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## HOW TO USE THE MARKET SYSTEMS APPROACH FOR DIGITAL TRANSFORMATION

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# #Digital4MSME

## HOW TO USE THE MARKET SYSTEMS APPROACH FOR DIGITAL TRANSFORMATION

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## DISCLAIMER

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# Executive Summary

Micro, Small and Medium Enterprises (MSMEs) build the backbone of most economies in Sub-Saharan Africa. When it comes to the digitalisation of businesses, both economic development programmes and the IT & tech industries have often ignored this important business segment. Yet digitalisation is a key driver to strengthen the competitiveness of such MSMEs as well as their ability to create jobs.

The guide sheds light on three aspects: First, it explains the theoretical and empirical rationale to support the digitalisation of MSMEs across Sub-Saharan Africa (SSA). Second, it provides case studies of programmes that engage MSMEs and Business Development Service (BDS) providers to digitalise operations of MSMEs using the Market Systems Development (MSD) approach. And third, it offers operational reference points on how programmes can apply the MSD approach to create markets for digitalisation services tailored to the needs of MSMEs.

Moving away from a pure focus on digital connectivity and access to information and communications technology (ICT), recent work highlights the transformative effects of technologies and services on economic activity. **This guide defines digitalisation of MSMEs as the adoption of hard- or software technologies combined with sufficient understanding and skills to actively deploy these new technologies and use them to advance any aspect of the business operations.** It is not solely the most cutting-edge technologies, like artificial intelligence and the internet of things (IoT), that offer promising prospects. For most micro and small businesses the adoption of "basic" technologies, like emails, websites and office software packages, can already bring far-reaching and transformative changes.

Section 1 showcases various benefits that the application of digital solutions can unlock for MSMEs. Digitalisation can offer a path towards formality and financial inclusion for businesses operating in the informal economy. Basic technologies, like emails and office software packages, transform almost all aspects of communications and information sharing within businesses resulting in faster, more fluid communications and better coordination among workers. More sophisticated data management solutions allow to instantly collect and continuously update data on various business processes using one integrated data-

base management system - feeding into data-based decision making and optimised productions processes and resource allocation. Digital technologies circumvent physical market barriers for MSMEs and can digitise entire supply chains allowing more and more MSMEs to reach new customers and markets. Particularly, e-commerce and agricultural digital platforms ('ag platforms') are on the rise in SSA. Moreover, digital solutions can also create opportunities to access more or better support services from the enabling environment that MSMEs – particularly those operating in rural areas – were previously excluded from.

Constraints of infrastructure and affordability of technology are decreasing and enable the digitalisation of MSMEs. Significant progress has also been made by digital platforms (e-commerce and ag platforms) to onboard and register MSMEs and smallholder farmers. However, only a small percentage of registered users are actively using these digital solutions – calling for interventions that incentivise a transition from passive adoption to active usage, for example, through digital skills training.

Seeing the need for digitalisation and its benefits for MSMEs, on the supply side, a growing proportion of service providers has begun to target and serve the MSME customer segment. **Digitalisation services are broadly defined as any kind of BDS that support the digitalisation of MSMEs and, therefore, also include the supply of soft- and hardware solutions.** Digitalisation services in digital education range from promoting basic digital and financial literacy at schools and universities and through governmental Digital Literacy Programme. By far the largest group of digitalisation service providers are commercial and social enterprises that are either driven by technological innovations, social mandates or sales/customer acquisition and expansion. **There are four types of digitalisation services provided by this group: Advisory & information services, market linkages, digital financial services (DFS), and digital supply chain management solutions.** Hence, digitalisation services consist of many different types of business development support, aiming to advance the digitalisation of MSMEs. Digitalisation can then transform various aspects of the operations of these businesses.

