by 8 percent from the previous year.

The COVID-19 pandemic has accelerated the digital shift. A recent UNCTAD and Netcomm Suisse survey<sup>134</sup> found that more consumers have turned to online shopping, especially for essential products. More than half of all respondents expect to continue to do more online also after the crisis.

A separate UNCTAD survey of digital businesses and platforms covering 23 countries<sup>135</sup> finds that most third-party online marketplaces have experienced an increase in sales and businesses registering on their platform. Social media and direct online sales have become increasingly important channels for e-commerce businesses.

Digital entrepreneurs and e-commerce platforms in developing countries, especially LDCs, are confronted with a myriad of potential obstacles during the COVID-19 crisis. Disruptions in supply chains and logistics, internet and transportation costs are key concerns (experienced by more than half of businesses surveyed). In addition, digital businesses are trying to cope with pre-existing e-commerce challenges, such as limited connectivity, constrained financing for liquidity shortages, and reliance on cash-based payments.

The pandemic has added urgency to the need to bridge the wide digital divides plaguing the world. Digital infrastructure is often insufficient, leading to limited or unaffordable connectivity to undertake effective e-commerce and other online activities. The most vulnerable populations are usually left out. As a result, countries strongly differ in their levels of e-commerce uptake, affecting opportunities to benefit from increasing demand for e-commerce.

Moreover, while many developing countries struggle to harness various digital opportunities, the digital shift under the pandemic has further boosted the performance of the leading digital platforms, based mainly in the United States and China.<sup>136</sup> These companies are benefiting from increased demand and have seen their market valuations grow significantly even during the pandemic. Increased market dominance of a handful of global digital players is intensifying concerns about the distribution of the value created and about consumer protection and fair competition. Some domestic and regional e-commerce players have emerged in parts of the world where the global leaders have hitherto been less active. However, many face challenges when trying to scale, and those that manage to grow (e.g. Souq, Lazada and Flipkart) often become takeover targets.<sup>137</sup>

<sup>134</sup> The survey covered 9 emerging and developed economies: Brazil, China, Germany, Italy, Republic of Korea, Russian Federation, South Africa, Switzerland and Turkey. The data for Brazil were collected by the Brazilian Network Information Center (NIC.br)

<sup>135</sup> The survey covered 23 countries, mainly LDCs in Africa and Asia-Pacific: 1) Africa: Benin, Burkina Faso, Cote d'Ivoire (non-LDC), Madagascar, Mali, Niger, Rwanda, Senegal, Tanzania, Togo, Tunisia (non-LDC), Uganda, Zambia; 2) Asia: Bangladesh, Bhutan, Cambodia, Lao PDR, Myanmar, Nepal; 3) Pacific: Kiribati, Samoa (non-LDC), Tuvalu, Vanuatu.

<sup>136</sup> For more information, see [UNCTAD's Digital Economy Report 2019](#).

<sup>137</sup> Ibid.

The recovery from the pandemic will take place against the background of an accelerated digitalization of social and economic activities. However, technology is not deterministic. It is up to governments, in close dialogue with other stakeholders, to shape the rules for e-commerce and the digital economy so that they support greater resilience and inclusive gains. LDCs especially trail behind in the digital economy and rapidly need to overcome a range of barriers and bottlenecks. By January 2021, UNCTAD had carried out 27 *eTrade Readiness Assessments*, providing concrete policy recommendations for enabling more inclusive e-commerce. A review of the implementation of these recommendations indicates that policies and coordination processes can be further improved (Figure 14). In general, gaps remain in the digital infrastructure, skills, financing for innovation, and policy required for inclusive digital commerce to flourish at a domestic level.

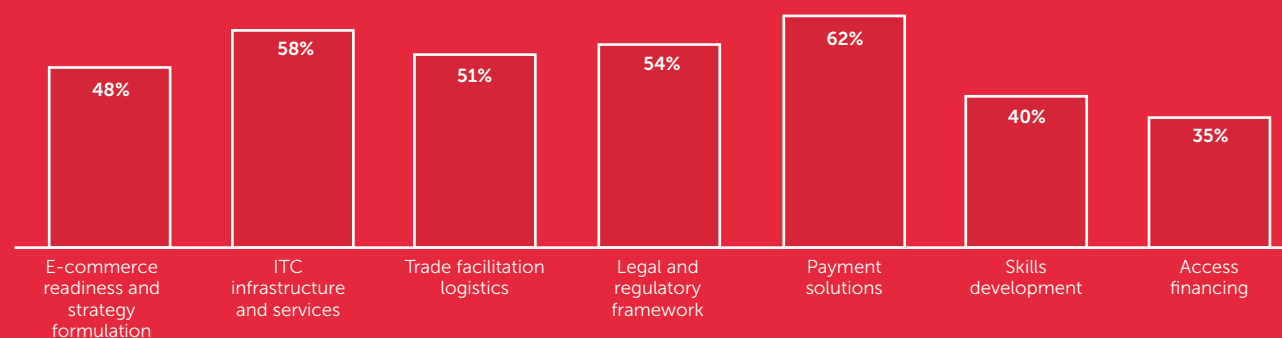
While domestic strategies and policies play a key role in digital transformations, several policy challenges require regional or global action. This applies, for example, to data protection and security, cross-border data flows, competition, taxation and trade. Defining the right responses therefore calls for enhanced international collaboration and policy dialogue, with the full

involvement of developing countries. Any consensus will need to incorporate significant flexibilities to enable all countries to participate.

With only one decade remaining for us to meet the SDGs, we must do more and better by working together. Created by UNCTAD in 2016, the *eTrade for all* initiative seeks to do this by bringing together the donor community, development agencies (including UNCDF), international and non-governmental organizations and the private sector to share digital solutions, support e-commerce and bring more coherence in policy making around digital trade. The latter objective is also nurtured by the *High Level Panel on Digital Cooperation Roadmap* and the *UNGIS Dialogue on the Role of Digitalization for Development in the Decade of Action*, two key dialogue spaces to enhance the policy effectiveness across the multiple stakeholders working to regulate digitalization in a fair and inclusive way. The urgency of responding to COVID-19 presents a unique opportunity to unite and speed up the development of an inclusive global digital society.

FIGURE 14.

Implementation rate by policy area across all countries (*Percentage of recommendations completed*)



Source: For more information, see UNCTAD's *"Fast-tracking Implementation of eTrade Readiness Assessments"*



## SECTION 3.6

# MORE PRODUCTIVE AND RESILIENT AGRICULTURE TO ENHANCE FOOD SECURITY THROUGH DIGITAL SOLUTIONS

By Abhay Pareek



## HIGHLIGHTS

- It is possible to unlock the massive potential of the agriculture sector with digital solutions. This can raise income and productivity in a sector that is the world's largest employer, provide jobs for a large youth population and meet the growing food needs of an ever-expanding world population in an environmentally sustainable way.
- UNCDF focuses on the power of digital solutions to address critical market constraints in agriculture. Agricultural value chains are ripe for innovation; digital technology can help to improve production and efficiency across the many stakeholders involved. Having the digital infrastructure in place – linking 'low-tech' enterprises to 'high-tech' solutions – paves the way for the connecting participants and the development of agricultural commerce.

Agriculture is a critical source of livelihood for a large part of the world's population, especially for smallholder farmers and agribusinesses in low-income and lower-middle income countries. It therefore plays an essential role in eradicating poverty and achieving global food security. The use of digital financial services, as well as other digital solutions, can enable agricultural value chain actors to improve the productivity, quality and marketability of their outputs.<sup>138</sup> Leveraging digital

agricultural solutions (agritech) can create commercial efficiencies by facilitating access to finance, productive assets, information and markets for farmers.

Take the case of Godson, a smallholder farmer, who cultivates coffee in the foothills of Mount Elgon in Uganda. At harvest, he is typically eager to secure an agreement with the local middleman because his cash flow has always been tight. Several harvests ago, Godson enrolled in a project sponsored by Kyagalanyi Coffee Limited (KCL), a major coffee buyer. Through the programme, KCL purchases his crop directly, making payment to Godson through a digital wallet set up as

<sup>138</sup> See UNSGSA, Her Majesty Queen Máxima of the Netherlands, the Better Than Cash Alliance & the World Bank, "Igniting SDG progress through digital financial inclusion", for highlights of the robust evidence linked to 13 of the 17 SDGs.



part of the programme. He now receives a better price for his crop and proceeds from the sale in a timelier manner. The predictability of harvest payments has opened up new possibilities for Godson. Recently, a KCL agent approached him to offer extension services that can help to improve the quality of the coffee crop and yield. The agent also discussed financing to help replace some of Godson's older, diseased coffee trees. Godson now imagines new possibilities for his family.

The importance of agriculture cannot be understated. Some 815 million people worldwide are undernourished.<sup>139</sup> The agriculture sector employs more than 1 billion people around the world, with women more engaged than men.<sup>140</sup> Smallholder farmers, who own less than 2 hectares of land, operate 82 percent<sup>141</sup> of all farms globally. However, they only operate 12 percent of total farmland. Despite their limited access to land, they represent an important source of agricultural produce that is necessary to meet a growing world population; smallholders produce more than 70 percent of the world's food supply.<sup>142</sup>

In the last century, large-scale developments have improved production and impacted the lives of many farmers. However, many farmers in low-income and lower-middle income countries still struggle with basic issues of low productivity and inefficient supply chains. Emerging challenges such as climate change further burden smallholder farmers, especially those not prepared to adapt their farming practices. Finally, the policy environment – especially in low-income countries – is not conducive to supporting the innovation and development of infrastructure necessary to address the emerging challenges faced by smallholder farmers.

## CONSTRAINTS TO THE DEVELOPMENT OF SMALLHOLDER AGRICULTURE

A number of constraints inhibit smallholder progress in agriculture. They impede the ability of smallholder farmers to realize their full potential, limiting the opportunities to increase their productivity, output and income.

These constraints include:

- **Land** – Smallholders cultivate small plots. Land titling is time-consuming and rights are tenuous.
- **Inputs** – Limited adoption of improved agricultural technology, such as new seed varieties and fertilizers, compounded by the inability of input dealers to serve the segment profitably.
- **Production** – Farmers may lack access to necessary information, compounded by poor coverage by extension services. On-farm activity is labour intensive, with a heavy reliance on natural elements, increasing the risks to smallholders.
- **Storage and distribution** – Effective storage is not always available to smallholders. There is crop wastage in supply chains and in distribution.
- **Marketing** – Small, fragmented producers lack negotiating power, have little knowledge of prices, and linkages to markets are weak.
- **Processing** – Limited investment in processing and poor handling practices lead to the sale of raw output, with little value added.

## DIGITAL SOLUTIONS SUPPORT HIGHER AND MORE STABLE INCOMES FOR FARMERS

Digital technologies, combined with viable commercial models adapted to the needs of smallholder farmers and the micro- and small enterprises that serve them, can positively impact the agricultural value chain. Opportunities stem from increased mobile and digital connectivity among agribusinesses and farmers, better sources of information – enabled by advances in data collection (such as farmer profiles, payments data, sensors and satellites) and analysis (such as machine learning/artificial intelligence) and the combination of new digital services for finance, agronomic advice and market access.

<sup>139</sup> FAO, IFAD, UNICEF, WFP and WHO. 2017. *The State of Food Security and Nutrition in the World 2017: Building Resilience for Peace and Food Security* (Rome, FAO, 2017).

<sup>140</sup> FAO, *The State of Food and Agriculture: Women in Agriculture* (Rome, 2011).

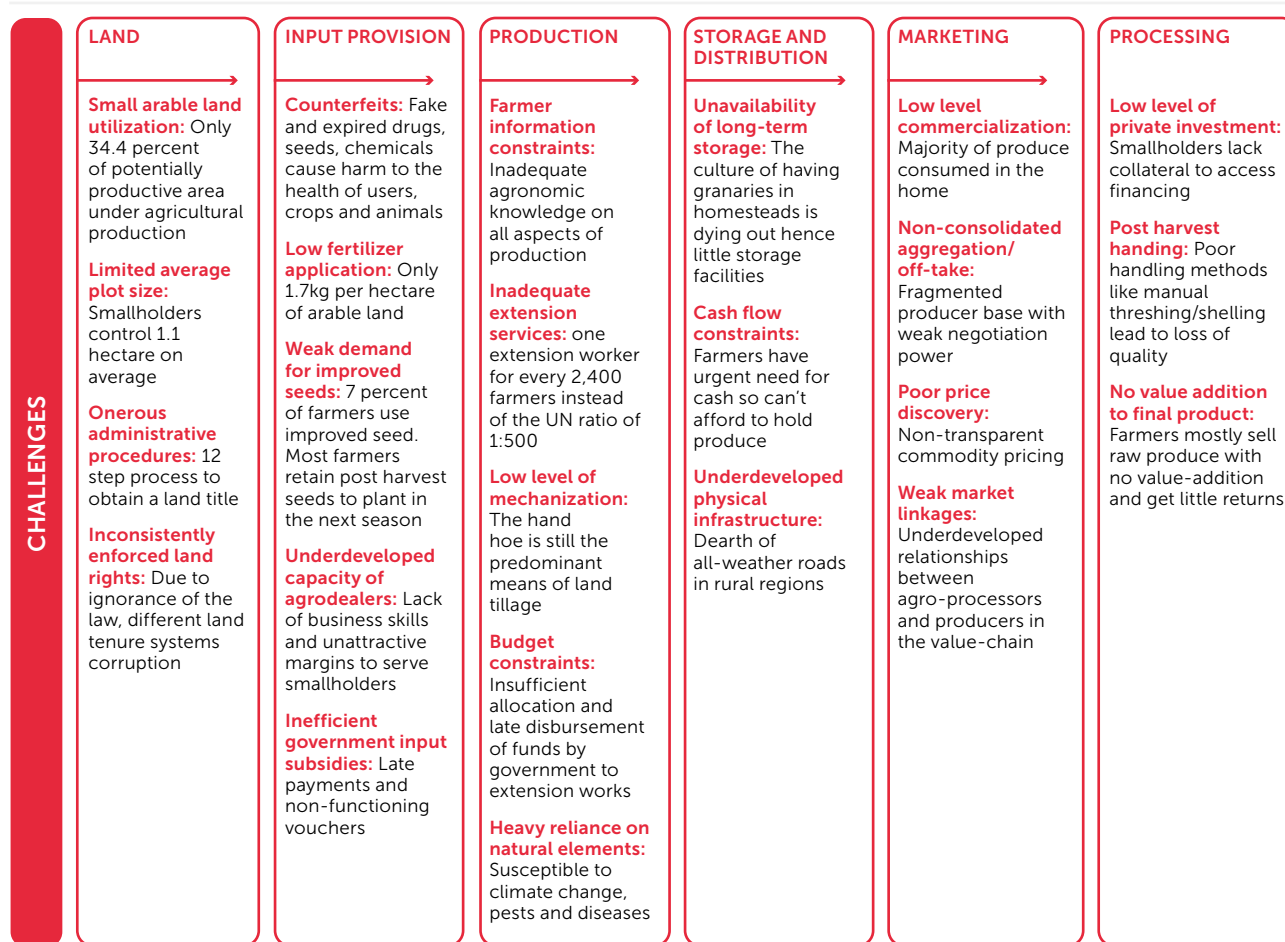
<sup>141</sup> FAO, *The State of Food and Agriculture: Innovation in Family Farming* (Rome, 2014).

<sup>142</sup> FAO, *Coping with the Food and Agriculture Challenge: Smallholders' Agenda* (Rome, 2013).



FIGURE 15.

Challenges faced by key actors along the agricultural value chain



Source: World Bank (2014), USAID Feed the Future Agricultural Inputs Activity (2017), UNADA (2014)

New digital solutions are emerging that increase productivity and reduce risks for farmers. Innovations equip smallholder farmers to overcome challenges related to input provision, production and marketing. For example, farmers in East Africa who accessed agricultural microinsurance through mobile devices earned 16 percent more than their uninsured peers through reduced losses.<sup>143</sup> In other examples, the digitization of agricultural value chains is enhancing the efficiency of payments, removing middlemen and creating more price transparency. It can build tighter connections between farmers and crop buyers, allowing farmers to gain financing and extension support, which can increase farm yield and quality – benefiting both buyers and farmers. New digital platforms, such as M-Louma in Senegal<sup>144</sup> or Napanta in India, enable new solutions (such as inputs, extension services, equipment rental and access to information on government programmes), which provide substantial benefits to

farmers. These platforms provide many farmers with access to services not previously available to them.

Combining irrigation with agricultural training, facilitation and better market access can also increase crop yields and foster the cultivation of high-value crops, raising farmers' incomes as a result. For example, UNCDF partnered with SunFarmer, an innovative agritech solution provider in Nepal.<sup>145</sup>

This partnership supports smallholder farmers with digital solutions for agricultural inputs, logistics and sales. In particular, a pay-as-you-go irrigation solution, enabled by mobile money payment, provides affordable access to a solar water pump. This pump gives farmers year-round access to irrigation, providing them with the opportunity to diversify into more lucrative crops, such as vegetables.

<sup>143</sup> CGIAR, "Scaling up index insurance for smallholder farmers: recent evidence and insights" (Copenhagen, 2015).

<sup>144</sup> See [www.uncdf.org/article/3500/digital-solutions-new-opportunities-for-agricultural-value-chains-in-senegal](http://www.uncdf.org/article/3500/digital-solutions-new-opportunities-for-agricultural-value-chains-in-senegal).

<sup>145</sup> See [www.uncdf.org/article/3493/uncdf-mm4p-sunfarmer-and-prabhu-partner-to-transform-agriculture-in-nepal-with-digital-technology](http://www.uncdf.org/article/3493/uncdf-mm4p-sunfarmer-and-prabhu-partner-to-transform-agriculture-in-nepal-with-digital-technology).

# DIGITAL SOLUTIONS TRANSFORM AGRICULTURAL VALUE CHAINS

UNCDF focuses on the power of digital solutions to address critical market constraints in agriculture. Agricultural value chains are ripe for innovation; digital technology can help to improve production and efficiency across the many stakeholders involved. Having the digital infrastructure in place – linking ‘low-tech’ enterprises to ‘high-tech’ solutions – paves the way for the connecting participants and the development of agricultural commerce.

In Uganda, UNCDF partnered with KCL to digitize the coffee supply chain as mentioned earlier in the story of Godson. The project with KCL included other partners: local mobile network operator MTN Uganda for mobile access and mobile money accounts, and Yo Uganda, a payment aggregator for developing the bulk payment application and an on-ground ‘booster’ team for farmer on-boarding. KCL sourced coffee from 12,000 Ugandan farmers. Digitized payments using mobile money resulted in a 27 percent cost reduction by eliminating the need to physically transport cash, an inefficient and unsafe process. KCL reported a 30 percent increase in coffee sales due to greater efficiency of operations, while MTN Uganda’s average revenue per customer in the pilot was 175 percent higher than that recorded among other mobile money users in the same district. Additional benefits that resulted from the digitization of procurement payments included reduced risk of theft, lower work time losses, and greater transparency.

The KCL project also resulted in higher farmer productivity and accessing better-quality outputs, in part due to faster, more reliable access to funds, and in turn enabling more timely investments by farmers.<sup>146</sup>

The positive impact of value chain digitization prompted UNCDF to extend its efforts to other agricultural commodities in Uganda, including maize, seed oil and tea.

In Nepal, UNCDF partnered with digital financial services provider Prabhu Management<sup>147</sup> to pilot dairy value chain digitization in two high milk producing districts in Nepal. Prabhu Management developed a digital milk ledger and a cloud-based record-keeping solution for dairy cooperatives, and integrated its bulk payment platform with its mobile wallet Prabhu Pay. Working with 20 cooperatives, the pilot enrolled more than 5,000 dairy farmers, with approximately 3,400 farmers becoming active users of the mobile wallet. Use of the digital wallet spiked by 600 percent during the COVID-19 pandemic. Farmers are now also using digital payments for agricultural inputs and insurance premiums.

## GENERATING REVENUE, JOBS AND FOOD

UNCDF’s approach demonstrates that it is possible to unlock the massive potential of the agriculture sector with digital solutions. These interventions raise income and productivity in a sector that is the world’s largest employer, provide jobs for a large youth population and meet the growing food needs of an ever-expanding world population in an environmentally sustainable way. These efforts support our aspirations for a just, equitable and sustainable world with zero hunger (Sustainable Development Goal (SDG) 2) and no poverty (SDG1).



<sup>146</sup> See [www.cgap.org/research/publication/digitizing-agricultural-payments-ugandas-coffee-value-chain](https://www.cgap.org/research/publication/digitizing-agricultural-payments-ugandas-coffee-value-chain).

<sup>147</sup> <https://www.uncdf.org/article/6415/digitalizing-rural-financial-ecosystems-journey-and-learnings-from-digitalization-of-dairy-value-chain-in-nepal>.