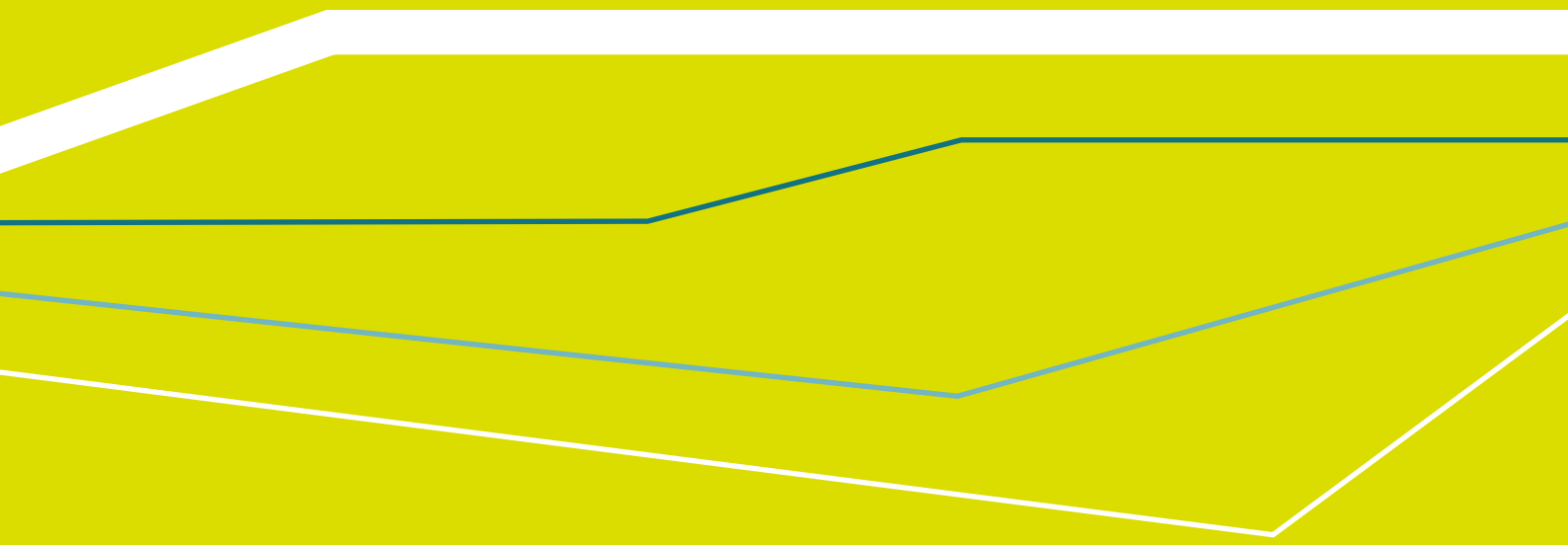
Section 2 details six case studies to bring these concepts into context and illustrate some practical benefits. The case studies cover a wide range of the different needs of various types of MSMEs at multiple levels of digitalisation and show how the private sector – with support from the development cooperation – responded to various digitalisation

needs. The case studies serve as a source of inspiration and encouragement for donors and implementors. Applying the MSD approach to the market for digitalisation services is still rather new and there are only a few projects that follow the path yet. Therefore, the case studies are structured to highlight and draw out key operational aspects of the different initiatives relevant to the market systems development (MSD) methodology.

Section 3 refines and adapts fundamental MSD principles to digitalisation services. It highlights important points of reflection for MSD programmes that aim to enhance the digitalisation of MSME by developing a well-functioning market for digitalisation services.

Starting with the market systems analysis, the section provides a high-level representation of the market system for digitalisation services in SSA. Beside the core market, various factors strongly influencing this market are hightlighted, such as rules and regulations or digital literacy. To design and implement sustainable projects, the real needs and actual benefits of MSMEs need to be well understood. Thus, a critical assessmentof digitalisation needs (demand side) and of service provider assessment (supply side) has to be carried out. Alongside such an assessment, there a various other reflection points, such as being solution driven rather than technology driven or the Principles for Digital Development.

SECTION 1



# INTRODUCTION

# 1 Introduction

Micro, Small and Medium Enterprises (MSMEs) → build the backbone of most economies in Sub-Saharan Africa. In Kenya, for example, MSMEs constitute approximately 80 % of all Kenyan business and contribute about one-third of the country's GDP. Together, MSMEs employ around 78 % of the Kenyan workforce. Similar patterns can be found across all countries of Sub-Sahara Africa (SSA).