## THE POTENTIAL OF DIGITAL FINANCIAL INNOVATION TO TRANSFORM AGRI-FOOD SECTORS IN DEVELOPING CONTEXTS

By Maximo Torero Cullen, Chief Economist, FAO

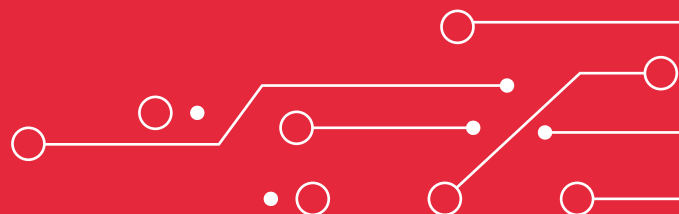
Digital financial innovation presents us with a compelling opportunity to build more inclusive, sustainable and efficient agri-food sectors. Digital finance, primarily in the form of mobile money, enables formal financial inclusion for millions<sup>148</sup> of previously underserved smallholder farmers. **Digitized agricultural payments** are often the first step towards financial inclusion, eventually leading to credit, savings, insurance, and a variety of complementary services.<sup>149</sup> Digital innovation is important for vulnerable groups engaged in agriculture, such as rural women and youth, who face complex and unique barriers (economic, legal, and sociocultural) to formal financial access. Most of these barriers can be mitigated, if not outright removed, through the design and commercialization of tailored digital financial services.

Digital financial innovation allows the many actors in agricultural value chains to interface and conduct business with more convenience, transparency and rapidity; it can overcome the lack of collateral or formal ID on the part of clients; it reduces the transaction costs and information asymmetries faced by financial institutions; it bolsters productivity and profitability for small-scale agricultural actors; and it provides small scale producers with access to markets and more stable and fair prices.

In the wake of the COVID-19 pandemic, digital finance has played an essential role in enabling agri-food value chains to remain **active and profitable** despite the widespread restrictions that have taken place, especially in developing contexts.<sup>150</sup> E-commerce platforms have allowed value chain actors (e.g. input suppliers, producers, processors, retailers) to continue doing business, while end clients have seen their demand for raw and processed food satisfied, which has kept production active. Digital credit has allowed small agri-food businesses to obtain essential loan capital to stay afloat, while digital payments have facilitated money transfers throughout agri-food value chains.

Simple and scalable digital financial innovations, designed and delivered with inclusion in mind, hold the most promising opportunities for small-scale agricultural actors.<sup>151</sup> These innovations adopt a **one-stop-shop approach**, in which several services (of which financial access is but one component) are gradually added and bundled together on a digital platform that is designed to be easy to access and use for farmers.

One notable example of this approach is **DigiFarm**, launched in Kenya in 2017 by Safaricom, a mobile money operator, in collaboration with Mercy Corps.<sup>152</sup> This mobile platform, accessible even through a basic mobile phone, allows farmers to access a wide range of services. These services are delivered by partner companies: direct input purchase; input credit; harvest cash loans; crop insurance; business training; access to soil testing; customized information on agricultural best practices; and linkages to market agents (e.g. processors, wholesalers). The data generated by each farmer's interaction with DigiFarm allows it to make lending decisions, with default rates lower than 5 percent. Despite these promising innovations, several barriers still limit inclusive agri-food sector digitization, especially among the most marginalized, rural and remote communities.



<sup>148</sup> A 2020 World Bank survey carried out among 29 domestic and international agribusinesses in 17 Sub-Saharan African countries, for example, estimated that digitizing payments among surveyed firms could act as a ramp for the financial inclusion of nearly 18 million farmers, opening up more than US\$6 billion in market potential for these enterprises.

<sup>149</sup> "Digitization of Agribusiness Payments in Africa: Building a Ramp for Farmers' Financial Inclusion and Participation in a Digital Economy", World Bank.

<sup>150</sup> "Digital finance and inclusion in the time of COVID-19: Lessons, experiences and proposals", FAO (2020).

<sup>151</sup> "The Digitalization of African Agriculture Report 2018–2019", Technical Centre for Rural and Agricultural Cooperation (CTA).

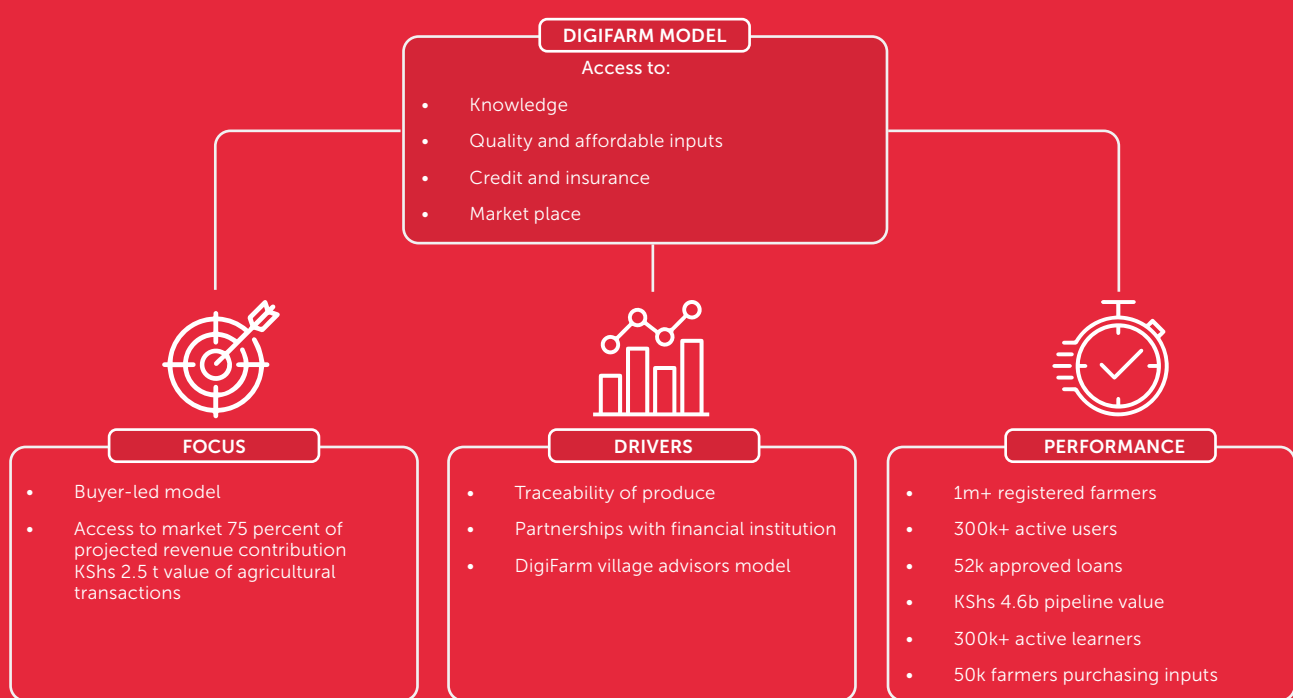
<sup>152</sup> Case study on the DigiFarm platform by Mercy Corps

Barriers include weak ICT infrastructure in rural areas; a weak or absent framework to regulate the digital sector, including digital consumer protection regulation; issues related to data privacy and digital identity of farmers, who may use digital services for the first time; their need for digital and financial literacy to successfully use these new services; an overall lack of capacity among financial institutions to digitalize; and the stark gaps, in terms of digital access and usage, at the gender level (women vs. men) and among age groups (youth vs. adults). In fact, given their tendency to be early digital adopters, young entrepreneurs can play a **champion role** to drive agri-food sector digitization.

Promoting the inclusive digital transformation of rural financial services is part of FAO's broader support to

digitalize the agri-food sector. Such support is provided from a policy, programmatic, and capacity-building perspective. The establishment of an **International Platform for Digital Food and Agriculture** by FAO and partners represents an important step in creating a supportive context for agri-food digitalization globally.<sup>153</sup> The Platform will provide an inclusive, global and multi-stakeholder forum for identifying and sharing ways to harness digital tools and related best practices in agriculture and food and to maximize the potential of digital innovations for all. Such innovations can range from e-commerce, digital finance tools and blockchain technologies to digital advisory services, tools for early warning on threats to food security, improved management of natural resources, Artificial Intelligence for better pest control, and more.

**FIGURE 16.**  
DigiFarm's strategic model and a sample interface of its mobile platform



<sup>153</sup> "Realizing the potential of digitalization to improve the agri-food system: Proposing a new international digital council for food and agriculture", FAO.



## SECTION 3.7

# ENHANCE ACCESS TO AFFORDABLE AND CLEAN ENERGY THROUGH DIGITAL INNOVATION AND TECHNOLOGY

By Vincent Wierda



## HIGHLIGHTS

- Countries cannot achieve the Sustainable Development Goals (SDGs) if their citizens cannot access basic energy, let alone power their dreams.
- UNCDF seeks to provide low-income households and micro-entrepreneurs with a jump-start in clean energy access through a market systems development approach, enabled through digital technology such as that of mobile payments.
- Digital finance has unquestionably increased access to affordable clean energy solutions, even in the most difficult and remote locations. By helping to transform a large fixed-cost proposition into a sequence of smaller payments, many more households are now able to afford clean energy and an increasing range of applications, from refrigeration to solar water pumps.

Access to power is integral to improving low-income people's standards of living, productivity and safety. The combination of rapidly falling hardware costs, increasing connectivity, growing digital payment rails

such as mobile money, and innovative business models is making off-grid solar and clean cooking solutions, as well as grid connection, possible for the millions of people who do not have access to modern energy.

## ACCESS TO CLEAN ENERGY POWERS UP LIVELIHOODS AND DREAMS

In Kisaba Village on Lake Victoria's Bukasa Island in Uganda, access to electricity has fundamentally changed over the past two years. Fishers are now able to preserve their catch using solar-enabled cold storage facilities, freed from reliance on expensive diesel generators. Miss Cissy operates a small community clinic that today has reliable lighting, where she can now keep medicines refrigerated. UNCDF's partner GRS Commodities Ltd. is achieving real change on the ground, with villagers able to access and pay for a range of solar electricity solutions.

However, for more than 770 million people in Africa and Asia, access to electricity remains a distant dream.<sup>154</sup> Without power, individuals – women in particular – struggle to complete daily tasks. Children rely on sunlight to study; they must stop when the sun goes down or use kerosene lighting with its noxious fumes. Traditional biomass, such as wood and agricultural waste, is still the main source of energy in least developed countries, aggravating already high rates of deforestation. Countries cannot achieve the Sustainable Development Goals (SDGs) if their citizens cannot access basic energy, let alone power their dreams.

Already in 2012, the International Finance Corporation estimated that globally, the poor spent US\$37 billion on poor-quality energy solutions to meet their lighting and cooking needs – a largely untapped market for the private sector to deliver better alternatives. However, until recently there were few alternatives, and those available had large upfront costs, as they typically relied on the energy grid. Also in 2012, UNCDF partner M-KOPA launched a transformational new digital business model for energy: Pay-as-you-go (PAYGO). Many other organizations now deploy this PAYGO business model around the world to make off-grid energy solutions available to communities that were previously underserved. The system enables quick, easy payments, providing access to solar energy and a range of other solutions. This innovative use of digital technology, which combines payments and metering, has allowed solar energy to leapfrog dirty energy technologies, providing consumers with access to affordable clean energy. Innovations such as these have enabled more than 108

million people globally to benefit from improved energy access by way of off-grid solar products.<sup>155</sup> Ensuring access to affordable, reliable, sustainable and modern energy for all (Sustainable Development Goal 7) is important, and critical to achieving other SDGs.

## ADDRESSING THE CHALLENGE OF BUILDING ENERGY MARKETS FOR ALL

Affordability, accessibility and awareness are all challenges to overcome if modern energy is to become a reality for women, youth, refugees, farmers and small entrepreneurs in least developed economies. Policies that only focus on on-grid solutions present obstacles to building decentralized energy markets. Put simply, markets do not work as they should. The promotion and retailing of energy solutions, energy generation and usage, and ultimately the maintenance of solutions, has proved a challenge. These barriers increase the cost of selling modern energy solutions by providers, known as Energy Service Companies (ESCOs), to client segments in rural and remote areas. As a result, ESCOs face difficulties in raising funding to cover their risks, expand operations, and reach customers with appropriate product financing options. UNCDF seeks to provide low-income households and micro-entrepreneurs with a jump-start in clean energy access through a market systems development approach, enabled through digital technology such as that of mobile payments.

## THE PROMISE OF DIGITAL SOLUTIONS

Digital finance as embodied in PAYGO solutions is a key enabler in the provision of affordable clean energy. PAYGO allows individuals to acquire a solar home system through a lease-to-own financing model. Instead of paying a large upfront amount to purchase a system, users can now make smaller and more frequent affordable payments from their mobile money account, depending on their cash flow. Digital solutions help to promote and retail energy products, facilitating their cost-effective purchase and operation by the last mile. Last but not least, they help to support the maintenance of such systems.

<sup>154</sup> International Energy Agency, *Access to Electricity: Flagship Report (2020)*. [www.iea.org/reports/sdg7-data-and-projections/access-to-electricity](http://www.iea.org/reports/sdg7-data-and-projections/access-to-electricity).

<sup>155</sup> GOGILA "Investing in the off-grid solar sector: what you need to know" (2019). [www.gogila.org/sites/default/files/resource\\_docs/gogila\\_investment-guide\\_def-web\\_opt.pdf](http://www.gogila.org/sites/default/files/resource_docs/gogila_investment-guide_def-web_opt.pdf).

FIGURE 17.

Off-grid energy value chain challenges

CHALLENGES	PRODUCT DEVELOPMENT	MANUFACTURE ASSEMBLY	MARKETING AND DISTRIBUTION	USAGE AND GENERATION	MAINTANCE
	Research, development, and refinement of technology	Manufacture/ importing of generator and/or device by energy/ enterprise	Promotion and retailing of energy products	Purchase, installation, and operation of energy production(s) and/or service by BoP households	Routine care for and refurbishing of energy product(s)
	<p><b>A1. Insufficient business development financing:</b> Lack of early stage/seed financing especially for local companies</p> <p><b>A2. Insufficient local research and development capacity:</b> Limited domestic technical infrastructure and talent to develop products that are tailored to domestic market (all products foreign developed)</p>	<p><b>B1. Insufficient product financing:</b> Lack of working capital to finance initial production, assembly</p>	<p><b>C1. Insufficient working capital finance:</b> Lack of working capital finance for energy enterprises to finance setup of distribution network, initial marketing campaign and purchase of SHS (that amortize over 2-3 year period through usage fee)</p> <p><b>C2. Insufficient consumer awareness:</b> Rural population insufficiently informed about benefits of off-grid solutions</p> <p><b>C3. Insufficient distribution reach:</b> Energy enterprises need to establish costly distribution network to reach beyond large population centres</p> <p><b>C4. Insufficient consumer risk management experience/ tools:</b> Energy enterprises lack experience and tools to access and manage credit risk of potential customers</p>	<p><b>D1. Device-based insufficient consumer lending to low-income households:</b> Low income households have little or no access to short-term bank lending to finance energy device or home system</p> <p><b>D2. Flooded market with counterfeits with no certification and poor quality</b></p> <p><b>D3. Complex payment administration:</b> Unavailability of cashless and cost-effective payment instruments to operate instalment-based finance</p> <p><b>D4. Community-level usage modulation:</b> Insufficient ability to match supply with demand, especially in peak usage periods</p>	<p><b>E1. Lack of effective maintenance:</b> Inadequate technical capacity and poor infrastructure limit maintenance provision</p> <p><b>E2. Insufficient upgrade financing:</b> Battery replacement changes (every 3 years) for solar systems too costly for one-time payments</p> <p><b>E3. Unavailability of protection against theft or destruction of equipment:</b> No insurance tool to protect against theft damage, destruction of generation devices</p>
WHERE DIGITAL SOLUTION CAN CONTRIBUTE					

## INCREASING ACCESS AND AFFORDABILITY OF CLEAN ENERGY SOLUTIONS

UNCDF promotes financial inclusion across the energy value chain by investing in early stage, innovative business ideas that seek to address both product delivery and financing for consumers. Between 2013 and 2020, UNCDF partnered with more than 40 clean energy businesses and financial institutions in Asia and Africa to distribute more than 700,000 solar lamps, solar home systems and improved cooking solutions to the last mile, including households, micro, small and medium-sized companies, health-care centres and schools. More than half of these products were sold either through microfinance loans or PAYGO financing.

## DIGITALIZING OPERATIONS TO FACILITATE BUSINESS EXPANSION

Digital consumer financing enables real-time client tracking and a quick response to any problems. It allows for a better understanding of customer payment patterns across geographies, client segments and seasons, supporting better service and improved management of risks. Solutions such as smart metering and digital monitoring are enabling data-backed flexible financing, further increasing affordability.

Entire value chains are now being digitalized as solutions are bundled for customers and enterprises. For example, some ESCOs are bundling solar home systems with a cheap smartphone,<sup>156</sup> ensuring that customers can

<sup>156</sup> See [www.gsma.com/mobilefordevelopment/blog/vitalite-zambia-learnings-from-providing-pay-as-you-go-smartphones-through-pay-as-you-go-solar](https://www.gsma.com/mobilefordevelopment/blog/vitalite-zambia-learnings-from-providing-pay-as-you-go-smartphones-through-pay-as-you-go-solar).

make payments on their energy system through mobile banking. In Uganda, UNCDF partnered with FENIX, MTN and Yo Uganda to facilitate digital payments for coffee farmers. FENIX provides a reliable solar system coupled with mobile payments capability.<sup>157</sup> In addition to paying for their systems, 7,000 farmers in the Mount Elgon region can now receive real-time secure payments for their harvests and check on coffee prices nationally.

## BIG DATA ANALYTICS TO UNDERSTAND CUSTOMERS AND ADVOCATE FOR POLICY CHANGE

Digital monitoring in support of customer insight is critical to the success of this rapidly evolving sector and understanding the impact of our efforts at UNCDF. Using the mobile transaction data of 672,000 off-grid customers, together with repeat survey data of 424 clients, we have been able to develop a dashboard providing customer insights. The dashboard highlights growth opportunities in the PAYGO solar market, which can be used by association members to inform their market expansion, as well as to lobby governments.<sup>158</sup> Among the findings were that PAYGO leads to wider financial inclusion, with customers opening mobile money accounts in order to pay for solar solutions. Insight into the inverse relationship between taxes on digital finance and PAYGO activations were established. This informed policy advocacy to improve the business and regulatory environment for energy solutions through partners such as the Uganda Solar Energy Association. Advocacy efforts included successfully lobbying for the reduction of the mobile money tax and an import tax waiver on solar batteries.

## USING CATALYTIC CAPITAL TO SCALE CLEAN ENERGY MARKETS

UNCDF works to ensure that the right type of capital is available for ESCOs and financial institutions to expand their operations to new geographies and client segments. Grants help PAYGO providers to demonstrate new

and innovative business models to potential investors. These also enable new, innovative financing models such as receivables financing and alternative credit scoring. Critical, however, is affordable debt for working capital, enabling customer financing and ensuring sufficient inventory. The LDC Investment Platform enables UNCDF instruments such as direct debt investments and first loss-guarantees, helping to crowd-in additional private investment. For example, a small guarantee for Solar Today in Uganda helped to unlock a loan from Centenary Bank at five times the value of the guarantee – one of the first deals of its kind in the Ugandan financial sector. Government development finance institutions have a role to play. UNCDF partnered with the Development Bank of Ethiopia to ease liquidity constraints for five financial institutions and 18 ESCOs through a guarantee mechanism. This guarantee has enabled 437,000 energy solutions to be sold in Ethiopia since 2018.

## DIGITAL HELPS TO BUILD A CLEAN ENERGY FUTURE AND VICE VERSA

Digital finance has unquestionably increased access to affordable clean energy solutions, even in the most difficult and remote locations. By helping to transform a large fixed-cost proposition into a sequence of smaller payments, many more households are now able to afford clean energy and an increasing range of applications, from refrigeration to solar water pumps. In addition to driving progress towards SDG7 (Ensure access to affordable, reliable, sustainable and modern energy for all), advancing access to clean renewable energy will positively impact women's and men's living standards through better health and educational outcomes, and more economic opportunities. Reliable, clean energy is key to powering a digital economy post-COVID-19, building back better towards a green future.



<sup>157</sup> See [www.uncdf.org/article/2109/digital-money-today-or-cash-tomorrow](https://www.uncdf.org/article/2109/digital-money-today-or-cash-tomorrow).

<sup>158</sup> See [www.uncdf.org/article/5314/digital-finance-for-energy-access-in-uganda-a-big-data-analytics](https://www.uncdf.org/article/5314/digital-finance-for-energy-access-in-uganda-a-big-data-analytics).



## SECTION 3.8

# DIGITAL SOLUTIONS FOR INCLUSIVE AND EQUITABLE EDUCATION FOR UNDERSERVED COMMUNITIES

By Chris Lukolyo and  
Julio Malikane



## HIGHLIGHTS

- The COVID-19 pandemic, when 94 percent of learners worldwide were required to continue education at home regardless of their ability to do so digitally, has demonstrated the gaps that can emerge, despite the best efforts of teachers to meet the needs of learners.
- Amidst renewed appreciation for the role of digital technologies in education, careful consideration must be given to additional demand-side barriers that limit the use of digital solutions, especially among school-aged youth in those communities most at risk of being left behind.
- By addressing the overt and underlying barriers in the education system, it is possible to avoid the many pitfalls that can lead to failed digital solutions in education. Above all, close partnership with the relevant education ministries is critical to design solutions and secure buy-in and future investment for sustainability.

Access to affordable, quality education can be improved through digital technology. Students, teachers, parents/ caregivers and schools all stand to benefit from adopting digital solutions that can help to improve affordability and the learning experience, as well as delivery costs, freeing up resources to explore new ways and approaches to

improve educational outcomes. Despite this, education remains a distant promise for many children. Some 258 million children globally should be in school but are not,<sup>159</sup> a figure that includes 26 million primary school-aged children in least developed countries (LDCs). Barriers to educational outcomes exist both on the supply

<sup>159</sup> UNESCO, *The Digital Transformation of Education: Connecting Schools, Empowering Learners* (2020). <https://unesdoc.unesco.org/ark:/48223/pf0000374309>.



side, in schools and education systems, and the demand side, on the part of students and their parents/caregivers. In all low- and middle-income countries, there are several underserved communities that face even greater barriers to accessing education, including women, youth, refugees, migrants and rural communities. Digital transformation is critical to overcome these barriers and deliver inclusive and equitable quality education in LDCs, a key dimension of Sustainable Development Goal (SDG) 4 (Quality education for all).

Parents and caregivers struggle with a number of constraints, which can further contribute to exclusion, even when quality schooling is accessible. In Uganda, for example, Godson Kayiza<sup>160</sup> struggles to pay for school fees that are required upfront for his four school-going children. Godson is a farmer who earns most of his income from his harvest, but school fees are not due on a similar timeline, and are payable as a lump sum. Despite the priority that he places on education, it is only when he negotiates flexible payment that he can meet his obligations. Unforeseen expenditures arising from family and health emergencies make his ability to save difficult without a savings account. Accounts and mobile money have eased his ability to put money aside and pay for his children's school, even in distant Entebbe. Examples such as this show that the growing use of mobile phones among many parents/caregivers, students, teachers and administrators can improve educational outcomes in a number of ways, especially when these are designed to complement and enhance stakeholders in the education system.

## KEY BARRIERS

Challenges across the sector contribute to the education crisis. Supply-side barriers affecting the delivery of education include inadequate funding, teacher training, learning environments and, often, curricula. The following issues contribute to these challenges:

- **Curricula development** is adversely affected by resistance among stakeholders to introduce new curricula that include job-specific skills, as well as a lack of access to benchmark best-in-class curricula and content.
- **Teacher training** is adversely affected by low retention of teachers due to low salaries and insufficient school inspection or low-quality inspection services.

- **Learning environments**, in terms of instruction and infrastructure, are inadequate. Instruction is negatively affected by low teacher motivation, poor communication with parents/caregivers, insufficient head teacher training due to financial constraints, and inadequate monitoring and supervision. Infrastructure is negatively affected by the lack of learning materials, proper facilities for a conducive learning environment, and lack of accommodations for teachers, in hard-to-reach areas.

Initiatives to improve educational outcomes must clearly address these challenges, especially during a time when digitalization has emerged as a key priority. The COVID-19 pandemic, when 94 percent of learners worldwide were required to continue education at home regardless of their ability to do so digitally,<sup>161</sup> has demonstrated the gaps that can emerge, despite the best efforts of teachers to meet the needs of learners.

Demand-side barriers – among parents, caregivers and students – reduce their ability to access education, or reduce their desire to do so altogether. Among these issues are prohibitively high fees (with payment often required in a lump sum) for school and other related costs, long distances to school, and lack of food. Poor insight on the part of parents/ caregivers into students' performance complicates supervision of their education.

Amidst renewed appreciation for the role of digital technologies in education, careful consideration must be given to additional demand-side barriers that limit the use of digital solutions, especially among school-aged youth in those communities most at risk of being left behind. These barriers can also affect the use of digital solutions among teachers. They include:

- **Prohibitive cultural practices.** While some cultures limit access to education for women, others forbid it entirely. Furthermore, some cultures restrict girls from accessing social media platforms, believing that access exposes them to immoral behaviour, while no such concern is held for boys.
- **Limited digital infrastructure.** Limited connectivity and devices restrict usage among students, especially in remote communities where mobile network operators are not incentivized to invest. Many use-cases for digital solutions are limited by the availability, quality and cost of connectivity, preventing a wholesale leap into the digital future of learning. Even when it is available and accessible, lack of technical support for software and hardware is repeatedly reported.

<sup>160</sup> See [www.uncdf.org/article/2778/digital-financial-services-reduce-worries-school-fees](https://www.uncdf.org/article/2778/digital-financial-services-reduce-worries-school-fees).

<sup>161</sup> UNESCO, *The Digital Transformation of Education: Connecting Schools, Empowering Learners* (2020). <https://unesdoc.unesco.org/ark:/48223/pf0000374309>.

- **Low levels of digital literacy.** Many countries do not yet mainstream digital skills into basic education curricula or teaching practices. During the COVID-19 pandemic, for example, some schools sent course materials to students using the WhatsApp messaging platform. However, even students with devices and connectivity struggled to download, print and capture images and return assignments to teachers.
- **Unfavourable policies.** While many low- and middle-income countries now prioritize digital transformation in their national development strategies, many governments have not removed policy obstacles to the adoption of digital technologies, which ultimately affects the education sector. For example, know-your-customer (KYC) requirements for people to obtain SIM cards and taxes on digital-related services can limit the adoption of technologies.

## OPPORTUNITIES FOR DIGITAL TRANSFORMATION IN EDUCATION

In addition to parents and caregivers, students, teachers and schools stand to benefit from adopting digital solutions. Digital services can facilitate access to high-quality education for the most vulnerable, even in remote rural areas. For example, new pay-as-you-go business models are emerging, smoothing school fee payments and allowing vulnerable populations to access digital content more affordably. Inclusive innovation in the following areas can address critical supply- and demand-side barriers:

- **Digital financial services.** Payments solve the cash-handling issue for students, parents/caregivers and schools, provide clarity over and traceability of school finances, and allow linkages to financial institutions. They are also enabling new 'pay-as-you-learn' business models that align with parents' income flows. This, in addition to dedicated digital savings and loans, allows parents/caregivers to designate savings and loans for education only and prevent the diversion of funds for other uses.
- **E-learning (ed tech) solutions** for teachers and students enable virtual training and self-learning, access to high-quality teaching and learning materials, and gamified or interactive content. Blended learning approaches are emerging that complement and enhance existing teaching

approaches with ed tech solutions. This can improve learning instruction. These solutions can also serve as an important pathway for girls to build science, technology, engineering, and mathematics (STEM) skills and as an enabler for lifelong learning.<sup>162</sup>

- **E-school management solutions** enable the digitization of school records (attendance, performance, etc.), improved communication between teachers and parents, school management (of processes, finances, monitoring), and performance-based pay for teachers. This can improve the overall learning environment.
- **Data analytics** for district leaders to support operational and decision-making in their respective districts and ease the reporting to the ministry level. This provides visibility of schools' key performance indicators that lead to better support. Also, data analytics ease reporting from the district to ministry level. This can also improve the overall learning environment.

Successful deployment of these solutions considers the current accessibility of digital infrastructure to key stakeholders in the education sector. Many of these are already feasible, especially when careful attention is paid to designing client-centric solutions that align with students' and parents' access to and use of mobile-based services, such as mobile money, interactive SMS and apps. These can complement the important initiatives being implemented by our partner agencies at the United Nations, including the Giga and e-Schools initiatives to connect and prepare schools to empower learners.<sup>163</sup>

<sup>162</sup> See [www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/09/EdTech-Final-WEB.pdf](http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/09/EdTech-Final-WEB.pdf).

<sup>163</sup> UNESCO, *The Digital Transformation of Education: Connecting Schools, Empowering Learners* (2020). <https://unesdoc.unesco.org/ark:/48223/pf0000374309>.

# DIGITAL TRANSFORMATION OF EDUCATION STARTS WITH A CLEAR FOCUS ON BARRIERS

Several examples highlight the importance of taking a systems-based and client-centric approach to focus on the barriers of key stakeholders in the education system. To provide further context on how digital transformation can be achieved, the following example draws on UNCDF's experience in Uganda, implementing the Leaving No one Behind in the Digital Era programme.

Despite significant progress in increasing access to education in Uganda, gaps persist. Rural communities experience low-quality education, enrolment and completion rates. The education sector grapples with under-resourced and over-burdened schools in a country with an increasingly young population (average age of 16.7 years).<sup>164</sup>

UNCDF supported the digitization of payments in 20 schools in Uganda over an 18-month period, which resulted in a drop in student absenteeism, increased school fee collection rates, improved productivity of the finance team, and reduced cost of cash handling. More than 60 percent of parents and caregivers adopted digital payments. A client-centric approach that addressed the different barriers faced by each stakeholder – including school administrators, parents and caregivers – led to the launch of convenient and flexible digital payment options for parents, including Godson, for school fees. Similar initiatives in the Pacific, for example in Solomon Islands, have resulted in active usage (72 percent for men, 52 percent for women) among parents and caregivers for digital education payments. In particular, users from rural households

valued not having to travel long distances to pay school fees. The success of these services is dependent on parents' and caregivers' access to agents who can effectively assist with cash-in, cash-out services.

To complement the efforts of government and other stakeholders, UNCDF takes a systems development approach to building towards sustainable education solutions. UNCDF's commitment to "leaving no one behind in the digital era" focuses on the educational constraints faced by women, youth, refugees and migrants in rural Northern Uganda. Interviews with students, families, teachers and school administrators in this region identified several supply-side barriers that prevent young people from accessing quality education (an excerpt is provided in Figure 18). Many barriers and underlying constraints were identified during the assessment of the education system. UNCDF worked with the Ministry of Education to prioritize targeted interventions to address the following barriers:

- **Ineffective school administration.** Poor school administration processes undermine the efficient operation of schools, which in turn affects the quality of education. A root cause of this barrier is the use of inefficient payment systems and processes.
- **Poor annual school year planning,** which is not informed by demand and results in under-resourced schools. A root cause for this barrier is the limited use of data by policymakers to inform budget and resource allocation decisions.

Interventions and digital solutions were prioritized based on the resources needed for implementation, potential impact on the target communities and feasibility of the solution. The selection of these digital solutions considered the digital demand-side barriers faced by communities in Northern Uganda, which benefited from a supportive ecosystem of mobile connectivity, payments and agent locations.

<sup>164</sup> See [www.worldometers.info/world-population/uganda-population/](http://www.worldometers.info/world-population/uganda-population/).

**FIGURE 18.**

Education sector constraint analysis by UNCDF (February 2020)

PROBLEM (SYMPTOM)	UNDERLYING CONSTRAINTS	UNDERLYING CONSTRAINTS	RELEVANT SUPPORT FUNCTIONS/ROLES	WEAKNESS IN SUPPORT FUNCTIONS/ROLES
Ineffective school administration	Data to inform school administration are limited	Data are not routinely collected Certain data points are not collected Data records are lost	Related services Skills	Lack of adequate accountability Lack of appropriate arrangements to ensure collection and accountability Lack of knowledge on efficient data collection and management techniques
	Data to inform school administration is not easily usable	Data are in hardcopy format Data are not collected in a standard format e.g., ticking registers vs. students writing their names down	Skills	Lack of knowledge on efficient data collection and management techniques Lack of digital literacy hindering the use of computers for electronic data capturing Insufficient budget allocation to procure phones/computers Lack of policy driving budget allocation to technology
	Inefficient payment processes	Parents mainly make cash payments	Information	Lack of sensitization and the costs and benefits of mobile money in comparison to other payment mechanisms
Poor annual school year planning	Use of relevant data to inform school planning as well as current and planned interventions by other education stakeholders is limited	Data are not readily useable because (i) it is not available at the right level of aggregation / disaggregation, (ii) data compilation are difficult, and (iii) data are in hard copy Planners lack skills to appropriately leverage and analyse data	Information Infrastructure – power and connectivity Skills	Data are not accessible from a central source and are not appropriately aggregated/disaggregated Lack of digital literacy skills hindering the use of computers/phones for electronic data capturing Lack of reliable power sources and connectivity Lack of appropriate training of school planners

To address inefficient payment systems and processes, for example, UNCDF has partnered with the Ugandan Ministry of Education and a Ugandan company (Service Cops Ltd.), which provides education payment solutions in many African countries. UNCDF support is adapting the digital school fees payment solution for rural Northern Uganda. The solution reduces the time and cost of a typical school fee transaction and is expected to have a significant impact on improving levels of efficiency in governance and management. As digital school fees are adopted and integrated into the workflows of school, the roadmap for the programme will introduce additional financial services, such as digital loans, savings and student pocket money.

UNCDF is also supporting the Ministry of Education and Sport to pilot digital recruitment and e-learning solutions, so as to improve the quality of skills in secondary school teachers. Most digital solutions in the education sector are still at the pilot stage and need a boost to reach scale. For initiatives such as this one in Uganda and elsewhere to scale, a number of factors will be essential. It will be important to educate users in how the products work, and to market new

solutions to parents and caregivers through school, government and provider communications. It will also be crucial to select technologies that are accessible, with offline capabilities, that can work in unstable power environments.

A systems and client-centric approach brings focus to feasible digital solutions for key stakeholders in the education sector. By addressing the overt and underlying barriers in the education system, it is possible to avoid the many pitfalls that can lead to failed digital solutions in education. Above all, close partnership with the relevant education ministries is critical to design solutions and secure buy-in and future investment for sustainability. In particular, effective digital solutions exist to improve school administration and budget planning in the education sector. Improvement in these dimensions can free up resources and accelerate new educational approaches to enhance educational outcomes and contribute to SDG4. Linking these initiatives to national digital transformation efforts that are now under way, especially with digital literacy programmes, will be pivotal in ensuring that young people acquire skills for the digital age.



## SECTION 3.9

# BETTER HEALTH THROUGH DIGITAL SOLUTIONS

By Chris Lukolyo



## HIGHLIGHTS

- Health-care challenges in developing countries materially impact the quality and cost of services, particularly for vulnerable and rural populations. Addressing these will help to enable better access to health care for the most vulnerable. On the demand side, care is expensive and accessing it often requires travel, further increasing the costs for users. On the delivery side, largely paper-based processes and supply chains are inefficient, and the delivery of care is challenged by staffing issues and lack of adequate infrastructure.
- Through its partnerships, reach and experience with sustainable digital models, UNCDF plays an important role supporting customer-centred innovations, and advocacy to drive the conversation and demonstrate how to enable better health care for the most vulnerable.

Digital solutions can improve general access to health care and its quality, cost and delivery in rural areas. They can help to encourage better health-seeking behaviour through access to information and equip community

health workers to deliver quality services at the last mile, while reducing the cost to health-care providers. Health costs force 100 million people into extreme poverty every year.<sup>165</sup>

<sup>165</sup> World Health Organization, World Bank, *Tracking Universal Health Coverage: 2017 Global Monitoring Report*, & UNSGSA, Better Than Cash Alliance, UNCDF, World Bank "Igniting SDG progress through digital financial inclusion" for highlights of the robust evidence linked to 13 of the 17 SDGs.



Like many Beninese, Oseye used to struggle to see a doctor. When she reached the hospital there were long waits for an appointment, and additional time was needed to retrieve her records. Waiting imposed further costs on her in terms of lost time attending to matters at home. After she heard about the goMediCAL application, a nurse at the health centre helped her to register. Now able to locate her doctor through the app and make appointments, Oseye feels peace of mind, knowing that any medicines or services that she may need are easily accessible via her phone.

## THE STATE OF HEALTH CARE IN UNDERSERVED COMMUNITIES

Less than half of the global population is covered by essential health services.<sup>166</sup> Low-income households fare even worse. They receive most of their health care from government-run or subsidized not-for-profit entities; these providers are often characterized by inadequate staffing and poor remuneration and equipment. It is estimated that an additional 18 million health-care workers are needed, primarily in low- and lower middle-income countries, to achieve universal health coverage by 2030.<sup>167</sup>

There has been progress in a number of health areas, such as in reducing maternal and child mortality, in increasing coverage of immunization, and in reducing some infectious diseases. However, while progress continues, the rate of improvement has slowed and is likely to reverse. Furthermore, illness and deaths from communicable diseases will spike as a result of the COVID-19 pandemic. For example, service cancellations are expected to lead to a 100 percent increase in malaria deaths in sub-Saharan Africa.<sup>168</sup>

Yet government spending on a per capita basis remains low. There is an absence of national health insurance schemes in many least developed countries, with individuals typically paying a high percentage of health costs themselves. Concerted efforts are required to achieve universal health coverage and sustainable financing for health.

Health-care challenges in developing countries materially impact the quality and cost of services, particularly for vulnerable and rural populations. Addressing these

will help to enable better access to health care for the most vulnerable. On the demand side, care is expensive and accessing it often requires travel, further increasing the costs for users. On the delivery side, largely paper-based processes and supply chains are inefficient, and the delivery of care is challenged by staffing issues and lack of adequate infrastructure.

## DIGITAL IS REVOLUTIONIZING HEALTH CARE

Digital solutions have helped to improve health-care delivery by making services available more cost-effectively and simplifying procedures, as well as improving coverage by enhancing transparency and accountability.

Several examples demonstrate the benefits of providing health care digitally. Initiatives such as Babyl in Rwanda – which provides efficient virtual access – show how digital services can be deployed at scale in the health sector, in partnership with governments. This digital model provides efficient access to health care through virtual delivery, reducing costs for consumers.

Beyond consumer impact, digital technologies can also help health-care providers to improve internal efficiency. In many developing countries, health clinics most often manage patient- and clinic-related data manually, increasing record retrieval times. Across the landscape, ‘healthtech’ platforms are emerging to serve pharmacies, such as Field Intelligence in Kenya and Nigeria. These platforms leverage pharmacists’ data and extend in-kind credit through ‘pay-as-you-sell’ pricing strategies; business model innovation such as this can improve the efficiency of pharmacies and keep prices low.<sup>169</sup> Yet health data are highly sensitive and must be treated as such, as shown by the use of non-client, pharmacy-level data. Some health system financing innovations are bundling insurance with information and advice, as in the case of Tonic in Bangladesh, which now has 5 million registered users. Digital solutions can also be used by frontline health workers to conduct detailed registration of household medical needs and provide health-care services to communities, in addition to efficiently managing/monitoring extension workers.

<sup>166</sup> United Nations, “Good health and well-being: why it matters”, [www.un.org/sustainabledevelopment/wp-content/uploads/2018/09/Goal-3.pdf](http://www.un.org/sustainabledevelopment/wp-content/uploads/2018/09/Goal-3.pdf).

<sup>167</sup> See [www.who.int/health-topics/health-workforce#tab=tab\\_1](http://www.who.int/health-topics/health-workforce#tab=tab_1).

<sup>168</sup> WHO, “The potential impact of health service disruptions on the burden of malaria: a modelling analysis for countries in sub-Saharan Africa” (Geneva, 2020).

<sup>169</sup> See [www.accion.org/how-tech-is-helping-to-meet-health-care-needs-during-the-pandemic](http://www.accion.org/how-tech-is-helping-to-meet-health-care-needs-during-the-pandemic).

## UNCDF IS A CATALYST FOR BETTER HEALTH CARE

Through its partnerships, reach and experience with sustainable digital models, UNCDF plays an important role supporting customer-centred innovations, and advocacy to drive the conversation and demonstrate how to enable better health care for the most vulnerable. Applying a market systems development approach, our efforts focus on overcoming key constraints to facilitate the development of well-functioning sustainable markets.

Digital approaches can expand access by improving delivery through both new and existing channels, making health care more cost-effective for both consumers and providers.

In supporting goMediCAL, UNCDF had two main goals: to integrate more people in Benin into the health-care system, and to increase digital financial transactions and inclusion. The goMediCAL app achieves these aims by addressing constraints faced by medical providers for scheduling, records management and payments, among others. The application allows patients to make and confirm appointments with more than 250 health professionals, share medical records and pay remotely. By 2019, some 15,900 patients were regularly using the app, well above the initial target.<sup>170</sup>

A significant shortage of trained health workers in Uganda has led community health workers – such as Village Health Teams (VHTs) – to become the cornerstone of the primary health system. VHTs are increasingly recognized as an integral component of the health-care workforce necessary to achieve public health goals. However, despite their community-level successes, VHTs experience challenges related to remuneration, training and retention.<sup>171</sup>

Take the case of Leilah Akubar, a community health worker in Koboko, who has to carry a hefty registration book, a weighing scale, a blood pressure machine and sometimes food supplements to a household when called upon to provide primary health-care services. Once inside a home, she goes through her book to locate the family's information – registering a pregnant mother or sick child, writing a referral if

necessary. Replacing paper-based reporting with a digital system cuts Leilah's physical load by half, while reducing inconsistencies and inaccuracies in diagnosis and reporting.

Working in close collaboration with the Ugandan Ministry of Health, BRAC Uganda and Medic Mobile, UNCDF considered the challenges faced by village health workers like Leilah, before launching an initiative to design and deploy a sustainable delivery model leveraging digital technology. The model seeks to increase the service quality and productivity of community health workers and improve health-care outcomes. The solution focuses on enhancing delivery to address use cases such as antenatal and postnatal care, and disease surveillance in Northern Uganda and Kiryandongo District.

The digital solution has been pivotal in enabling community health workers to maintain delivery of health-care services during the COVID-19 pandemic. Recognizing the need to keep VHTs motivated, the solution enables them to earn supplementary income from the sale of health-related products. By addressing the systemic barriers to improved quality of service, performance and motivation, the pilot is poised to support 400 community health workers, which will in turn impact 200,000 beneficiaries or member households.