When it comes to the digitalisation of these MSMEs, both economic development programmes and the IT & tech industries have often ignored this important business segment. However, digitalisation is vital to advance firms' profitability, create economic growth and increase competitiveness of this largest business segment. This guide, therefore, aims to encourage and inspire economic development practitioners on how to advance digital inclusion and the digitalisation of MSMEs.

The approach taken here is Market Systems Development (MSD). It is not sufficient for economic development organisations to supply MSMEs with digital solutions. Much rather, sustainable approaches must be found that not only deal with visible shortcomings of markets important for MSME development but dig deeper and work on the underlying root causes of these market failures. MSD, therefore, takes a holistic lens at markets, that is demand and supply as well as underlying factors, such as rules and regulations or cultural norms. It aims to develop sustainable solutions to strengthen the core market function: matching supply and demand and fostering inclusive economic growth. The presented case studies will show that sustainable interventions are crucial to get MSMEs ready for the digital economy and for MSMEs to participate in current and new market opportunities. This guide will primarily look at the market for digitalisation services, i. e. services that support MSMEs in the installation and application of digital solutions, which can entail hard- and software as well as digital skills. As the first chapter will show, this market is vital to strengthen MSMEs' competitiveness and profitability.

→ **Definition: Micro-, Small-, and Medium Enterprises (MSMEs):** Micro-enterprises are defined by the World Bank as firms with less than five permanent full-time workers, small enterprises as firms with less than 20 permanent full-time workers, and medium enterprises as firms with 20-99 permanent full-time workers.

More precisely, the guide will shed light on three aspects: First, the theoretical and empirical rationale to support the digitalisation of MSMEs across Sub-Saharan Africa. Second, the guide provides practical case studies of programmes that engage MSMEs and BDS providers to digitalise operations of MSMEs using the MSD approach. And third, it offers some operational reference points on how programmes can apply the MSD approach to further create markets for digitalisation services tailored to the needs of MSMEs.

# 1.1 Digitalising MSMEs

Given the rapidly changing nature of technologies, the definition of the digital economy has been evolving over the past decades.[1] Recently, the definition has been moving away from solely issues of access to information and communications technology (ICT) i. e. digital connectivity. Today, the focus is much more on ways in which digital technologies and services are increasingly disrupting economic activities across traditional sectors, transform the operations of businesses and bring on substantial efficiency gains of the production process *within* various sectors. Therefore, the definition of "digitalisation" used in this report is much more in line with recent work on digital transformation.[2] It understands the digitalisation of MSMEs as the adoption of hard- or software technologies combined with sufficient understanding and skills to actively deploy these new technologies and use them to advance any aspect of the business operations.

The size of Africa's digital economy is growing at an unparallel pace and holds great potential for inclusive and dynamic growth.[3] With ever-rising connectivity, the availability of more affordable IT devices, particularly mobile phones, and a burgeoning tech ecosystem across SSA, the growing size of the digital economy does bring net positive effects on inclusive growth. A recent World Bank publication estimates that a digital transformation could raise growth per capita by 1.5 percentage points per year and bring along a poverty reduction by nearly one percentage point per year.[4] Common conceptual frameworks on digitalisation or digital transformation – also called digitally enabled economic transformation – distinguish between productivity improvements by virtue of structural changes or within-sector productivity gains. Structural changes include transitions across sectors of both businesses and the labour force from less productive sectors, like agriculture, to higher value industries, like manufacturing and services. On the other hand, within-sector productivity gains describe shifts as a result of firms upgrading and business entry or exit.[5]

Equally, the digital economy is more recently defined through the range of new technologies that have enormous potential to revolutionise business operations. These include (i) mobile networks, (ii) cloud computing, (iii) machine learning, (iv) the Internet of Things (IoT), (v) 'big data' analytics and (vi) artificial intelligence (AI), which facilitate the development of smart platforms and applications (e. g. e-commerce platforms, FinTech apps, etc.) as well as smart machines (e. g. advanced robotics and sensors as well as 3D printers).[6] While these cutting-edge technologies certainly offer promising prospects, for most businesses – particularly for MSMEs – the adoption of "basic" technologies, like emails, websites and office software packages, can already bring far-reaching and transformative changes.

Policymakers have recently identified the digitalisation of MSMEs as a key priority area and highlight the potential of digitalisation for MSME growth and poverty alleviation. For example, UNCTAD's *Digital Economy Report 2019* calls upon governments to consider collaborating with the private sector to provide more training to MSMEs on how to leverage digital platforms. USAID's *Digital Strategy 2020–2024* highlights that digital ecosystems have the great potential to equip MSMEs, such as informal merchants, women entrepreneurs and smallholder farmers, with access to markets, information, and finance.[7]

# 1.2 Benefits of Digitalisation for MSMEs

The political attention is based on many perks a digital transformation holds, especially for MSMEs. Besides the case studies that will follow and exemplify the many perks of digitalising operations, this section sheds light on various advantages that can be unlocked through the application of digital solutions.

## DIGITAL INCLUSION AND INFORMALITY

Particularly for micro-enterprises, one of the most ascertained benefits of digital inclusion is that it offers a pathway out of the shadow of informality, broadly defined to cover "all economic activities by workers and economic units that are – in law or in practice – not covered or insufficiently covered by formal arrangements".[8] Various studies found a positive correlation between digital inclusion and financial inclusion as mobile broadband users are more inclined to use mobile money and open up digital bank accounts.[9] This seems because digitalisation can help address some of the most significant barriers – *eligibility and affordability* – towards formality that MSMEs operating in the informal economy have to confront.[10]

## WITHIN-FIRM PRODUCTIVITY GAINS

### › Data Digitisation and Data Sharing

The use of (basic) digital technologies has transformed almost all aspects of business' internal operations: Office software packages (including word processors and spreadsheet software) together with network servers have changed how firms capture and store their data. Most information sharing and communication within an enterprise are now done through digital channels, such as emails, social networks and intranets. This results in faster, more fluid communication and better coordination both among workers and managers.

An extensive empirical study of over 27,000 MSMEs from 42 Sub-Saharan African counties operating in the (formal) manufacturing and service sectors shows that email adoption, as one of the most basic uses of the internet, has a large positive impact on firm performance, namely increases in revenue and labour productivity.[11] Another example is the adoption and use of Microsoft Excel, which will be covered in a case study from Malawi in the next chapter. The Excel application allowed agribusiness better data entry and enhanced data sharing.

### › Data Management and data-based Decision Making

More sophisticated data management solutions allow to instantly collect and continuously update data on various business processes using one integrated database management system. These systems track business resources, like the company's cash flow, the flow of raw materials, production capacity, and the status of business commitments: customers, purchase orders, and payrolls. Thus, data management systems can address many constraints around asymmetric information within-firms: The captured information allows managers to make data-based decisions and optimise productions processes and resource allocation. It increases traceability of inputs and accountability among workers. These technologies also enable workers to access centralised information from production lines and other departments that would normally be far removed from them.

Enterprise resource planning (ERP) systems are the most commonly mentioned technology in the field of data management. Although ERP systems were originally targeted at larger organisations and primarily implemented in high-income countries, more recently, cloud ERPs have also been implemented within SMEs from low-income countries. The case study on shERPa, for example, outlines the approach of developing an

ERP system that is specifically targeted at SMEs from low-income economies.

### › More Supply Chain Integration and better Access to Markets

Digital technologies can significantly reduce the costs of exchange and transactions between MSMEs and their customers (B2C) and with other businesses (B2B), such as input suppliers, aggregators and processors as well as retailers. Perhaps most obvious, ICT allows to circumvent physical market barriers, such as geographical distance from customers, consumers and new markets. For example, establishing a website offers SMEs a path to more effectively and (cost-) efficiently communicate with potential business partners and customers and to market, promote and eventually sell their goods and services to more clients both domestically and from abroad. For instance, in SSA the use of a website is associated with a 50 % increase in total sales and a 152 % increase in exports for SMEs in the manufacturing and service sectors.[12]

With around 60 percent of the Sub-Sahara African workforce gaining their livelihoods through farming practices, agriculture remains the most critical sector for MSME growth and poverty alleviation. Looking at agriculture, ICTs can address multiple market constraints for smallholder farmers and other MSMEs across the entire production cycle.