## OPTIMIZING MEDICAL SUPPLY CHAINS FOR BETTER HEALTH OUTCOMES

In a market assessment carried out by UNCDF in Uganda, underlying constraints were identified regarding the medical supply chains, including: procurement financing and processes, limited supply capacity, poor infrastructure, distribution and planning, lack of personnel, and poor coordination. Drug stock-outs pose a widely acknowledged health problem across sub-Saharan Africa, and despite a number of digital pharmacy solutions, Uganda still faces challenges.

<sup>170</sup> See [www.uncdf.org/article/5317/five-years-of-market-development-in-benin-senegal-and-zambia-2015-2019](http://www.uncdf.org/article/5317/five-years-of-market-development-in-benin-senegal-and-zambia-2015-2019).

<sup>171</sup> Kimbugwe, G., Mshilla, M., Oluka D., et al., "Challenges faced by Village Health Teams (VHTs) in Amuru, Gulu and Pader Districts in Northern Uganda", [www.ncbi.nlm.nih.gov/pmc/articles/PMC4542049](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4542049).

Responding to the need for improved stock management of essential drugs and medical supplies in Uganda, UNCDF has launched an initiative with Medical Access Uganda Limited. Leveraging digital technology, a solution has been deployed to provide regular inventory management information regarding essential drugs and medical supplies. The system provides timely information, alerts and reports to relevant supply chain stakeholders on the availability of drugs and medical supplies, and enables effective planning to ensure that the flow is kept constant.

For these efforts to yield success, they need to ensure government buy-in and involvement. Policy changes may be required to create an enabling environment and support infrastructure development. However, governments cannot walk this path alone. There is a need to crowd-in players already operating in the ecosystem. Partnerships such as that of UNCDF with the Swedish International Development Cooperation Agency complement government efforts to improve access to and delivery of health-care services, especially for those in hard-to-reach areas. These efforts help to provide better health-care solutions for all, as targeted in Sustainable Development Goal (SDG) 3 (Ensure healthy lives and promote well-being for all at all ages), and have positive spillover impacts on other critical SDGs.



## SECTION 3.10

# TAILORED DIGITAL FINANCIAL SERVICES FOR CLIMATE CHANGE AND OTHER DISASTERS

By Krishnan  
Narasimhan



## HIGHLIGHTS

- Numerous approaches can be taken, including capacity-building and education on resilience and recovery planning, to manage the risk of climate-related disasters. Tailored financial services must be among these approaches, as they stand to make effective and relevant solutions available to the most vulnerable.
- Climate action must include climate disaster risk financing and insurance because it enables marginalized people, communities and countries to mitigate the effects of climate-related disasters and strengthen other coping efforts. Leveraging digital technology, especially following the accelerated shift to digital services during the COVID-19 pandemic, creates a clear pathway for taking urgent action.

Climate change now threatens the resilience and adaptation of marginalized people globally, pushing many of them further into poverty. The hostile impacts of climate change are not equally shared across the world; given the variation in regions' exposure to hazards, ability to adapt, and the make-up of marginalized groups, some regions and groups bear a heavier share of the burden.

In East Africa, the extreme flooding and locust outbreaks in 2020 have increased hunger and poverty for millions of people, demonstrating that the most vulnerable are at risk. Yet, these populations have not

significantly contributed to global warming. In countries such as Bangladesh, whose rural population is heavily reliant on agriculture, flooding caused and exacerbated by climate change has eroded people's livelihoods and food security.<sup>172</sup> In Nepal, where more than 80 percent of the population depends on agriculture and forest resources for its livelihoods, people are increasingly prone to floods, soil erosion and landslides.

<sup>172</sup> Alamgir, M. S., Furuya, J., Kobayashi, S., Mostafiz, R. B., & Ahmed, M. R., "Farm income, inequality, and poverty among farm families" (GeoJournal, 2020).



Climate change is expected to increase the intensity and frequency of hazards affecting people, especially for marginalized groups,<sup>173</sup> so now more than ever, it is critical to assist the most vulnerable people and countries. Numerous approaches can be taken to address this challenge, including capacity-building and education on resilience and recovery planning, to manage the risk of climate-related disasters. Tailored financial services must be among these approaches, as they stand to make effective and relevant solutions available to the most vulnerable.

## DIGITAL FINANCE CONTRIBUTES TO COMMUNITY RESILIENCE

For example, tailored index-based weather insurance services have been deployed in Bangladesh and India, using satellite technology. These services help to reduce financial risks to smallholder farmers due to adverse weather events.<sup>174</sup> In East Africa, the use of data collection technology and satellite imagery has enhanced the response to the locust outbreak by improving control operations.<sup>175</sup> Success with insurance services has also been achieved by the Caribbean Catastrophe Risk Insurance Facility,<sup>176</sup> which aids small developing economies by providing rapid payouts after disasters as part of the initial disaster response – helping countries that face short-term cash flow problems after a catastrophe.

While insurance can be used as an *ex-ante* approach to managing disaster risk, remittances can be used as an *ex-post* response. These play a key role in the aftermath of disasters as migrants living abroad send money to their families back home. In 2018, the World Bank recorded a total of US\$529 billion remittance flows to low- and middle-income countries.<sup>177</sup> Given the importance of remittances and insurance as a source of income during crises, new business models and digital innovation for financial services can be pivotal in making these more inclusive and widely available.

## INNOVATION TO MAKE INSURANCE MORE AFFORDABLE AND INCLUSIVE FOR MARGINALIZED GROUPS

Traditional insurance products and services in Africa, Asia and the Pacific are relatively unknown, poorly understood, or generally perceived as unaffordable, especially by marginalized segments. A demand-side survey conducted by UNCDF in Fiji in 2015 and repeated in 2020 shows that the majority of people without insurance in the Pacific either do not know what insurance is, or do not know where to find it.<sup>178</sup> Most of the products available offer inadequate risk coverage and have prohibitively high premium rates, contributing to low penetration rates of only 2.8 percent in Africa and 0.2 percent in Bangladesh.<sup>179</sup> However, innovations are making insurance more affordable and relevant to marginalized segments.

Many vulnerable people may think that insurance is very expensive, even considering it a luxury item. The FijiCare bundled microinsurance product proves otherwise; it provides total coverage of 10,000 Fijian dollars (FJD) (US\$5,000) for risks such as death, funeral expenses, fire and personal accident for a premium of FJD 1 (\$0.45) a week,<sup>180</sup> showing that affordable insurance is possible for everyone, even low-income earners. Interestingly, the FijiCare bundled microinsurance product initially targeted sugar cane farmers and soon covered more than 13,000 producers throughout Fiji. The product went on to insure more than 135,000 clients, showing that there is an appetite for microinsurance among marginalized groups in the Pacific.

Innovation can make insurance more inclusive. Administration for traditional insurance can be costly, but the use of digital tools and aggregators – such as seed companies – for distribution, payments and processing can make the process cheaper. FijiCare used aggregators, including cooperatives, growers' associations and credit institutions, to assist in the collection of premiums and the processing of claims. The FijiCare mobile app allows customers to upload their claims remotely, eliminating the need to submit applications physically and reducing costs in the process. The digitalization of insurance value chains

<sup>173</sup> Intergovernmental Panel on Climate Change, *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems*.

<sup>174</sup> CGIAR, "Insurance as an agricultural disaster risk management tool: evidence and lessons learned from South Asia" (2019). <https://wle.cgiar.org/insurance-agricultural-disaster-risk-management-tool-evidence-and-lessons-learned-south-asia>.

<sup>175</sup> See [www.acaps.org/special-report/outbreaks-east-africa-desert-locusts-and-COVID-19](http://www.acaps.org/special-report/outbreaks-east-africa-desert-locusts-and-COVID-19).

<sup>176</sup> See [www.ccrif.org](http://www.ccrif.org).

<sup>177</sup> World Bank, "Record high remittances sent globally in 2018".

<sup>178</sup> UNCDF, "National demand side surveys", [www.pfip.org/our-work/work-streams/market-information/national-demand-side-surveys](http://www.pfip.org/our-work/work-streams/market-information/national-demand-side-surveys).

<sup>179</sup> Asian Development Bank, "Disaster insurance in developing Asia: an analysis of market-based schemes" (2019).

<sup>180</sup> See [www.pfip.org/our-work/work-streams/financial-innovation/fiji-care-bundled-micro-insurance](http://www.pfip.org/our-work/work-streams/financial-innovation/fiji-care-bundled-micro-insurance).



is yielding greater efficiency for both insurers and customers and expanding the provision of services to marginalized segments.<sup>181</sup>

## DIGITAL FINANCE BOLSTERS NATIONAL PLANS FOR CLIMATE DISASTER RISK FINANCING

Natural hazards such as cyclones, droughts, earthquakes and tsunamis have a significant economic impact, not just at an individual level, but also on the budgets of low- and middle-income countries. In the Pacific, Category 5 cyclones and droughts have increased in the past five years.<sup>182</sup> Fiji, Tonga and Vanuatu have been disproportionately affected by the devastation. Countries in South and South-East Asia, the Caribbean and sub-Saharan Africa are also vulnerable to various natural disasters. Given the potential for these events to cause large-scale losses and the resulting financial implications, Climate Disaster Risk Financing (CDRF) country strategies are needed as part of an integrated National Disaster Risk Management strategy.

In partnership with the United Nations Development Programme and the United Nations University-Institute for Environment and Human Security, UNCDF is pioneering an initiative in the Pacific, to develop market-based CDRF instruments targeting micro- and meso-level beneficiaries who include individuals, households, communities, small businesses, associations and cooperatives.<sup>183</sup> The plan is for this initiative to develop, test and scale hybrid financial instruments, including indemnity insurance, parametric insurance and savings, to offer a unique combination of solutions aimed at protecting against risks, both climate change-induced and otherwise. Given the challenges of the geographical spread across the many archipelagos of the Pacific and the need to keep costs low, digital solutions will be deployed for onboarding and claim payments. UNCDF will also work with governments and regulators to create an enabling environment for deploying innovative hybrid financial products, as part of CDRF country strategies.

While the initial testbed for this initiative will be the Pacific, the experience gained will be replicated in other countries in Asia, Africa and the Caribbean. By combining relevant technical expertise in insurance, digital financial services, last-mile distribution models and policy and regulatory interventions, UNCDF offers a radically new approach to climate and disaster risk financing needs. The overall strategy is to empower consumers through enhanced financial and digital competencies, as well as blended financing instruments, by deploying market-based inclusive insurance solutions in least developed countries and developing markets.

## CLIMATE ACTION INCLUDES INCLUSIVE INSURANCE AND RISK FINANCING

Climate action (Sustainable Development Goal 13) must include climate disaster risk financing and insurance because it enables marginalized people, communities and countries to mitigate the effects of climate-related disasters and strengthen other coping efforts.<sup>184</sup> Leveraging digital technology, especially following the accelerated shift to digital services during the COVID-19 pandemic, creates a clear pathway for taking urgent action. With enabling policy and regulation in place,<sup>185</sup> there are good prospects that the innovative initiatives described here aimed at making insurance and remittances more relevant and inclusive can be replicated.



<sup>181</sup> See [www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/05/Agricultural\\_Insurance\\_for\\_Smallholder\\_Farmers\\_Digital\\_Innovations\\_for\\_Scale.pdf](https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/05/Agricultural_Insurance_for_Smallholder_Farmers_Digital_Innovations_for_Scale.pdf).

<sup>182</sup> See [https://humanitarianadvisorygroup.org/wp-content/uploads/2021/03/EmergingHumIssuesBrief\\_Pacificfinal.pdf](https://humanitarianadvisorygroup.org/wp-content/uploads/2021/03/EmergingHumIssuesBrief_Pacificfinal.pdf).

<sup>183</sup> Micro-level beneficiaries refer to individuals, while meso-level beneficiaries are groups such as farmers associations and cooperatives who together have greater buying power for insurance cover.

<sup>184</sup> See [www.greenfinanceplatform.org/sites/default/files/downloads/resource/Inclusive%20Insurance%20and%20the%20Sustainable%20Development%20Goals\\_GIZ%20.pdf](https://www.greenfinanceplatform.org/sites/default/files/downloads/resource/Inclusive%20Insurance%20and%20the%20Sustainable%20Development%20Goals_GIZ%20.pdf).

<sup>185</sup> See [www.unisdr.org/files/globalplatform/591d50243021aMaking\\_Climate\\_Risk\\_Insurance\\_Work\\_for\\_the\\_Most\\_Vulnerable\\_Seven\\_Guiding\\_Principles.pdf](https://www.unisdr.org/files/globalplatform/591d50243021aMaking_Climate_Risk_Insurance_Work_for_the_Most_Vulnerable_Seven_Guiding_Principles.pdf).



## BRIDGING THE DIGITAL DIVIDE

By Mats Granryd, Director General, GSMA

With 5.2 billion unique mobile subscribers worldwide, and more than 7 billion people<sup>187</sup> covered by a mobile network, mobile is increasingly being used to access life-enhancing services that contribute to the achievement of the UN Sustainable Development Goals (SDGs).

Globally, SDG 9 (Industry, Innovation and Infrastructure) remains the goal most impacted by the mobile industry. Since 2015, an additional 900 million people have been covered by a 3G network (currently 90 percent coverage) and an additional 2.2 billion have been covered by a 4G network (now 80 percent coverage). Mobile infrastructure is critical to spur inclusive and sustainable development, and greater innovation. The mobile industry's most improved score is against SDG 4 (Quality Education), which is also its second most impacted goal: 1.4 billion mobile subscribers used their phone to improve their education or that of their children in 2019 – an increase of 140 million users since 2017.

Mobile has had an enormous impact on financial inclusion, which cuts across multiple SDGs. Mobile money has helped reduce the financial exclusion gap in low- and middle-income countries (LMICs), with over 1 billion registered accounts at the end of 2019.<sup>188</sup> More women are using financial services, low-income households are accessing essential utility services and smallholder farmers are getting paid more quickly and conveniently. Millions of migrants and their families are experiencing the life-changing benefits of faster, safer and cheaper international remittances and humanitarian cash assistance is being delivered more thoughtfully to those in crisis situations.

Given the global reach of mobile, so much more can be done to leverage its power and further support the delivery of the SDGs. Crucial to this will be helping people realise the full benefits of using mobile and the

mobile internet to access health information, public services and digital payments, both in developed and developing countries. The full potential of mobile technologies and access to digital services cannot be realised without the active participation of governments and regulatory authorities, working with the private sector to enable vibrant, competitive markets and to help shape the digital environment that citizens want.

The GSMA does much research in this area, in order to connect the mobile ecosystem and overcome the challenges that countries face in bridging the digital divide, which now consists of a coverage gap of 600 million people who live in areas that are not covered by mobile broadband, and a usage gap of more than 3.4 billion people living in areas covered by mobile broadband but who are not using mobile internet services. If current trends continue, more than 40 percent of the population in LMICs will still be offline in 2025. Some challenges are overarching, such as the main barriers to mobile usage for men and women<sup>189</sup> in LMICs – affordability, literacy, digital skills, and safety and security. These barriers are often exacerbated for women, who face lack of family approval in many markets. Our Connected Women programme works to accelerate digital and financial inclusion for women, and most recently published a Practical Guide<sup>190</sup> for reaching women, for mobile operators, the public sector and NGOs.

We know that the digital divide can look very different across LMICs and global sub-regions. For example:

- In **Uganda**<sup>191</sup>, mobile network coverage is weakest in rural areas. Mobile operators, such as MTN Uganda, are working with key ecosystem players, like iSAT Africa, to test and evaluate new mobile internet connectivity solutions for unconnected rural communities, and the GSMA has worked with policymakers and UNCDF Uganda to incorporate mobile technology into the key objectives and focus areas of the Third National Development Plan (NDPIII).
- In **Bangladesh**<sup>192</sup>, 3G coverage has expanded from around 50 percent of the population, in 2014, to 95 percent. Yet 70 percent of those covered by mobile broadband networks do not use mobile internet services.

<sup>187</sup> GSMA, *The Mobile Economy 2020*, <https://www.gsma.com/mobileeconomy/>

<sup>188</sup> GSMA, *State of the Industry Report on Mobile Money 2021*, <https://www.gsma.com/sotir>

<sup>189</sup> GSMA, *The Mobile Gender Gap Report 2020*, <https://www.gsma.com/r/gender-gap>

<sup>190</sup> GSMA, *Reaching 50 Million Women with Mobile: A Practical Guide*, <https://www.gsma.com/mobilefordevelopment/reaching-women-with-mobile>

<sup>191</sup> GSMA, *Supporting the Growth of the Tech Start-Up Ecosystem in Uganda: A Policy Outlook*, <https://www.gsma.com/mobilefordevelopment/resources/supporting-the-growth-of-the-tech-start-up-ecosystem-in-uganda-a-policy-outlook>

<sup>192</sup> GSMA, *Bangladesh: Driving mobile-enabled digital transformation*, <https://www.gsma.com/mobilefordevelopment/resources/bangladesh-driving-mobile-enabled-digital-transformation>

- During the COVID-19 pandemic<sup>193</sup>, access to affordable digital content and services has been fundamental. Understanding the importance of data, mobile operators have made access to and use of the mobile internet more affordable, through temporary measures including discounts on tariffs and cost subsidies.
- In **Pakistan**<sup>194</sup>, through its National Dialogues programme, the GSMA has worked with the Ministry of Information Technology and Telecommunication to advance digital and economic inclusion through mobile.
- Across Uganda, tech hubs and innovators are benefiting from greater collaboration with mobile operators, accelerating the development of new content and services. MTN Uganda provides access to its Mobile Money Access Programming Interface (API), enabling entrepreneurs to develop financial and transactional applications that enhance financial inclusion by offering tailored payment options. The GSMA has worked with UNCDF and Start-Up Uganda to promote a healthy innovation ecosystem.
- Digital platforms are used in **Pakistan** to increase engagement, improve service delivery to citizens, and deliver good governance, alongside the government's digital policy to transform the country into a knowledge-based economy. In 2014, UNICEF, in partnership with Telenor Pakistan and the provincial governments of Sindh and Punjab provinces, commissioned a pilot to test how mobile technology augments the traditional, paper-based birth registration process.
- **Ghana**<sup>195</sup> is facilitating the provision of digital identity, critical for the population to access services such as health care, education, employment, financial services and voting. Tigo Ghana has worked with partners to digitize the registration process and make it more efficient and cost effective.
- **Bangladesh** is improving productivity for farmers with mobile platforms that provide up-to-date agricultural information on market prices,

production techniques and weather forecasts. Grameenphone and Robi provide mAgri services with seasonal agricultural content for crops and livestock.

- **And across the Pacific Islands**<sup>196</sup>, where, at the end of 2018, mobile internet penetration was the lowest of any region in the world, the mobile ecosystem is working to overcome issues around infrastructure and spectrum assignment and affordability.

Addressing the digital divide across LMICs requires collaboration between players from across the mobile ecosystem, as well as a supportive regulatory and policy environment that encourages investment and innovation. A number of bodies, including the World Bank and the GSMA, are highlighting the importance of collaboration and harmonization in both telecoms and broader ICT regulation, and catalysing essential work within the Mobile for Development portfolio and Public Policy programme.

Whilst we should celebrate the strong progress that the mobile industry has made in contributing to the SDGs over the past five years, there is no denying the fact that as a society we are currently not on track to achieve the 2030 targets.<sup>197</sup> Mobile technology remains at the very centre of how we address our most significant global challenges, such as COVID-19, which has led to the increased vulnerability of those who suffer the digital divide.

In emerging markets, where mobile is the primary access technology but the mobile adoption rate is lower than in developed markets, we are seeing that the poorest and most vulnerable people are disproportionately affected by this pandemic. Mobile operators have continued to innovate in addressing the digital divide, providing data for access to vital information, including health and education, regardless of geography.

Right now, we must commit to do more and to do it faster. We need to extend mobile connectivity to those that remain offline, whether due to lack of access or the more critical lack of usage. In this ever-changing and uncertain world, revived and collaborative partnerships across different industries and the public and private sectors have never been more necessary to our future.