Information communication technology for agriculture (ICT4Ag), and more recently Digitalisation for agriculture (D4Ag), describe "the use of digital technologies, innovations, and data to transform business models and practices across the agricultural value chain and address bottlenecks in, inter alia, productivity, postharvest handling, market access, finance, and supply chain management so as to achieve greater income for smallholder farmers, improve food and nutrition security, build climate resilience and expand inclusion of youth and women."[13] Applying the D4Ag approach, digital agricultural extension programmes, for example, use text messages or the internet to provide farmers with agricultural market information on prices, high-yielding crop types, best input and fertilizer techniques, best time for planting and harvesting and weather information.[14]

Going one step beyond pure information provision is the burgeoning appearance of e-commerce and agricultural digital platforms ('ag platforms') as well as farming apps that aim to digitalise entire supply chains. Ag-platforms can function like e-commerce and serve as virtual marketplaces that match sellers with buyers while also including critical add-ons like efficient, cheaper and better-quality procurement of inputs, transition to digital payments and access to credits and insurance, as well as share knowledge of best practices both externally, through advisory services, as well as internally among other farmers and stakeholders.[15] Agrocenta, an ag-platform covered in the case studies, is doing precisely that: matching smallholder farmers with large scale buyers and supporting them with other services to enhance their productivity. 'Tracking and traceability' solutions allow digitally tracking how food commodities flow from 'farm to fork' through value chains, thereby increasing transparency and accountability.[16] Despite promising prospects and many theoretical benefits of these D4Ag solutions, it seems too early to provide sound empirical evidence of positive impact at MSME and farmers level. However, some first indicative studies, mainly relying on self-reported data, find yield improvements in the range of 50–300 % and income improvements on the order of 20–100 %.[17] [18]

### › Equal Access to new or better Support Services

The use of technologies does not only create benefits and new access to markets for MSME along their respective value chains. Moreover, digital solutions can also create opportunities to access more or better support services from the enabling environment that MSMEs – particularly those operating in rural areas – were previously excluded from.

The most prominent service of all is digital financial services (DFS). Innovative technologies, like internet banking, mobile-phone-enabled

solutions, electronic money models and digital payment platforms, have transformed traditional banking services. The Financial Technology (FinTech) sector is booming in Sub-Saharan Africa. The region has become the global leader in mobile money transfer services driving widespread access to financial services.[19]

According to a large enterprise survey of SMEs from 14 SSA countries, 44.5 % of SMEs use mobile money (MM) during their business operations. The most common use case of MM is receiving payments from customers (71 %), followed by mobile payments for utility bills (47 %) and suppliers (42 %). Although, the study doesn't find any significant impact of MM on firm performance (due to the small sample size).[20]

Apart from digital payments, there are many more DFS, such as digital savings, credit and (micro) insurance, that MSMEs use regularly. However, the transformative success of the FinTechs and the DFS sector should not outshine other avenues to deliver new services to MSMEs. Most notable, B2B services, such as access to (agricultural) inputs, and digital access to providers of traditional business development services (BDS) and skills development offer promising prospects for further MSME growth and transformation.

# 1.3 The Market for Digitalisation Services in Sub-Saharan Africa

## CURRENT LEVEL OF MSMES DIGITALISATION IN SSA

### Digital Connectivity and Device Ownership

According to the GSMA's *The Mobile Economy Sub-Saharan Africa 2020 report*, there were 477 million unique mobile phone subscribers, or 45 percent of the Sub-Saharan Africa population by the end of 2019. Due to low prices for mobile phone devices and affordable call and text bundles, mobile phones penetration will continue to rise and is expected to reach 50 % of the population by 2025. At the same time, due to continuous infrastructure investments, 3G coverage expanded to 75 %, while 4G doubled to nearly 50 % compared to 2017. Thus, mobile broadband signal and ownership of simple mobile phone devices, not smartphones(!), rarely form some constraints in SSA nowadays.[21]

However, the ownership of smartphone devices with touchscreens and the ability to go online is with 26 percent of the Sub-Saharan population much lower. Therefore, much fewer people can use their phones to go online and participate in the internet economy. Among mobile users aware of mobile internet, the affordability of smartphones and data remains the second most important barrier to mobile internet use, after literacy and skills. Women in Sub-Saharan Africa are even less likely (15 % less likely) to own a mobile phone and 41 % less likely to use mobile internet than are men.[22]

### Registration for D4Ag Solutions

*The Digitalisation of African Agriculture Report* states that over 33 million smallholder farmers and pastoralists across the continent (13 % of all Sub-Saharan African smallholders and pastoralists) have already registered with D4Ag solutions. The sector has been growing at about 44 % per annum over the last three years in terms of the number of farmers reached (i. e., registered for solutions). Some of the D4Ag service providers have begun to gain significant scale with over 1 million registered farmers each.[23]

### Technology Usage

When it comes to active technology usage, the most comprehensive study of over 27,000 MSMEs from SSA finds that 44 % of micro-enterprises (MEs) and 57 % of the sampled SMEs declare using the internet during their operations. These numbers are mainly driven by email usage, while website technology is much less prevalent among SMEs (29 %) and MEs (13 %).[24]

According to the same study, 44.5 % of SMEs use mobile money for their business operations, most commonly to receive payments from their customers (stated by 71 % of SMEs using MM). The second and third usages of mobile money are payments of utility bills (47 %) and suppliers (42 %). Wage payments remain nascent, with only 16 % of mobile money users declaring having used these transactions through mobile money.[25]

In sharp contrast to the large number of people registered for D4Ag solutions, the Digitalisation of African Agriculture Report finds that only 9.5 million people know how to use these solutions and have done so in the past. While only 5 million subscribers actively and regularly use these services to experience their full benefits. The report further finds that even fewer D4Ag users are women, which only comprise 25 % of the whole user base.[26]

Thus, regardless of the sector or the type of digitalisation services, interventions must incentivise a transition from passive adoption to active usage, for example, through digital skills training.

Equally, policymakers should set concrete targets focusing on the number of actual, active

users of the digitalisation services, not passive registration for these services. Only active usage of digitalisation services ensures the success of economic development projects engaging with the digitalisation of MSMEs.

## The Landscape of Digitalisation Service Providers in SSA

Seeing the need for digitalisation and its benefits for MSMEs, on the supply side, an ever-growing proportion of the Sub-Saharan African tech community, as well as traditional business development service (BDS) providers, began to target and serve the MSME customer segment. Building on the broad definition of BDS from the DCED's 2001 publication: "Business Development Services include training, consultancy and advisory services, marketing assistance, information, technology development and transfer, and business linkage promotion."[27], this report defines digitalisation services broadly as any kind of BDS that supports the digitalisation of MSMEs.

Thus, digitalisation services providers also include suppliers of soft- and hardware solutions. They will often advise MSMEs on how to embed these new tools within the business processes and the overall business models of their MSME clients. Incentives to provide digitalisation services range from commercial, social, or purpose-oriented motivations.[28]

## Schools / Universities / Digital Training

A critical presupposition for digital inclusion and adoption of technologies among both individuals and firms are education and digital skills. That involves integrating introductory IT courses in core education curricula as a basis for continued learning as well as more focused pieces of training in digital skills. This is vital to ensure that people and businesses can successfully leverage technology and countries have an adequately equipped workforce of the future.

According to an IFC Report from 2019, the market size for digital skills in Sub-Saharan Africa is estimated at more than 230 million jobs requiring digital skills through 2030. This will translate to nearly 650 million training opportunities through 2030, given that employees will need retraining during this period.[29]

Digitalisation services in digital education range from promoting basic digital and financial literacy at schools and universities and through governmental Digital Literacy Programme, such as the DigiSchool in Kenya. To innovation hubs and similar vehicles that also facilitate on-the-job or peer learning to support entrepreneurs in building IT skills to develop new businesses. And even reach focus on building more advanced technical skills, such as the coding academy at Niger's tech centre and more options for tertiary training in software development and entrepreneurship in Kenya.[30]

## Private-sector-driven Technology and commercial BDS Suppliers

By far the largest group of digitalisation service providers are commercial and social enterprises that are either driven by technological innovations, social mandates or sales / customer acquisition and expansion. The Tech sector in SSA recognised that MSMEs are a vast and largely untapped customer segment when it comes to digital technology and digitally-enabled services. They also realised that very profitable business cases could be made not by directly charging the MSMEs themselves but by charging third party service providers (such as financial or agriculture service providers) to access a large amount of MSMEs through their networks and platforms.