<sup>193</sup> GSMA, *Keeping Bangladesh connected: The role of the mobile industry during the COVID-19 pandemic*, <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/12/Keeping-Bangladesh-connected-The-role-of-the-mobile-industry-during-the-COVID-19-pandemic.pdf>

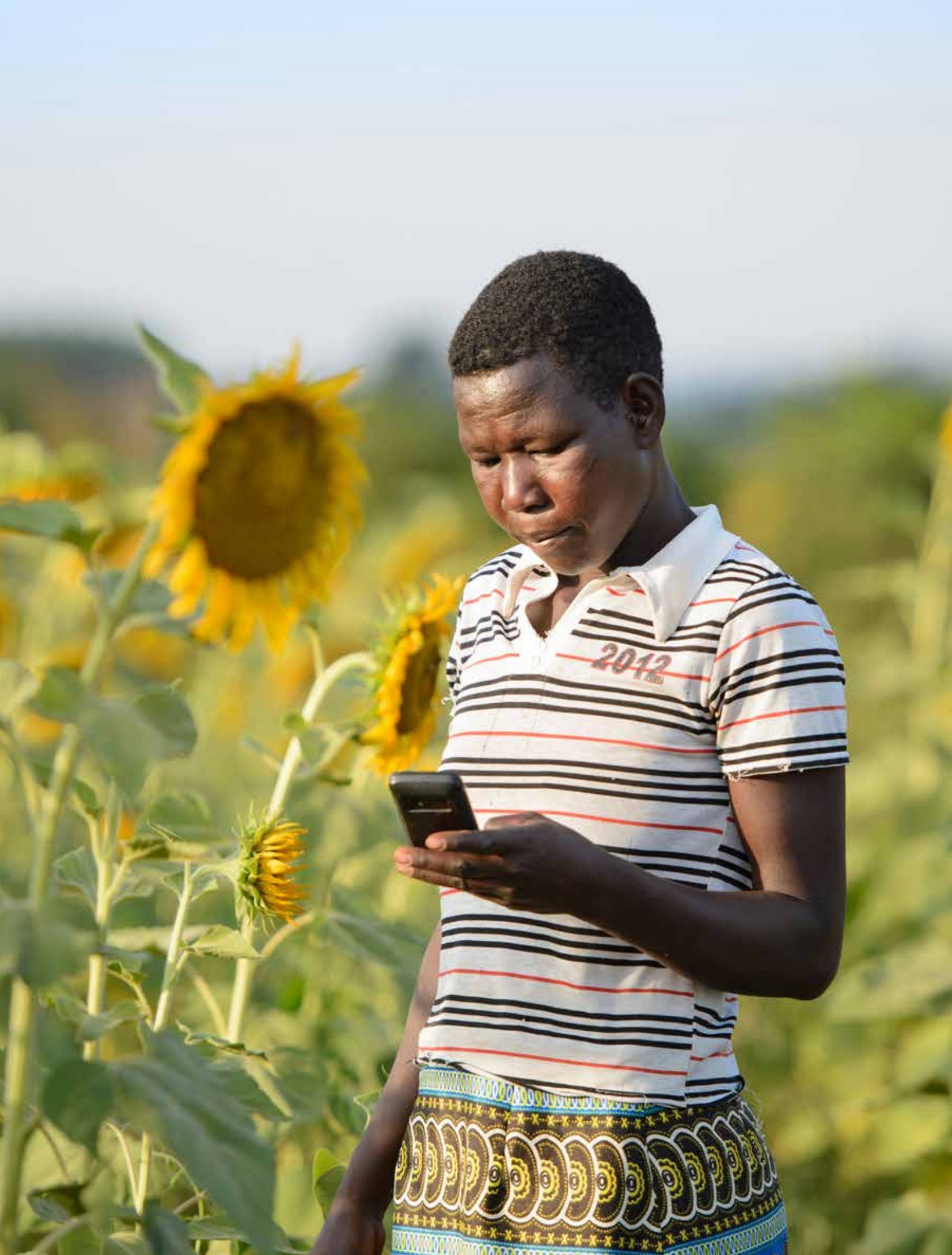
<sup>194</sup> GSMA, *The power of mobile to accelerate digital transformation in Pakistan*, <https://www.gsma.com/mobilefordevelopment/resources/the-power-of-mobile-to-accelerate-digital-transformation-in-pakistan>

<sup>195</sup> GSMA, *Country overview: Ghana*, <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/05/Ghana-Country-Overview.pdf>

<sup>196</sup> GSMA, *The Mobile Economy Pacific Islands 2019*, <https://www.gsma.com/mobileeconomy/pacific-islands>

<sup>197</sup> GSMA, *2020 Mobile Industry Impact Report*, <https://www.gsma.com/betterfuture/2020sdgimpactreport>









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## PART 4

# WHAT MODELS TO FINANCE INCLUSIVE DIGITAL ECONOMIES

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## SECTION 4.1

# HOW DO DIGITAL FINANCE INNOVATIONS REVOLUTIONIZE THE FINANCING OF THE SDGS?

By Henri Dommel



## HIGHLIGHTS

- The gap in financing to reach the SDGs was estimated at US\$2.5 trillion per year until 2030 for developing countries; the present COVID-19 crisis will considerably widen this financing gap, due to the socio-economic consequences of the pandemic. Still, digital finance can help to bridge this gap by: (i) transforming how finance can be mobilized to support the SDGs (ii) transforming how finance can be channeled to the economic sectors and populations that need it most, at scale and very low cost (iii) creating the incentives for further investments in areas where that impact is greatest.

Over the past 10 years, the digitalization of finance has been a major driver of financial inclusion. For the first time the number of registered digital accounts had surpassed the 1 billion mark in 2019.<sup>198</sup> At the same time, digitally-enabled products and market innovations have enabled the growing integration of digital financial services with access to other services in the 'real economy', for example in health and education, in clean energy, climate-smart agriculture and for entrepreneurs. The digital finance revolution therefore offers the potential for a stronger alignment of finance

with the Sustainable Development Goals (SDGs) in ways that were simply not possible before, linking access to finance with national priorities such as better education, health care, improved agricultural practices or access to markets. Digital finance also uniquely contributes to the financing of the SDGs.

The gap in financing to reach the SDGs was estimated at US\$2.5 trillion per year until 2030 for developing countries;<sup>199</sup> the present COVID-19 crisis will considerably widen this financing gap, due to

<sup>198</sup> See [www.gsma.com/mobilefordevelopment/resources/state-of-the-industry-report-on-mobile-money-2019/](http://www.gsma.com/mobilefordevelopment/resources/state-of-the-industry-report-on-mobile-money-2019/).

<sup>199</sup> UNCTAD, "Developing countries face US\$2.5 trillion annual investment gap in key sustainable development sectors", 24 June 2014, <https://unctad.org/en/pages/PressRelease.aspx?OriginalVersionID=194>.

the socioeconomic consequences of the pandemic. Still, digital finance can help to bridge this gap and significantly contribute to the financing the SDGs in three major ways:

- i. by transforming how finance can be *mobilized* to support the SDGs
- ii. by transforming how finance can be channeled to the economic sectors and populations that need it most, at scale and very low cost
- iii. through the possibility that it offers to *monitor* the impact of those financial flows in relation to the SDGs, creating the incentives for further investments in areas where that impact is greatest.

## HOW FINANCE CAN BE MOBILIZED IN SUPPORT OF THE SDGS

The rapid expansion of digital finance in the past 10 years has profoundly transformed the possibilities of mobilizing finance and, ultimately, the way the world's citizens invest, as highlighted in the interim edition of the United Nations Secretary-General's Report on the Digital Financing of the SDGs.<sup>200</sup> Digital finance has drastically reduced the cost of last mile distribution, providing almost half a billion citizens<sup>201</sup> with access to accounts at formal institutions that can be used for savings and as an alternative to hiding cash under their mattress. Due to the efforts of UNCDF and others supporting market development in countries such as Zambia, Senegal, Benin and Nepal, the share of adults using digital financial services has increased from as low as 2 percent of the adult population to up to 44 percent during the 5 years to 2019.<sup>202</sup>

A deteriorating fiscal outlook and debt burden for many developing countries stemming from the COVID-19 pandemic has deepened concern about how to fund the SDGs. Mobilizing domestic savings and domestic

sources of capital in general has become a priority. Innovations in agent banking and alternative delivery channels have made it possible to mobilize and channel informal savings at scale into the formal financial system. We are already seeing promising momentum in savings mobilization: over the past 20 years, the global savings pool has grown from \$7.5 trillion to \$23.3 trillion.<sup>203</sup>

Digital finance is also enabling longer-term savings by, in parallel, providing people with flexibility to meet unexpected liquidity needs. UNCDF supported the Solomon Islands National Provident Fund to launch a zero-fee and mobile-based pension savings product that now serves more than 5 percent of the population.<sup>204</sup> It uses airtime top-up to make deposits affordable and convenient, and enables partial withdrawals when needed. Communities living across many islands can now use the YouSave product for their long-term savings needs.

Digital innovation is also accelerating the formalization of remittance flows, which contributes to the macroeconomic stability of developing countries and supports their progress towards the SDGs. The COVID-19 crisis is predicted to reduce the international flow of remittances by an estimated 20 percent (US\$120 billion) in 2020, according to the World Bank.<sup>205</sup> However, use of digital remittance services has grown during this time. They are offered at lower cost (and often lower risk) and contribute to the formalization of remittance flows.<sup>206</sup>

Digital remittance flows directly benefit migrants and their families, by lowering costs, linking remittances to services offered in digital platforms, or creating a financial transaction 'history'. In Nepal, UNCDF has partnered with a commercial bank, Laxmi Bank, to build on its doorstep collection services, whereby female staff with tablets collect daily earnings from customers' homes and shops. With UNCDF's support, this doorstep service has been leveraged to collect remittances and link these cash inflows to other financial services.<sup>207</sup> This has contributed to increased savings and enabled savers to develop profiles with the bank, which are

<sup>200</sup> See [www.undp.org/content/undp/en/home/news-centre/news/2019/United\\_Nations\\_Secretary-General\\_task\\_force\\_issues\\_interim\\_report\\_of\\_findings\\_on\\_power\\_of\\_fintech\\_to\\_advance\\_sustainable\\_development.html](https://www.undp.org/content/undp/en/home/news-centre/news/2019/United_Nations_Secretary-General_task_force_issues_interim_report_of_findings_on_power_of_fintech_to_advance_sustainable_development.html).

<sup>201</sup> Over 515 million adults gained some form of formal account in the three years to 2018 alone. See <https://globalfindex.worldbank.org>.

<sup>202</sup> See [www.uncdf.org/article/5317/five-years-of-market-development-in-benin-senegal-and-zambia-2015-2019](https://www.uncdf.org/article/5317/five-years-of-market-development-in-benin-senegal-and-zambia-2015-2019).

<sup>203</sup> World Bank data, 1998–2018, <https://data.worldbank.org/indicator/NY.GDS.TOTL.CD>. As referenced in the Digital Finance Task Force <https://digitalfinancingtaskforce.org/wp-content/uploads/2020/08/DF-Task-Force-Full-Report-Aug-2020-1.pdf>.

<sup>204</sup> See [www.uncdf.org/article/6412/yousave-lomobile-leveraging-the-use-of-mobile-tech-to-save-for-retirement-in-solomon-islands](https://www.uncdf.org/article/6412/yousave-lomobile-leveraging-the-use-of-mobile-tech-to-save-for-retirement-in-solomon-islands).

<sup>205</sup> See [www.worldbank.org/en/news/press-release/2020/04/22/world-bank-predicts-sharpest-decline-of-remittances-in-recent-history](https://www.worldbank.org/en/news/press-release/2020/04/22/world-bank-predicts-sharpest-decline-of-remittances-in-recent-history).

<sup>206</sup> A study commissioned by UNCDF from the International Association of Money Transfer Operators in 2020 showed that, as a result of the COVID-19 crisis, the top priority of the operators was to accelerate the offering of digital remittance channels, which will in turn increase the percentage of remittances provided through formal channels.

<sup>207</sup> See [www.cgap.org/blog/turning-remittances-savings-nepals-migrant-families](https://www.cgap.org/blog/turning-remittances-savings-nepals-migrant-families).

assessed when they want to access uncollateralized loans.<sup>208</sup> The formalization of remittances is linked to financial products that can help the families of remittance senders to save for the long term or to invest, for example, in their business. In addition, the formalization of remittance flows through digital channels has macroeconomic benefits for recipient countries' balance of payments, improving their credit risk and lowering the cost of their international borrowing. Retail investments are an emerging channel for the mobilization of capital in developing countries, especially through the use of crowdfunding platforms (as subsequent papers highlight). Digital finance can also support the fight against illicit financial flows and tax evasion, increasing the amount of financing available in public finance for the SDGs.

## HOW FINANCE CAN BE CHanneled WHERE IT IS MOST NEEDED

Digital technology can facilitate the reinvestment of savings into long-term investments in key socio-economic infrastructure (such as roads, schools and health centres) and even localize those investments in districts where local savers would directly benefit from improved services, with additional economic effects as dividends flow to them.

The approach of connecting digital savings to reinvestments by local governments in key socioeconomic infrastructures is being tested by UNCDF and the United Nations Development Programme with the Government of Bangladesh and has the potential to be scaled up nationally, as well as in other countries, if successful. Citizens' savings pool in Bangladesh in 2020 amounted to more than US\$140 billion (including US\$72 billion of formal savings, US\$45 billion of informal savings and US\$20 billion in the form of remittances). Digital finance offers the potential to transform Bangladeshi citizens from micro-savers to micro-investors, enabling the aggregation of those savings at very low cost and with the guarantee of the Central Bank, into investment instruments that could fund the socio-economic infrastructure that would directly improve the lives of citizens. Bangladesh's FY18–19 infrastructure budget stood at US\$20 billion, 64 percent of which was financed through external borrowing, and this budget is expected to grow substantially by 2030 due to SDG requirements. Harnessing domestic savings could

help to both lower the dependence on external debt and strengthen Bangladeshi citizens' stakes and ownership of those investments. More generally, connecting national SDG priorities and digital financing opportunities offers tremendous scope for growth and is an area currently advanced by UNCDF.

Over the past decade, we have seen the emergence of new actors – who are often not from the world of finance – as the major drivers of access to finance for micro, small and medium enterprises (MSMEs) and the missing middle in general. For example, disruptive 'fintech' actors have advanced sophisticated algorithmic approaches to consumer and micro, small and medium enterprise (MSME) lending decisions through the use of expanded data sets, enabling hundreds of millions to access financing. In sub-Saharan Africa, mobile money providers are extending their digital credit offerings to mobile money agents, who are essentially local MSMEs. In Latin America, Mercado Libre, an ecommerce platform, is providing loans to MSMEs that would not have been eligible based on traditional credit bureau information. In Bangladesh, various fintechs, such as UNCDF partner TallyKhata, are offering collateral-free credit lines based on the digitization of MSME's ledgers. In China, MYbank is using Alipay's technology to perform cost-effective, real-time credit assessments of millions of MSMEs. Globally, e-commerce platforms such as Alibaba have become major lenders to MSMEs trading through them, and ride-hailing platforms are increasingly financing both the drivers and merchants in their ecosystems. Eco-Cash, one of the members of the United Nations Secretary General's Task Force on the Digital Financing of the Sustainable Development Goals, has launched an initiative to promote an alternative investment platform to finance for more mature MSMEs, such as those that are small and medium enterprises (SMEs). As part of this, UNCDF is helping to set up an SME exchange that leverages alternative data to create investment profiles on enterprises and bridge the financing gap between high-potential MSMEs that need stable, longer-term funding and investors.

In short, digital solutions can now aggregate credit demand in ways that were previously impractical (especially for MSMEs), offer risk assessment through alternative credit scoring by leveraging digital data, and structure investment offerings and access to capital in a variety of new ways.

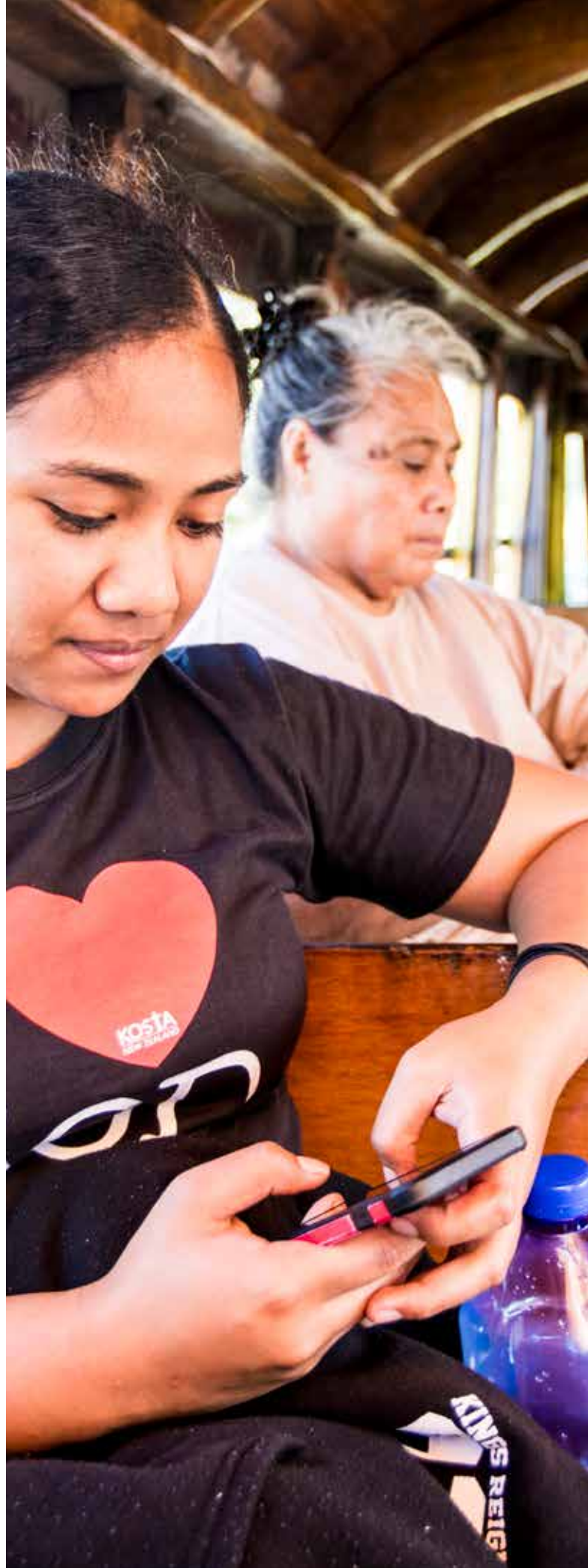
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<sup>208</sup> See [www.oecd-ilibrary.org/sites/af1738af-en/index.html?itemId=/content/component/af1738af-en](http://www.oecd-ilibrary.org/sites/af1738af-en/index.html?itemId=/content/component/af1738af-en).



## HOW DIGITAL TECHNOLOGY CAN HELP TO MONITOR THE IMPACT OF INVESTMENTS IN THE SDGS

The exponential growth in data gathering and processing, which is being enabled by the digital revolution, has a profound impact on how investments decisions are identified and monitored. In addition to improving risk pricing, data are also helping to increase both the alignment and impact monitoring of investment decisions in terms of their support to the SDGs. Digital platforms, such as the Future of Sustainable Data Alliance, are advancing data-driven approaches to the effective integration of environmental, social and governance-related (ESG) factors into decision-making processes and greater incorporation of SDG-related risks and impacts in financing decisions. Demand for ESG investments is surging around the world. Digital is empowering citizens to decide how their money is invested, as well as how it is spent, in order to align with the Sustainable Development Goals. The opportunity for LDC governments is to leverage this demand and opportunity to channel financing into domestic projects that will benefit local communities.







## UNPRECEDENTED CRISIS MEETS HISTORIC OPPORTUNITY: HARNESSING COVID-19'S DIGITAL DIVIDEND IN FINANCING THE SDGS

By Simon Zadek was the head of the Secretariat of the UN Secretary-General's Task Force on Digital Financing and the SDGs, and Special Advisor on Finance to the Deputy Secretary-General

Digital is the clear winner from the unprecedented COVID-19 crisis. There is no doubt that the pandemic has catapulted us into a digital future, as hundreds of millions of people have migrated to the world of bytes to socialize, work and consume. COVID-19's digital dividend in achieving the Sustainable Development Goals (SDGs) could be huge, from helping to deliver our climate goals to improved health and education access.

Whether we get this dividend depends on how digitalization reshapes finance. Whether digitalization underpins a transition to a low carbon, climate resilient, and more inclusive development pathway depends on whether it returns "the financial services industry to what it is supposed to be - an industry that serves people" as IMF's Managing Director, Kristalina Georgieva [noted](#) in January 2020. The digital dividend will be positively transformative if digitalization can help deliver on the call by Mark Carney, now the United Nations Special Envoy for Climate Action and Finance, to [reset finance](#) in establishing a "sustainable financial system to stop runaway climate change".

The global financial system must deliver in financing the SDGs, that reflect the collective needs of the world's citizens - the ultimate owners of the world's financial assets.

### Digitalization can make a difference if it can support this outcome.

With this in mind, the UN Secretary-General established his [Task Force on Digital Financing of the SDGs](#) (Task Force) in late 2018. He asked its 17 [extraordinary members](#), leaders

drawn from the worlds of finance, technology, governance, and development to "make recommendations and catalyse action to harness digitalization in financing the SDGs".

Almost two years later, in August 2020, in a world transformed by COVID-19, the Task Force released [People's Money: Harnessing Digitalization to Finance the SDGs](#). This landmark report:

- Maps, for the first time, the many hundreds of innovative developments around the world at the nexus of digital, finance and sustainable development, leveraging big data, artificial intelligence, blockchain, and of course mobile platforms.
- Points to five multi-trillion dollar catalytic opportunities for harnessing digitalization in aligning finance with the SDGs, spanning the most complex domains of the world's capital markets to the dollars borrowed daily by market traders in Nairobi through their mobile devices.
- Sets out an Action Agenda focused on accessing such opportunities, building national sustainable digital finance ecosystems and building a more inclusive international financial governance.

The Task Force sets out how, for example, digitalization can help channel the huge growth in domestic savings, rising three fold over two decades to US\$23 trillion in 2019, into long-term development investment. The potential of this recommendation is exemplified in practice by an initiative in Bangladesh, one of seven Pathfinder Initiatives advanced by the Task Force together with the United Nations Development Programme (UNDP) and the United Nations Capital Development Fund (UNCDF). The initiative is focused on using digital rails to aggregate the savings of many Bangladeshis into large-scale capital pools to invest in sustainable infrastructure, using blockchain to increase the transparency and effective use of such funds. By substituting domestic savings for international capital in this manner, Bangladesh (and many other countries) could reduce the cost of financing sustainable infrastructure by an estimated 20 percent, secure multiplier and equity effects by paying dividends to its citizens rather than external financial institutions, and give citizens a more active voice in deciding what their savings should be used for and holding those to account who use their savings on their behalf.

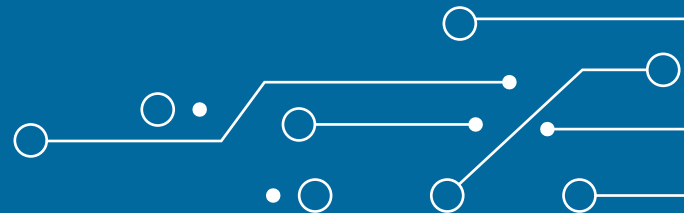
Similarly, the Task Force highlights the role of digitalization in extending the volume of environmental, social and corporate governance (ESG) directed financial assets from the current level of US\$30 trillion across the world's US\$185 trillion capital markets. It illuminates how digital can increase the transparency and accountability of public finance that accounts for about 20 percent of global

spending. It shows us how algorithmic lending can unlock the US\$5 trillion annually needed to finance small and medium enterprises (SMEs), the source of much of the world's employment and livelihoods.


























The Task Force's key message to world leaders in *People's Money* is that digitalization will be a force for good if it delivers citizen-centric finance. As co-Chair *Maria Ramos*, ex-CEO of Absa in South Africa, remarked *at the report launch*, "We have an historic opportunity to accelerate and expand the transformative impact of digitalization... extending the boundaries of financial inclusion by empowering citizens as savers, investors, borrowers, lenders and tax-payers in a way that gives them choice and power over their money".

Set against this potential, the Task Force recognizes the barriers and risks involved. As well as exclusionary gaps in digital infrastructure and an unequal distribution of skills, digitalization risks perpetuating discrimination against

women and other groups. Moreover, it presents new possibilities for data-security breaches, embezzlement, and fraud, and could intensify short-termism and market concentration. The Task Force's Action Agenda points to these risks and ways in which its recommendations can help to overcome or at least mitigate them. Moreover, several Pathfinder Initiatives have been introduced by the Task Force to advance practical action in addressing such risks and barriers. For example, the Dialogue on Global Digital Finance has been launched to increase the consideration of developing country interests and the SDGs in the future governance of 'Big Fintech' platforms that are emerging globally as tomorrow's financial force.



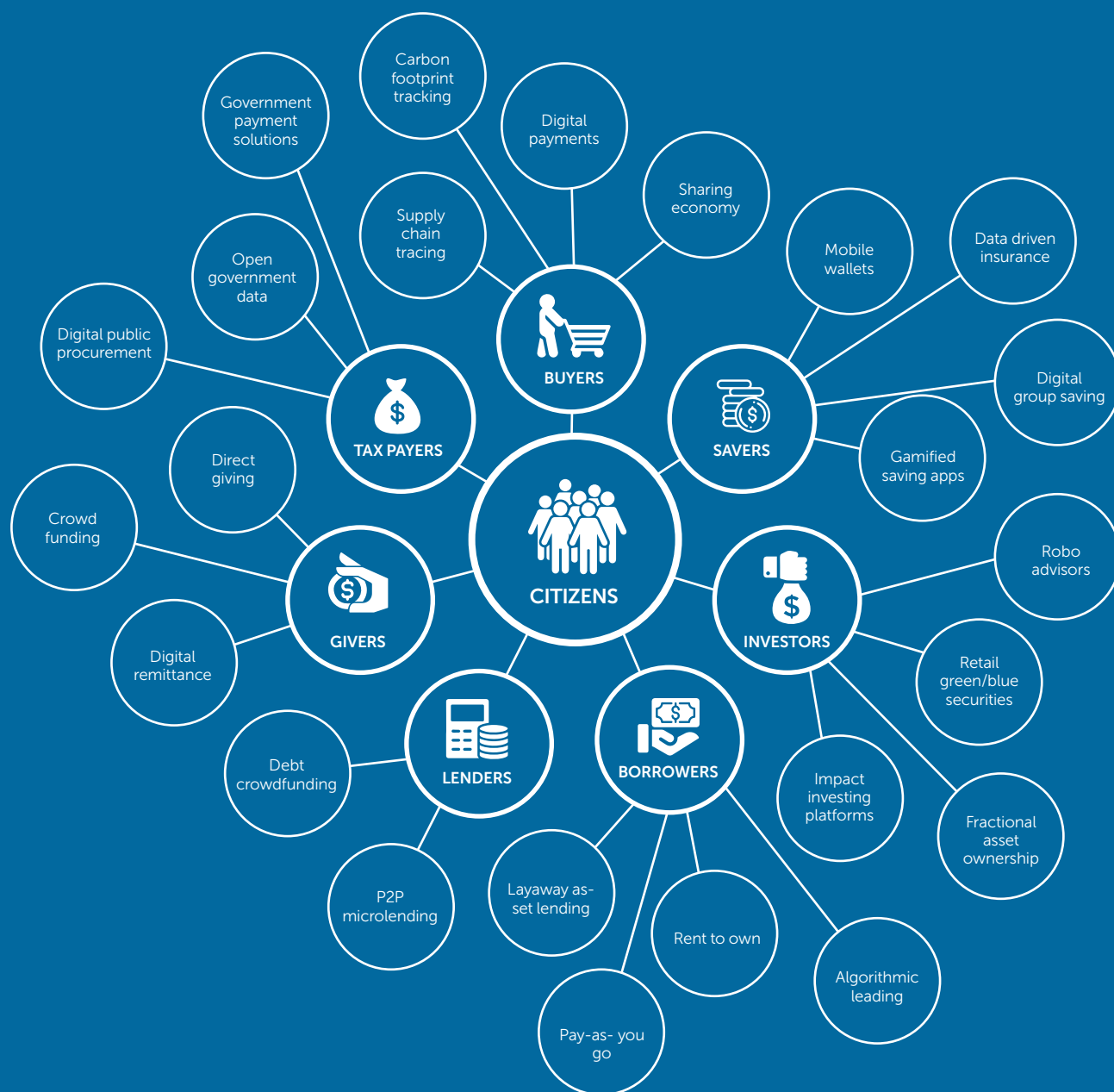
**FIGURE 19.**  
The opportunities for digitalization

Opportunities	 Channel domestic savings into development financing	 Enhance financing for small and medium-sized businesses (SMEs)	 Digitize public financing and make public budgets and contracts transparent	 Embed SDGs into decisions financial and capital markets	 Shape consumption decisions through improved information and choice architecture
Scale	Global savings pool has grown over two decades from US\$7.5 to US\$23.3 trillion.	Potential to meet the US\$5.2 trillion a year need for SME financing in developing countries.	Governments in developing countries could gain US\$220 to US\$320 billion annually from digitalizing payments.	The outstanding value of global equity and bond markets is US\$185 trillion.	Annual global consumption expenditure is US\$47 trillion.
SDG	 6 CLEAN WATER AND SANITATION  7 AFFORDABLE AND CLEAN ENERGY  9 INDUSTRY, INNOVATION AND INFRASTRUCTURE  11 SUSTAINABLE CITIES AND COMMUNITIES	 1 NO POVERTY  5 GENDER EQUALITY  8 DECENT WORK AND ECONOMIC GROWTH  10 REDUCED INEQUALITIES	 1 NO POVERTY  3 GOOD HEALTH AND WELL-BEING  4 QUALITY EDUCATION  16 PEACE, JUSTICE AND STRONG INSTITUTIONS	 7 AFFORDABLE AND CLEAN ENERGY  9 INDUSTRY, INNOVATION AND INFRASTRUCTURE  11 SUSTAINABLE CITIES AND COMMUNITIES  13 CLIMATE ACTION	 11 SUSTAINABLE CITIES AND COMMUNITIES  12 RESPONSIBLE CONSUMPTION AND PRODUCTION  14 LIFE BELOW WATER  15 LIFE ON LAND
Citizens as..	Small savers and co-beneficiaries of sustainable infrastructure	Borrowers, entrepreneurs, employees	Tax-payers, voters, public service users	Savers, investors	Consumers, asset owners

As Patrick Njoroge, Kenya's Central Bank Governor, Task Force member and co-Chair of the Dialogue, notes "...the COVID-19 crisis is a tragedy. But it is also an opportunity for change. After decades of rising inequality and unsustainable investment, we have the tools and know-how to do better. We just need the will to use them".

The choice is ours, let's make sure COVID-19 digital dividends shape the world we want to live in.

**FIGURE 20.**  
Delivering citizen-centric finance



## SECTION 4.2

# DIGITAL FINANCE IS CHANGING THE LANDSCAPE OF ACCESS TO CAPITAL

By Henri Dommel and Rajeev Kumar

## HIGHLIGHTS

- Digital finance can play a critical role in narrowing this financing gap by channelling finance to businesses advancing the SDGs and by raising domestic savings from citizens. Governments around the world can embrace this digital opportunity.

An additional US\$2.5 trillion per year is required to achieve the Sustainable Development Goals (SDGs) in developing countries by 2030.<sup>209</sup> This financing is available,<sup>210</sup> at a time when the gross world product and global gross private sector financial assets are estimated at more than US\$80 trillion and US\$200 trillion, respectively.<sup>211,212</sup>

Digital finance can play a critical role in narrowing this financing gap by channelling finance to businesses advancing the SDGs and by raising domestic savings from citizens. Governments around the world can embrace this digital opportunity. Two emergent 'pathfinder' initiatives, inspired by the United Nations Secretary-General's Digital Finance Task Force

recommendations,<sup>213</sup> illustrate how public-private partnerships are taking shape to narrow the financing gap with digital finance. Although they are in the pilot phase, these initiatives demonstrate how digital finance could support enterprise growth and engage citizens in new ways.

<sup>209</sup> United Nations Conference on Trade and Development, *World Investment Report 2014*.

<sup>210</sup> See [www.un.org/sustainabledevelopment/sg-finance-strategy/](http://www.un.org/sustainabledevelopment/sg-finance-strategy/).

<sup>211</sup> "World Bank Databank" (2017).

<sup>212</sup> "Allianz Global Wealth Report" (2018).

<sup>213</sup> See [www.un.org/en/digital-finance-taskforce](http://www.un.org/en/digital-finance-taskforce).

# PATHFINDER CASE

## STUDY 1: MOBILIZING DOMESTIC SAVINGS WITH DIGITAL FINANCE FOR REINVESTMENT IN LOCAL ECONOMIC DEVELOPMENT IN BANGLADESH

Financing to support infrastructure development, decarbonization and other investments critical to reaching the SDGs in many least developed countries is not yet sufficiently mobilized. Not only is more financing needed, but it needs to be mobilized inclusively, so that citizens are empowered to become stakeholders in decision-making and ownership, and they benefit from the returns of such investments.<sup>214</sup> Over the past two decades, the global savings pool has tripled to US\$23.3 trillion,<sup>215</sup> while domestic savings in LDCs have grown 15-fold to US\$218 billion. The progress achieved in growing domestic savings in LDCs needs to be accelerated. Digital financing solutions that enable citizens to invest their (micro) savings in local green or sustainable infrastructure have been identified by the United Nations Secretary-General's Task Force on Digital Financing for the SDGs as a catalytic opportunity for the United Nations system to take forward.

Bangladesh is seizing this opportunity through its Aspire to Innovate (a2i) initiative, which is implemented by the Information and Communication Technology Division of the Government of Bangladesh, together with the United Nations Development Programme and UNCDF. The a2i partners are currently designing the various aspects of this pilot project. The objective is to harness digital finance to tap into and mobilize savings for investments and empower citizens to align finance with their priorities. With 99 percent of Bangladeshis covered by 2G mobile connectivity, more than 40 million using smartphones, and 39 million digital finance accounts, the country has an unprecedented opportunity to mobilize citizen micro-savings at scale.

Bangladesh requires at least an estimated US\$133 billion by 2030 to meet its SDG investment requirements,<sup>216</sup> in addition to US\$74 billion for infrastructure spending.<sup>217</sup>

The COVID-19 pandemic and any related economic recessions may further increase the SDG budget required.

At present, 52 percent of the infrastructure budget is financed from domestic sources, with the balance from external sources, such as official development assistance, concessional loans and non-concessional loans from the international capital markets. Bangladesh's upgraded economic status would result in a decline in funding from multilateral donors, while also pushing the interest rates on debts higher. For this reason, the Government is prioritizing the use of digital finance to mobilize domestic savings.

Formal savings by Bangladeshi citizens stood at US\$54 billion in 2019; this is expected to double by 2030 as the economy grows. Digital finance is predicted to play a critical role in encouraging savings and channelling domestic capital for long-term domestic investment. Digitalization allows micro-savings from the informal sector to become part of the formal financial system, and gives those already using the financial system more options.<sup>218</sup> If savings can be aggregated and deployed through a digital financial value chain from 2020 onwards, an incremental US\$45 billion annually can be mobilized domestically to finance the SDGs.

Financial instruments and mechanisms, such as securitization, impact bonds, microinsurance, and crowdfunding, can layer on top of the digital financial value chain to aggregate micro-savings at scale and channel investment into the SDGs (see Figure 21). For example, a citizen can invest in the construction of a bridge or road, or health care or education, or renewable energy facilities, and will later be paid back from the earning proceeds (i.e. in the form of a Susuk, a financial certificate issued in accordance with Shariah principles). To achieve this, a government authorized fund manager can deploy the fund for a 1.5–2 percent fund management fee. The fund would finance the Government, resulting in a low-cost source for long-term financing. The mechanism benefits citizens in several ways, giving them more direct access to investment opportunities in the infrastructure that they need and returns equal to or greater than they achieve through banks, as well as transparency and accountability.

This raises the possibility of increasing the proportion of long-term development financing needs being met from domestic resources through accessible savings products linked to local sustainable investment. Such an approach has the potential to reduce the cost of capital, as well as international debt burdens, and vulnerability to foreign exchange movements. The ultimate goal of this model is to empower citizens by ensuring equitable returns.

<sup>214</sup> UN Secretary-General's Task Force on Digital Finance, *People's Money: Harnessing Digitalization to Finance a Sustainable Future* (Geneva, 2020). See [www.un.org/en/digital-financing-taskforce](https://www.un.org/en/digital-financing-taskforce).

<sup>215</sup> World Bank data, 1998–2018, <https://data.worldbank.org/indicator/NY.GDS.TOTL.CD>.

<sup>216</sup> See [www.un.org/ldcportal/uncdf-oecd-report-focuses-on-potential-of-blended-finance-for-ldcs-response-to-COVID-19](https://www.un.org/ldcportal/uncdf-oecd-report-focuses-on-potential-of-blended-finance-for-ldcs-response-to-COVID-19).

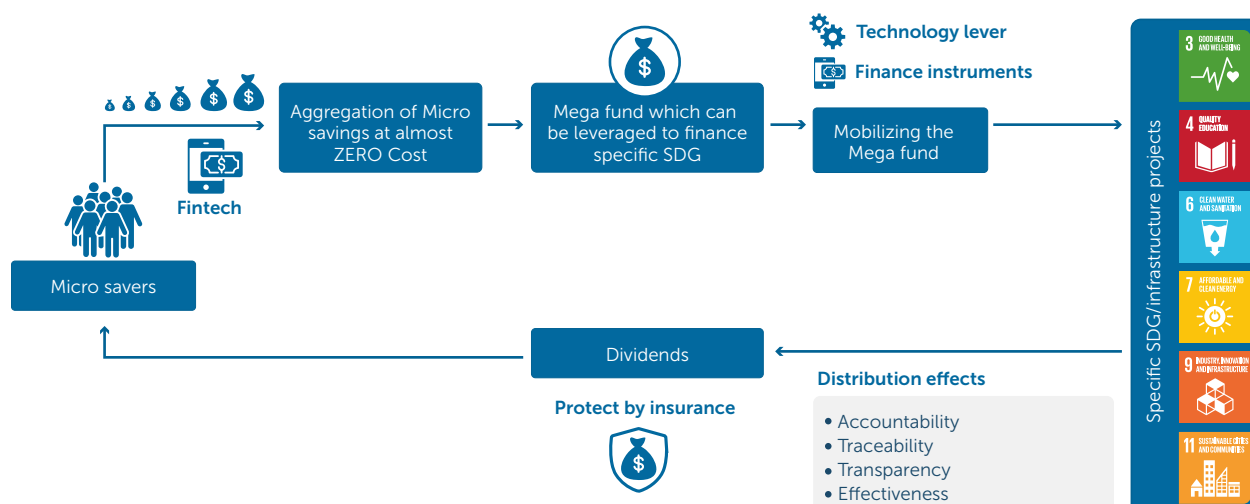
<sup>217</sup> Forthcoming report developed by LightCastle Partners for a2i and UNCDF as part of project design. See [www.un.org/ldcportal/uncdf-oecd-report-focuses-on-potential-of-blended-finance-for-ldcs-response-to-COVID-19](https://www.un.org/ldcportal/uncdf-oecd-report-focuses-on-potential-of-blended-finance-for-ldcs-response-to-COVID-19).

<sup>218</sup> UN Secretary-General's Task Force on Digital Finance, *People's Money: Harnessing Digitalization to Finance a Sustainable Future* (Geneva, 2020).



FIGURE 21.

Mobilizing citizen micro-savings to finance SDG infrastructure through the digital financial value chain



## PATHFINDER CASE STUDY 2: DIGITAL FINANCE LINKS SMES TO DOMESTIC CAPITAL MARKETS IN ZIMBABWE

Small and medium enterprises (SMEs) are of critical importance to a country's economic growth, job creation and social prosperity. The growth of most SMEs in low-income countries is constrained by a lack of finance.<sup>219</sup> SMEs are underserved by domestic banking systems and capital markets. The share of non-bank finance in total SME finance remains very low. With historic levels of capital accumulating in negative or low-yielding assets globally,<sup>220</sup> there is an urgent need to channel capital to profitable use among SMEs in developing countries. Policymakers and regulators are encouraging market innovation to narrow this gap.

Capital markets are not easily accessible to SMEs, which are in need of longer-term and lower-cost financing. Low-income countries have significantly fewer investment platforms catering to SMEs than high-income countries.<sup>221</sup> The process required for an SME in lower-income countries to raise capital through a securities exchange is prohibitively cumbersome and

time-consuming. Inclusive investment platforms for SMEs, which integrate sustainability criteria and client protections,<sup>222</sup> are among the innovations emerging in least developed countries (LDCs) that are made possible by digital finance.

In Zimbabwe, an inclusive investment platform is being developed to meet this challenge. This country's 3.5 million microenterprises and SMEs play an important role in its economy, employing 75 percent of the total workforce. Almost 30 percent of these enterprises have operated for between 6 and 10 years. SMEs, defined as those Zimbabwean enterprises which have more than 6 employees, represent 12 percent of all registered or licensed enterprises in Zimbabwe.<sup>223</sup> As experienced across LDCs, a major constraint to their growth is a lack of finance, especially for longer-term and lower-cost financing and even among the more established SMEs.<sup>224</sup> Capital markets are not accessible to SMEs. Given SMEs' important role in the economy, policymakers in Zimbabwe have prioritized initiatives to address their financing constraints.

<sup>219</sup> International Finance Corporation, *MSME Finance Gap: Assessment of the Shortfalls and Opportunities in Financing Micro, Small, and Medium Enterprises in Emerging Markets* (Washington, DC, 2017).

<sup>220</sup> Overall there is around US\$10 trillion in negative yield bonds, and over half of all assets under management earning less than 5 percent globally.

<sup>221</sup> See [www.world-exchanges.org/storage/app/media/research/Studies-Reports/2018/WFE%20Overview%20of%20SME%20Markets%20Report%20October%202018.pdf](http://www.world-exchanges.org/storage/app/media/research/Studies-Reports/2018/WFE%20Overview%20of%20SME%20Markets%20Report%20October%202018.pdf).

<sup>222</sup> UN Secretary-General's Task Force on Digital Finance, *People's Money: Harnessing Digitalization to Finance a Sustainable Future* (Geneva, 2020).

<sup>223</sup> 2012 FINSCOPE survey.

<sup>224</sup> See <http://documents1.worldbank.org/curated/en/780081468137402417/pdf/945050WP0Box385442B0P12644800PUBLIC00ACS.pdf>.

Mobile money has been widely adopted by most Zimbabwean adults and enterprises for payments and transactions. Ecocash is the largest mobile financial services (MFS) provider in Zimbabwe. It has analysed transactional data from more than 70,000 SMEs. Together with its partners, it has found that use of this data to assess the creditworthiness and value of businesses, as well as to manage customer due diligence (CDD) and antimoney laundering (AML) risks, can enable capital market process flows and thereby enhance investor participation. New data sources such as these are proving important when SMEs lack properly analysed and audited financial statements.

In partnership with Ecocash, the Financial Securities Exchange Limited (FINSEC) has launched a dedicated SME platform: the Growth Enterprises Market Listing Portal (GEM Portal).<sup>225</sup> Technical support is provided to the initiative by the Investors Exchange (IEX) and UNCDF. It is designed to be a robust end-to-end platform, with fully automated capital-raising through private placements, securities exchange listing and securities trading and settlement for SMEs. FINSEC provides complete automation of all processes in the issue and trading of various types of financial instrument. The use of technology enables FINSEC to extend capital market products and services to a wide range of issuers and investors in an efficient and cost-effective manner. For example, FINSEC has created an app that works on all devices, including feature phones, enabling retail investors to participate, even with investments of less than US\$100.

Currently, the GEM platform is operational at the pilot stage, with 135 registered SMEs that have provided their business and related data for due diligence. Three investors are on the platform, as well as seven advisors (to build the capacities of SMEs, develop investment-related documents, and assist them in initial public offering (IPO) issuances on stock exchanges as needed). It is estimated that the solution can extend investment to 20,000 SMEs in the next phase. GEM builds on similar features pioneered by the Thailand Market for Alternative Investments and London's AIM, which demonstrate that SMEs can raise financing from securities exchanges. The Zimbabwe model is unique in how it selects and onboards SMEs onto the platform, takes them through the growth curve of capacity enhancements with advisor support, and connects to qualified investors and underwriters. SMEs that meet the listing requirements can move to the securities exchange platform for equity or debt requirements.

The GEM Portal incorporates some unique features for the Zimbabwean market within a securities exchange infrastructure. It:

- allows SMEs to apply on one common platform;
- creates SME profiles using alternative data, digital data sets such as from mobile money, bank data, credit cards, remittance data, point of sale data, satellite data, etc. (most of the data sources have yet to be integrated);
- brings investors, investees, advisors and underwriters together on the same platform; and
- lowers the cost of due diligence and the creation of investment-based SME financing portfolios, based on investor needs (size, geography, sector, impact, etc.).

The GEM Portal will be able to categorize SME financing into bond portfolios, direct financing, special purpose vehicles (SPVs) and IPO listings. This approach can cater to the different financing requirements of SMEs and deliver different options for investors. The goal will be to create a diversified asset pool that meets various preferences from both the demand and supply side.

In addition to mobile money datasets, data from financial institutions, such as CABS, are also used on the platform to create assessment scores for SMEs. The partners are presently working with the regulators and other entities for acceptance of new data sets. Once the initial SMEs secure financing, the platform will open up to more data-providing entities. Future plans will also test whether additional data sources can be used to finance microenterprises on the platform.

There is a set of risks that needs to be managed. Many emerging markets are subject to volatile political and economic situations that can disrupt capital markets. There are also currency, perception, fraud and corruption risks. Data access can also be a risk (as was shown in 2020 when one of the largest MFS providers in the country was forced to temporarily halt operations). Inclusive investment platforms, such as the GEM Portal, can be designed to support SMEs in handling some of those risks better and in a progressive way. For example, GEM can link SMEs to funding before they list on the securities exchange, thereby reducing their exposure to stock market fluctuations from political and economic changes.

<sup>225</sup> See [www.gemportal.co.zw](http://www.gemportal.co.zw).

## SECTION 4.3

# CROWDFUNDING CAN UNLOCK AN IMPORTANT SOURCE OF ALTERNATIVE INVESTMENT FOR MSMEs

By Mark Wensley



## HIGHLIGHTS

- Large amounts of investment are channelled through crowdfunding platforms globally, but LDCs are being left behind. All of Africa, the Middle East and the Asia Pacific Region (excluding China) accounted for less than 3 percent of global crowdfunding volumes.
- Digitalization will continue to connect retail and institutional investors with the investment needs of businesses globally. For LDCs to capture the promise of crowdfunding, especially through home-grown crowdfunding platforms, enabling regulation is needed to encourage responsible investment and innovation

Digital finance is only just starting to narrow the wide financing gap that prevents many least developed countries (LDC) from achieving the Sustainable Development Goals (SDGs). The United Nations Secretary-General's Digital Finance Taskforce affirms that digital finance can also reshape financial markets by democratizing sustainable investment into sectors of importance to local communities.

Crowdfunding<sup>226</sup> is a digital finance innovation that places investment decisions in the hands of retail investors, as well as those of institutional investors. While some emerging countries, such as Indonesia, have leveraged this innovation to finance more than US\$1 billion through crowdfunding, the practice is only just getting under way in many LDCs and requires further attention if it is to be scaled. Increased focus is also required to direct

<sup>226</sup> Crowdfunding is defined broadly and encompasses debt (peer-to-peer lending, balance sheet lending, trade finance, securities and mini bonds), investment (equity, real estate, profit sharing through shares or royalties), and non-investment based (reward or donation-based) crowdfunding. This paper is most focused on debt models, where non-deposit taking peer-to-peer or marketplace platforms facilitate lending to consumers and business, lending part (or all) of the investment off its balance sheet, invoice trading, and securities (e.g. mini bonds).

alternative investments to businesses, especially the micro, small and medium-sized companies (MSMEs) that stand to deliver many of the services required to achieve the SDGs at the last mile.

## LEAST DEVELOPED COUNTRIES MUST ACCELERATE CROWDFUNDING

Large amounts of investment are channeled through crowdfunding platforms globally, but LDCs are being left behind. Crowdfunding providers extended US\$304 billion of alternative investment in 2018 globally.<sup>227</sup> Excluding China, which saw consolidation, global volume grew by 48 percent in 2018 to US\$89 billion. Crowdfunding activity is concentrated in advanced countries, such as China and the United States of America. By contrast, all of Africa, the Middle East and the Asia Pacific Region (excluding China) accounted for less than 3 percent of global crowdfunding volumes. On a per capita basis, this means that someone in Zambia or Solomon Islands secured US\$2.35 or US\$0.51 from crowdfunding in 2018, respectively, whereas someone in the United States of America secured US\$186.9.<sup>228</sup>

About one-half of all investment globally was from institutional investors – their contribution was as high as 85 percent of investment in the United States of America. However, it remains predominantly financed by retail investors in LDCs. A lack of regulation slows larger inflows of investment into crowdfunding. In Africa, where crowdfunding investment grew 102 percent in 2018 to US\$209 million, for example, only two countries have adopted a regulatory framework for crowdfunding: Morocco and Tunisia. Most of this volume occurred in African countries that have yet to introduce or finalize regulatory frameworks. Further growth can be expected as regulatory frameworks progress in an additional 11 African countries.<sup>229</sup> These developments could also see more domestic investment through crowdfunding, at a time when 76 percent of crowdfunding volumes in Africa are met by international investors.

## MANY FORMS OF CROWDFUNDING STAND TO BENEFIT MSMEs

Individuals and their enterprises in LDCs have long benefited from pooling their financial resources for investment in their community, as demonstrated by the popularity of informal savings groups, such as *chamas* in East Africa and *tontines* in West Africa.<sup>230</sup> With digital technology, more targeted and diversified investment within and beyond their community is possible. Crowdfunding introduces the use of technology to match many funders to the investment needs of an enterprise, individual, non-profit or government. In the process, it bypasses traditional financial intermediaries<sup>231</sup> Debt, equity and donation funding can be provided through crowdfunding<sup>232</sup> Technically, there are several variations of this innovation, including peer-to-peer lending, marketplace lending, and related online capital-raising activities.<sup>233</sup>

Debt or lending to MSMEs through crowdfunding platforms often involves the listing and grading of MSME investment needs. The platforms can match investment opportunities to investors' expectations for risk-adjusted rewards and environmental, social and governance priorities. Investment opportunities can be financed by multiple investors – sometimes including the crowdfunding platform itself, investing off its own balance sheet – who then share the risk and return of that investment. Investors can select from multiple investments to diversify their risk.

In 2018, only US\$50 billion (US\$31 billion excluding China) was provided for business lending globally.<sup>234</sup> MSMEs are underserved by the domestic banking system and capital markets in LDCs. To finance these MSMEs, some crowdfunding providers are leveraging innovations in the use of business and transactional data, algorithms for credit scoring and to match investors, and linkages to customers and suppliers through digital platforms, for improved underwriting and risk management.

<sup>227</sup> This figure includes balance sheet lending of US\$31 billion. See [www.jbs.cam.ac.uk/wp-content/uploads/2020/08/2020-04-22-ccaf-global-alternative-finance-market-benchmarking-report.pdf](https://www.jbs.cam.ac.uk/wp-content/uploads/2020/08/2020-04-22-ccaf-global-alternative-finance-market-benchmarking-report.pdf).

<sup>228</sup> Ibid.

<sup>229</sup> See <https://africancrowd.org/#africa> (accessed on 12 February 2021). Angola, Cameroon, Central African Republic, Chad, Congo-Brazzaville, Equatorial Guinea, Gabon, Kenya, Nigeria, Rwanda and Uganda.

<sup>230</sup> See <https://africancrowd.org/blog/equity-crowdfunding-a-new-regime-for-sme-financing-in-africa/> (accessed on 12 February 2021).

<sup>231</sup> See [www.cgap.org/research/publication/crowdfunding-and-financial-inclusion](https://www.cgap.org/research/publication/crowdfunding-and-financial-inclusion).

<sup>232</sup> Ibid.

<sup>233</sup> This chapter uses the term 'crowdfunding' in the most general sense to encompass all these forms.

<sup>234</sup> See [www.jbs.cam.ac.uk/wp-content/uploads/2020/08/2020-04-22-ccaf-global-alternative-finance-market-benchmarking-report.pdf](https://www.jbs.cam.ac.uk/wp-content/uploads/2020/08/2020-04-22-ccaf-global-alternative-finance-market-benchmarking-report.pdf).

# CROWDFUNDING IS INNOVATING TO SERVE MSMEs IN LEAST DEVELOPED COUNTRIES

Examples from countries where 'missing middle' financing gaps exist for MSMEs operating in the informal economy, from Ghana to Indonesia and Bangladesh, demonstrate that crowdfunding can be an important source of capital to MSMEs in least developed countries. To realize this opportunity, 'pathfinder' countries, such as Bangladesh, are introducing strategies to enable crowdfunding, as part of their overall approach to mobilizing domestic capital in order to finance the SDGs.<sup>235</sup> UNCDF's work offers several insights into future crowdfunding opportunities in LDCs:

- **Crowdfunding can reach MSMEs at scale with 'tech and touch' adaptations.** In Indonesia, crowdfunding is demonstrating the ability to fund large numbers of MSMEs. For example, Amarthas has provided lending support to 600,000 micro-entrepreneurs with more than US\$215 million in funding.<sup>236</sup> UNCDF has supported Amarthas in providing financial literacy training to micro-entrepreneurs who are considering using the service. Similarly, another platform, Modalku,<sup>237</sup> has extended US\$1.4 billion in funding to enterprises. Its business model leverages a 'tech' crowdfunding, in combination with a hands-on 'touch' approach with MSMEs. UNCDF has supported the development of an agent network to assist in the application, appraisal, disbursement and collection of loans.
- **Innovative use of data and supplier relationships is improving risk management.** In Ghana, crowdfunding platforms are demonstrating novel underwriting and risk management approaches to fund MSMEs, even in the Ashanti and Western regions, where lack of economic opportunity has led youth to migrate. Here, UNCDF supports **Pezesha**<sup>238</sup> a Kenyan
- **Convergence with digital commerce platforms.** In Bangladesh, digital platforms are demonstrating how crowdfunding can be embedded into larger offerings. For example, **iFarmer**<sup>239</sup> provides a digital solution for farmers that bundles finance with training and agronomic advice to improve their productivity and profitability. iFarmer has partnered with e-commerce and logistics platforms to sell produce and fulfil deliveries. Through its crowdfunding feature, it has matched 2,000 farmers with funding from investors since 2018. UNCDF has helped iFarmer to integrate more women farmers into its farming network.
- **Crowdfunding is part of a continuum of funding.** Crowdfunding platforms for donations also have an important role to play in channelling funds to community projects and vulnerable populations. UNCDF is supporting FundRaising Africa,<sup>240</sup> a platform that was launched to help young entrepreneurs during COVID-19 by channelling funds from the Ghanaian diaspora. Recipients of donations can be linked to financial institutions for more sustainable sources of funding as their enterprise grows.

<sup>235</sup> See [https://digitalfinancingtaskforce.org/wp-content/uploads/2020/08/Mobilizing-Domestic-Microsavings-to-Finance-SDGs\\_Aug\\_23\\_3PM-1.pdf](https://digitalfinancingtaskforce.org/wp-content/uploads/2020/08/Mobilizing-Domestic-Microsavings-to-Finance-SDGs_Aug_23_3PM-1.pdf).

<sup>236</sup> From internal report.

<sup>237</sup> See <https://medium.com/pulse-lab-jakarta/tracking-the-progress-of-our-fintech-challenge-fund-winners-7067d0d56898>.

<sup>238</sup> See [www.uncdf.org/article/6494/two-crowdfunding-models-pioneered-in-ghana-under-the-green-project](https://www.uncdf.org/article/6494/two-crowdfunding-models-pioneered-in-ghana-under-the-green-project).

<sup>239</sup> See [www.uncdf.org/article/5619/agile-in-response-how-a-bangladeshi-start-up-is-revolutionizing-digitization-in-the-farming-sector](https://www.uncdf.org/article/5619/agile-in-response-how-a-bangladeshi-start-up-is-revolutionizing-digitization-in-the-farming-sector).

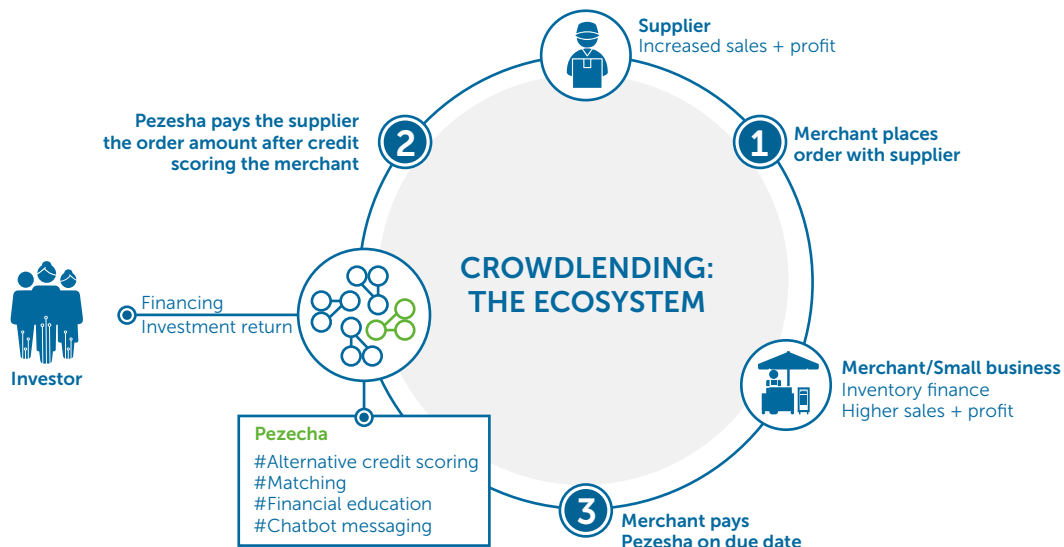
<sup>240</sup> See [www.siaedge.com/news/2021/1/21/new-partnership-between-uncdf-emergent-payments-ghana-and-strategic-impact-advisors-relaunch-of-fundraising-africa-under-the-green-project](https://www.siaedge.com/news/2021/1/21/new-partnership-between-uncdf-emergent-payments-ghana-and-strategic-impact-advisors-relaunch-of-fundraising-africa-under-the-green-project).



Digitalization will continue to connect retail and institutional investors with the investment needs of businesses globally. For LDCs to capture the promise of crowdfunding, especially through home-grown crowdfunding platforms, enabling regulation is needed to encourage responsible investment and innovation. A safe and enabling environment are critical for it flourish and reach its full potential.<sup>241</sup>

Strengthened financial capabilities among MSMEs and responsible lending practices among crowdfunding platforms are essential to maintain trust in crowdfunding. Continued innovation in the use of data for underwriting and approaches to risk management will underpin crowdfunding for MSMEs that are excluded from the formal financial system.

**FIGURE 22.**  
Crowdlending: the ecosystem



<sup>241</sup> See [www.cgap.org/sites/default/files/researches/documents/Working-Paper-Crowdfunding-and-Financial-Inclusion-Mar-2017.pdf](http://www.cgap.org/sites/default/files/researches/documents/Working-Paper-Crowdfunding-and-Financial-Inclusion-Mar-2017.pdf).

## SECTION 4.4

# BLENDED FINANCING FOR INCLUSIVE DIGITAL ECONOMIES

By Laura Sennett and Casper Sonesson



## HIGHLIGHTS

- Blended finance approaches can be important to maximize the catalytic impact of development finance by sharing risks or lowering costs to adjust risk-return profiles for private investors. They can create important demonstration effects that narrow the gap between actual and perceived risks of investing in these markets. However, LDCs currently only receive a small piece of the blended finance pie.
- The use of digital tools can enhance the role of blended finance in scaling and reaching the last mile. Innovations, such as alternative credit scoring, digital verification, etc. facilitate the structuring of blended finance transactions, which can provide access to capital where it was not previously possible.

While international and domestic public finance remains essential to meet the Sustainable Development Goals (SDGs), public resources alone will not be enough. Private sector investments must be better aligned with and supportive of the SDGs. The challenge is particularly urgent in the least developed countries (LDCs), which often find it difficult to attract private investment, including foreign direct investment, across a variety of economic sectors.

Furthermore, the development finance architecture is not channelling resources to LDCs effectively, or at the scale and speed needed to leave no one behind. There is increasing focus on how limited public resources can be used to put in place the right incentives, regulations, productive capacities and financial instruments to reduce investment risks and mobilize private finance for the SDGs.

In this context, blended finance<sup>242</sup> is receiving increased attention for its potential to use concessional resources to help mobilize much needed private sector resources for the LDCs. Blended finance approaches can be important to maximize the catalytic impact of development finance by sharing risks or lowering costs to adjust risk-return profiles for private investors. They can create important demonstration effects that narrow the gap between actual and perceived risks of investing in these markets.

However, LDCs currently only receive a small piece of the blended finance pie. There is a need for further risk-taking and experimentation at both the project and fund or facility level. In addition, blended transactions typically require greater levels of concessional support in LDCs than in other developing countries, in order to reach financial viability.

Of the total private finance mobilized by official development finance interventions between 2012 and 2018, approximately US\$13.4 billion, or 6 percent, went to LDCs, whereas more than 74 percent went to middle-income countries.<sup>243</sup> Energy and banking and financial services were the largest sectors, receiving 50 percent of private finance (US\$796 million and US\$672 million, respectively) on average in 2017–2018.

## THE ROLE OF BLENDED FINANCE IN FINANCING DIGITAL ECONOMIES

As the development of digital economies in LDCs accelerates, including in response to COVID-19, many digital entrepreneurs – as well as enterprises in real economy sectors – who are looking to benefit from digital solutions face challenges in accessing investment capital to grow and transform their businesses.

Blended finance can be one particularly well-suited approach to increasing access to finance for enterprises in the digital economy. There are several reasons for this:

First, the providers of concessional capital require that the investments they support have a **clear development impact**, in addition to a financial return. These concessional providers typically include international and development finance institutions, donors and philanthropic investors. There is growing

evidence that digital technologies and solutions can make significant development contributions to help accelerate progress on the Sustainable Development Goals. For example, in its 2019 report, the United Nations Secretary-General's High-Level Panel on Digital Cooperation highlights the transformative development impacts of digital technologies and calls for building inclusive digital economies and societies to accelerate SDG achievement.

Second, blended finance providers require that **investments are commercially viable**. In general, there is often a strong business case for introducing digital solutions, which makes investments in this sector attractive. For example, digital platforms and solutions can help to reduce transaction costs and create opportunities to reach new domestic and foreign markets, especially for MSMEs.

Third, given the high risks involved with digital start-up companies – which are often intangibles (intensive, knowledge-based and lacking collateral) – commercial banks and traditional investors may be hesitant in providing financing to these specific types of firm. Blended finance solutions that help to **address or share some of the risks** can therefore be an especially appropriate financing approach for the digital economy.

Despite the importance of digital economy enterprises to the SDGs, there are relatively few notable examples of how blended finance has supported investments in digital economies, especially in least developed countries. However, several examples and findings point to emergent trends and approaches for blended finance in this area:

- The joint UNCDF and Organization for Economic Co-operation and Development report, *Blended Finance in the Least Developed Countries 2020*, finds that the communications sector (including information and communications technology, radio, television and print media, telecommunications, etc.) attracted 18 percent (US\$211 million) of all private investments mobilized by official development finance interventions in 2018.<sup>244</sup>
- The European Investment Plan has a dedicated digital window under the European Fund for Sustainable Development (EFSD), which provides guarantees. This digital window aims to support innovative digital solutions, especially those

<sup>242</sup> There are several definitions of blended finance. For the purposes of this report, blended finance refers to "the strategic use of concessional finance to catalyse additional private-sector or commercial investment in SDG-related investments." UNCDF, "Blended finance in least developed countries" (2018).

<sup>243</sup> OECD/UNCDF, "Blended finance in the least developed countries 2020: supporting a resilient COVID-19 recovery" (OECD Publishing, Paris, 2020).

<sup>244</sup> Ibid.

addressing local social needs and financial inclusion, low-carbon climate-resilient solutions and promoting decent job creation.<sup>245</sup> The aim of the ESFD guarantee is to encourage financial institutions to work jointly with the private and public sector to create the conditions needed to lower investment risks in last-mile digital infrastructure and to scale up digital services. One example of how these guarantees are deployed is the FMO Ventures Programme, which received a Euro (€) 45 million (US\$56.8 million) EFSD guarantee to boost investments for start-up companies that use digital solutions to improve or enable access to products and services for unserved and underserved communities, including in fintech, agritech, off-grid energy, e-commerce and health care. The guarantee, in combination with €6.5 million (US\$7.7 million) in technical assistance, is expected to catalyse around €1 billion (US\$1.18 billion) in total investment in digital ventures.<sup>246</sup>

- Another example of how blending different sources of finance can help to catalyse digital transformation is the Alternative Energy Technologies Group (Altech Group), a Congolese-owned and managed pay-as-you-go off-grid solar distributor operating in the Democratic Republic of the Congo. Altech started in 2013, based out of Eastern Democratic Republic of the Congo, to try and address the country's energy problem, where about 90 percent of the population has no access to electricity. To address this issue, Altech sells, distributes and installs alternative energy solutions in the form of solar lamps, solar home systems and clean cookstoves. Since its inception, Altech has sold approximately 200,000 assorted units and is currently positioning itself to grow that number by another 800,000 units by 2025 (75 percent solar home systems and 25 percent cookstoves). In the last quarter of 2020, Altech secured US\$500,000 in financing from UNCDF to support its growing operations. The financing included a US\$350,000 loan for its inventory and a US\$150,000 grant for the expansion of the company's clean cookstove offerings. Given the supply chain disruptions as a result of the COVID-19 pandemic, securing financing, particularly for inventory, became strategically important for the company. In addition to the financing from UNCDF, Altech secured additional financing from US-based Social Investment Managers & Advisors, with a US\$500,000 debt

investment. The UNCDF investment brings the total financing secured by Altech in 2020, via external investors and direct supplier agreements, to more than US\$3 million.

- Over the past three years, UNCDF has expanded its capacity to use financial instruments such as loans and guarantees in a strategic way to help unlock additional commercial investments through the establishment of its **LDC Investment Platform**.<sup>247</sup> This unique capability in the United Nations system will be expanded in the coming years and can be further targeted at providing catalytic investments in early-stage digital economy businesses, to demonstrate investment readiness and enable such firms to access larger-scale blended or commercial finance. As an example, in Ethiopia, UNCDF partnered with the United Nations Development Programme, the Development Bank of Ethiopia and the Government to operationalize a guarantee scheme for renewable energy businesses. In 2019, the scheme guaranteed US\$1.1 million in loans to 12 renewable energy SMEs in partnership with five local banks. This de-risking model will be used as proof of concept to be replicated to other markets and sectors.

## **BLENDED FINANCE APPROACHES CAN ALSO BENEFIT FROM DIGITAL INNOVATIONS**

The use of digital tools can further help to enhance the role of blended finance in scaling and reaching the last mile. Digitalization of finance has revolutionized access to capital for MSMEs; digital solutions enable aggregation of demand in ways that were previously impossible (especially for MSMEs). This includes risk assessment through alternative credit scoring, leveraging digital data, digital verification of collateral/security, structuring of investment offerings and access to capital in a variety of new ways. These innovations facilitate the structuring of blended finance transactions, which can provide access to capital where it was not previously possible.

Digitalization of finance has also opened up new approaches to scale domestic resource mobilization that could be reinvested for long-term investments

<sup>245</sup> See <https://ec.europa.eu/eu-external-investment-plan/sites/devco-eip/files/efsd-guarantee-windows-digital-for-development.pdf>.

<sup>246</sup> See [https://ec.europa.eu/international-partnerships/system/files/181213-eip-28-guarantees-brochure-final\\_en.pdf](https://ec.europa.eu/international-partnerships/system/files/181213-eip-28-guarantees-brochure-final_en.pdf).

<sup>247</sup> See [www.uncdf.org/ldcip](http://www.uncdf.org/ldcip).

in socio-economic infrastructure and priority sectors in developing countries (as an alternative to external borrowing), through blended finance structures. Digital payments could be used to support infrastructure financing through catalytic opportunities, whereby the public at large (including low-income small-balance savers) could mobilize deposits cheaply via digital means to co-invest in a blended finance structure with public and private (pension and insurance) sector investors. Pay-as-you-go models that employ digital infrastructure can employ a blended finance structure to make investments less risky for the development of mini-grids, in order to address the barrier to investment of rural customers' low spending power.

The exponential growth of data gathering and processing that is enabled by the digital revolution is having a profound impact on how blended finance investments can be identified, tracked and monitored in a way that helps to assess their compliance with SDG-aligned objectives. Until recently, lack of data and information to properly evaluate market opportunities has restrained blended finance investments. Big data and alternative sources of data through digital collection can help to provide needed data points. Data are helping to increase both the alignment and impact monitoring of blended finance solutions in terms of



## DIGITALIZATION AND IMPACT INVESTING

**By Jean-Philippe de Schrevel, Founder and Managing Partner, Bamboo Capital Partners**

A year into the COVID-19 pandemic, it is clear that most developing countries have avoided the high transmission and mortality rates plaguing much of Europe and the US – possibly due to a combination of relatively youthful populations, lower rates of personal mobility, and in some cases decisive action and restrictions. The pandemic will nevertheless require significant changes in how citizens of developing countries learn, work, trade and interact with one another.

Trends underway before the crisis will accelerate, presenting immense challenges and compelling opportunities. Households will focus more than ever on essential needs in health, hygiene, food, and personal safety. ‘Leapfrogging technologies’ offering digital and technology-based solutions suddenly hold much greater appeal than ‘bricks and mortar’ infrastructure, given social distancing requirements. Tech-enabled solutions that lower price points even as they improve access and ease of use of essential products and services are expected to take off as economies recover, generating sustainable investment returns.

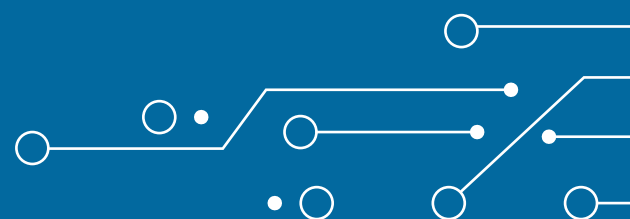
The latest generation of impact funds at Bamboo focus their investment strategies on just such solutions, including internet and mobile connectivity, cloud technologies, IoT, blockchain, big data, artificial intelligence, e-money, voice recognition, imaging technologies, unmanned aerial vehicles, and geo-localization. Companies that master one or more of these technologies will weather the COVID-19 storm better than their peers and be poised for rapid expansion during the economic recovery.

The digital transformation will cut across all sectors. In the health-care space, technologies such as telemedicine, medical booking platforms, health information dissemination and management, re-engineered medical technologies, e-pharmacy and

insurance marketplaces or guided diagnostic tools, just to name a few, will allow for increased access to a broader range of higher quality and cheaper health-care services. For example, our health-care fund will focus on three investment axes: i) scaling technologies that greatly enhance the capability of community health workers and nurses or provide basic medical services without human input, thereby overcoming the scarcity of highly skilled health-care workers; ii) reducing the costs and complexity of existing health-care delivery models, and iii) delivering new services that would otherwise be out of reach through technologies that have been specifically designed for resource-constrained environments.

Similarly, in agriculture, the maturation of technology-enabled models represents a historic opportunity to remove significant bottlenecks. Such examples include online marketplaces for food, livestock, agricultural inputs, and insurance; agricultural products’ market information; affordable cold chain technologies; genomics and logistics supply solutions, to name a few. In the fintech industry, our funds will continue to focus on digital payments, electronic wallets, unstructured data-driven micro-loans, digital circular savings platforms, digital mobile-only banks and financial services platforms, micro-insurance services, e-commerce platforms, and financial literacy.

The digital transformation holds the promise of scaling much-needed basic services to underserved populations in emerging markets. But if countries do not embrace the global digital transformation underway and if the investment community does not support such transformation, the gap between rich and poor will further increase, laying a big and growing a digital divide on top of the already terribly unequal wealth distribution across the globe. Digitalization is an essential part of our collective efforts to rebuild better, and the time to act is now.







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## PART 5

# WHAT'S NEXT ?



# THE DIGITAL FINANCE REVOLUTION PUTS INVESTMENT INTO THE HANDS OF CITIZENS TO ACHIEVE THE SUSTAINABLE DEVELOPMENT GOALS

By Henri Dommel



## THE DIGITAL REVOLUTION WILL CONTINUE TO TRANSFORM LIVES AND ECONOMIES IN LDCS

Digital services have been a lifeline for billions of people to access basic services, sustain work and livelihoods, and achieve resilience during the COVID-19 pandemic. In the global South, many people used digital services for the first time, and most expect to continue to do so after the pandemic. The digital transformation of the economy has accelerated due to the swift response of the private sector, citizens and governments. This rapid change, which is only just beginning, is quickly making digital economies the 'new normal'.

The opportunity of our time is to harness this rapid change and to urgently invest in digital transformation to achieve the SDGs. The challenge of our time is to make digital economies inclusive and citizen-centric and ensure

that they 'leave no one behind'. UNCDF is working with many government partners, as well as the private sector, to overcome these challenges. In sharing insights from UNCDF's work, and that of our community in this report, we hope to convince leaders that the vision of inclusive digital economies should be embraced.

Digital finance is an important lever that will determine whether we achieve that vision, as it becomes embedded into the real economy and increasingly helps to shape it. Not only does digital finance provide the mechanisms to monetize and deliver products and services digitally, it also enables entirely new business models to reach low-income individuals more efficiently. In this way, digital finance is a critical onramp to digital economies.

The following two examples bring into focus the ways in which digital solutions can advance the SDGs. When considering the scale that digital solutions achieve and the transformational impact that they can drive for entire sectors, we see digital revolution in the making – one that can fast-track the SDGs.



- **Social protection.** More than 200 governments around the world introduced or expanded social transfer programmes for citizens in response to COVID-19.<sup>248</sup> Digital payments have enabled government-to-person (G2P) programmes to operate during social distancing measures and to scale in LDCs, from Bangladesh to Senegal. This success builds on earlier efforts to enhance the purchasing power of marginalized groups by bringing efficiency, transparency and improved targeting to government transfers and services, alongside initiatives to improve identification and registries.
- **Food security and livelihoods.** This paper has presented the stories of smallholder farmers in LDCs, such as Godson in Uganda and Mamadou in Guinea. At a time when many farmers like them are struggling financially, solutions are emerging that bundle game-changing finance and non-financial services and deliver services through digital and digitally-enabled providers. For example, the growth of 'agtech' services and platforms in Nepal and Uganda show that farmers can access improved financing, which can be used for better inputs, alongside tailored agronomic advice, and at the right time for reaching markets. Digital solutions also enable farmers to pay school fees in more flexible ways, which allows them to manage the seasonality of their cash flows. Examples such as these, where multiple and various services are brought together and made seamless, demonstrate the power of digital technology to contribute to improved farmer productivity and revenue. Digital solutions are not just addressing challenges faced by smallholders, but also those facing policymakers in LDCs, especially those focused on food security, jobs and work opportunities.

## SOLUTIONS TO THE MOST VITAL SDGs ARE NOW WITHIN REACH

Governments and world leaders are looking to 2030, especially during the Fifth UN Conference on LDCs in 2022, and considering how the setbacks of the pandemic will affect their plans to achieve the SDGs.

At a time when the pandemic has placed enormous stress on budgets, the acceleration of digital transformation is a 'silver lining', opening up more opportunities to solve some of the most pressing challenges that face governments in LDCs.

- **Climate action.** Renewable energy solutions, such as pay-as-you-go solar home systems, are now installed in almost 100 million homes. Digital solutions, including digital finance and sensors, have made much of this possible, especially in Africa. In addition to meeting the energy needs of marginalized rural communities, this is contributing to conservation and biodiversity preservation by reducing household demand for wood and charcoal. In this way, digital finance contributes to mitigating climate change. Digital services are also expanding catastrophic insurance cover and contributing to adaptation.
- **Food security.** With fast-growing populations in LDCs, especially those in Africa, there is an urgent need to expand food production. Productivity has to increase, as climate change threatens to make food production more erratic. Digital technologies stand to play a vital role in feeding growing populations. Digital solutions can protect farmers against weather risks through indexed insurance or encourage investment in climate-smart inputs. Examples in this report highlight how digital agriculture (agtech) solutions can contribute to related SDGs, such as climate action through adaptation with pay-as-you-go water pumps.
- **Expanding jobs and work opportunities.** Achieving food security is dependent on the strength of rural economies and farmer livelihoods. Expanding on-farm and off-farm opportunities, especially for the bulging youth demographic in many LDCs, is intricately linked to finance, skills and market access. The emergence of digital models to bring these services together empowers rural populations to expand their micro, small and medium-sized businesses (MSMEs) and work opportunities. This will also help to slow the rural exodus, which has further increased employment tensions for youth.

The preceding chapters demonstrate that solutions are emerging to address many challenges faced by marginalized groups (women, youth, migrants, refugees and other forcibly displaced people, MSMEs) and in key sectors (agriculture, energy, education, health).

<sup>248</sup> See <http://documents1.worldbank.org/curated/en/378931596643390083/pdf/Digital-Cash-Transfers-in-Times-of-COVID-19-Opportunities-and-Considerations-for-Womens-Inclusion-and-Empowerment.pdf>.



## BY PUTTING CITIZENS AT THE CENTRE OF THE DIGITAL REVOLUTION, THE SDGs CAN BE FINANCED

Not only can digital solutions help us to deliver solutions to citizens and communities, they can also shape how we finance those solutions. The scale of these challenges requires an additional US\$2.5 trillion per annum to be invested in achieving the SDGs by 2030.<sup>248</sup> Troubling signs of declining official development assistance and inadequate volumes of blended finance going forward mean that governments will have to consider bold approaches to financing the SDGs. As this report and the UN Secretary-General's Digital Financing Taskforce highlight, governments can look to their local digital economy for financing.<sup>249</sup>

One of the core opportunities made possible by the digital revolution is the ability to place citizens at the centre of the financial system. The introduction of non-bank finance licensing, such as for e-money issuance, has already resulted in greater competition, and with it, a drive to serve low-income segments for the first time. Through the introduction of new fintech providers and open banking regimes, for example, we can see digital transformation of the finance sector itself. These developments provide citizens with greater choice of where and how to save and invest and with whom to engage.

We are already seeing policymakers leverage digital finance to enable citizens to invest more readily in the domestic economy. As a result, the private sector should be able to access retail investors more efficiently through digital platforms. Likewise, governments can more directly attract investments from citizens. For example, as shown in Chapter 4 of this report, Bangladesh is embarking on a national initiative to mobilize domestic sources of micro-deposits – through widely adopted digital channels and wallets – to invest in the community infrastructure required to meet the SDGs. This could help the country to reduce the amount of foreign financing it takes on by half, as it invests up to US\$120 billion per year.<sup>250</sup>

## NAVIGATING THE CHALLENGES OF EXCLUSION AND QUALITY WORK IN THE DIGITAL AGE

While solutions to achieve the SDGs are within reach, significant challenges stand in the way of progress. Many of these revolve around central issues that all LDCs will need to navigate as economies digitalize: overcoming exclusion so that no one is left behind, and ensuring quality work in the digital age. These two challenges require preparedness and proactive approaches to investment, private and public sector partnerships, and policy engagement.

### Overcome exclusion

The digital divide excludes many people from participating in and benefiting from the digital economy. Many rural communities lack connectivity at the last mile and lag in terms of device ownership and digital literacy. This gap is further deepened by a gender divide; even when digital services are available, fewer women can use them<sup>251</sup> because fewer (8 percent) have devices and fewer (20 percent) use the Internet<sup>252</sup> on a phone. This contributes to fewer women than men using financial services. The COVID-19 pandemic has deepened the gender divide, as women have disproportionately borne the burden of job losses and childcare during school closures.

Investment in last mile connectivity and devices needs to be prioritized in SDG financing strategies and policies. Such investment unlocks economic opportunities for a large population who stand to benefit from digital solutions. More must be done to improve the enabling environment and business case for investing in last mile services. Working with the private and public sector, we also have the opportunity to make women the builders of the digital economy. For example, our experience shows that better product design involving women can improve the adoption of digital financial services. It can also lead to increased work opportunities, with gender-smart recruitment strategies. We have also learned that it is essential to ensure that women are included in shaping policy agendas, in order to identify and capitalize on these opportunities.

<sup>248</sup> United Nations Conference on Trade and Development, *World Investment Report 2014*.

<sup>249</sup> See [www.un.org/en/digital-financing-taskforce](http://www.un.org/en/digital-financing-taskforce).

<sup>250</sup> See [www.un.org/ldcportal/uncdf-oecd-report-focuses-on-potential-of-blended-finance-for-ldcs-response-to-COVID-19](http://www.un.org/ldcportal/uncdf-oecd-report-focuses-on-potential-of-blended-finance-for-ldcs-response-to-COVID-19).

<sup>251</sup> World Bank, *Global Findex Database 2017* (Washington, DC, 2018).

<sup>252</sup> Global System for Mobile Communications Association (GSMA), *Connected Women: The Mobile Gender Gap Report* (London, 2020).

## Ensure quality work in the digital age

While dialogue on the quality of work in a digital age mainly centres around experiences in the global North, where digital platforms may displace or push workers into the informal economy, the global South needs space to define its own approach. Economies in the South are already highly informal; there are signs that digital platforms contribute to gradual formalization, as workers generate data and become visible with the entities that stand to provide them with improved services, especially safety nets, skills development and productive assets. However, the degree to which digital platforms consolidate and abuse market power could lead to a digital backlash for governments.

How do we ensure that digital transformation results in quality work for people in LDCs? As with any work-related issue, regulation and policymaking to limit abuse and encourage safeguards represent a cornerstone approach. Transparency and exposure of abusive practices can also provide powerful incentives for the private sector. The unique challenge for the digital economy is to engage platforms that operate across borders. This will require regional and global coordination. Data for monitoring and tracking will be important. Because the digital revolution is just beginning, it is equally important to focus on policies and programmes that enable the domestic innovation community to spur services which respond to the needs of communities. Examples from China, India, Indonesia, Kenya, Senegal and many other countries demonstrate that digital economies flourish when they satisfy the needs of domestic communities. A healthy, domestic innovation ecosystem is critical to achieve this.

## INCREASED INVESTMENT IN INCLUSIVE DIGITAL ECONOMIES CAN UNLOCK THESE OPPORTUNITIES

Fostering digital economies to achieve the SDGs, while navigating the risks, requires an integrated approach to setting in place the critical building blocks for inclusion. The Inclusive Digital Economy Scorecard (IDES, see Chapter 4) provides policymakers with a tool to guide their approach and investment in these building blocks. With UNCDF support, the IDES is now being implemented in 25 LDCs and is poised to become a global public good that could also benefit middle-income countries.

Increased investment in inclusive digital economies generates a leverage effect, which will be essential if we are to bridge the financing gap for the SDGs. Not only can solutions for the SDGs be delivered more efficiently with digital technology, they can also be funded with digital finance. Increased investment in inclusive digital economies should therefore be a priority for governments and the development community.

Digital business models tend to be profitable at scale. The world's largest companies are now predominantly technology companies, supplanting the industrial corporations of the last generation. Inclusion can also be made profitable over the long term, especially when relevant digital solutions are nurtured, and marginalized groups are equipped to use them.

Enabling the private sector to invest in solutions for the SDGs, while ensuring that people are not left behind and that marginalized groups can participate on an equal footing, is at the heart of the UNCDF's approach. This agenda is larger than just UNCDF and our partners; it is one that we hope will be embraced by all LDCs and development partners.







## LEAVING NO ONE BEHIND IN THE DIGITAL ERA

The UNCDF Strategy 'Leaving no one behind in the digital era' is based on over a decade of experience in digital finance in Africa, Asia, and the Pacific. UNCDF recognizes that reaching the full potential of digital financial inclusion in support of the Sustainable Development Goals (SDGs) aligns with the vision of promoting digital economies that leave no one behind. The vision of UNCDF is to empower millions of people by 2024 to use services daily that leverage innovation and technology and contribute to the SDGs. UNCDF will apply a market development approach and continuously seek to address underlying market dysfunctions.

## THE UN CAPITAL DEVELOPMENT FUND

The UN Capital Development Fund makes public and private finance work for the poor in the world's 46 least developed countries (LDCs).

UNCDF offers "last mile" finance models that unlock public and private resources, especially at the domestic level, to reduce poverty and support local economic development.

UNCDF's financing models work through three channels: (1) inclusive digital economies, which connects individuals, households, and small businesses with financial eco-systems that catalyze participation in the local economy, and provide tools to climb out of poverty and manage financial lives; (2) local development finance, which capacitates localities through fiscal decentralization, innovative municipal finance, and structured project finance to drive local economic expansion and sustainable development; and (3) investment finance, which provides catalytic financial structuring, de-risking, and capital deployment to drive SDG impact and domestic resource mobilization.