The Briter Bridges' Intelligence platform offers the most comprehensive representation of the tech ecosystem across SSA.

With 445 e-commerce and retail companies, e-commerce is the largest technology sector across SSA. The biggest hubs are in South Africa, Nigeria and Kenya and the most predominant e-commerce service offerings include online retail, online marketplace and food delivery. However, it appears that only very few (11 companies) are working with micro enterprises, including Sokowatch in Kenya (see case study).[31]

The digitalisation for agriculture (D4Ag) or AgTech sector is the second largest segment. As

of 2019, there are at least 390 distinct, active D4Ag solutions across the continent. Most of them from Kenya, Nigeria and Uganda. The sector is rapidly growing with nearly 60 % of the companies commenced in 2016 or after.[32]

There are four types of digitalisation services and primary use cases targeted at MSMEs operating in Sub-Saharan Africa – perhaps unsurprisingly, they reflect many of the benefits seen in section 1.2 above:

- **Advisory & information services** include digitally delivered information on any kind of topic relevant to the business (such as market prices, weather, best practices) and more sophisticated digital advisory service business management software. Advisory services are the most popular among providers because of their ease of delivery.

- **Market linkages** are digitally-enabled solutions that link MSMEs or smallholder farmers either input providers, production machinery and mechanisation services or off-take markets such as wholesalers, retailers (B2B) – or even the end-consumers (B2C). Market linkages solutions have grown in numbers and are now the second largest type of service.

- **Digital financial services (DFS)** relevant for MSMEs, such as digital payments, savings, credit, and insurance, provide MSMEs with access to new capital sources to invest in the long-term growth of their businesses. Digital technologies also allow better cashflow and business monitoring and risk assessments of MSMEs for financial institutions, thereby allowing them to serve MSMEs at substantially lower costs and risks.

- **Digital supply chain management** solutions aim to digitise the entire value chain and monitor all transactions between market players along the chain. These technologies allow better traceability and accountability and enable more commercial players to engage with more MSMEs formally.

## SHORTCOMING OF THE DIGITALISATION SERVICE MARKET

In summary, although the market for digitalisation services is still nascent in SSA, it is quickly growing, highly dynamic and diverse. The following briefly outlines some of the most commonly mentioned shortcomings and market failures – many of which we will see again in the case studies in the following sections.

On the supply side, many providers, particularly large multinational corporations from high-income counties, only offer high-priced advanced solutions that are not contextualised to business environment of low-income counties and are not sufficiently tailored to the needs of MSMEs from SSA. While regional digitalisation providers have managed to reach many MSMEs, they struggle to convert their registered customers into becoming active(!) users of their products and services. This indicates that their current service offering does not solve the underlying problems that MSMEs face – probably because providers themselves haven't yet gotten to the bottom (root causes) of the real problems MSMEs in SSA face.

The on the demand side, critical preconditions for digitalisation, particularly for micro-enterprises, are not always met. For example, smartphone ownership and affordable internet data bundles are a constraint. But also, MSMEs' lack of trust in digital technology can reduce technology adoption. For slightly larger enterprises (SMEs), the issue is not affordability or accessibility of soft- and hardware devices, but lack of human resources and know-how to effectively use basic technological solutions to improve their business operations. For example, companies began to digitise some of their documentation and processes but then do not use the new data points for more informed business decisions.

# 1.4. Market Systems Development – An overview

Section 1.1 above provides some evidence on the underlying assumption that digitalisation leads to economic growth of MSMEs. But for these enterprises to grow and compete on a larger scale, the markets for digitalisation services need to function efficiently (Section 1.2). However, the reality is that there are many obstacles (market failures) that prevent markets from working efficiently and disadvantage smaller firms, particularly in low-income countries.[33] We have seen the shortcoming of the digitalisation service market above.

This has led to the rise of the Market Systems Development (MSD) approach to facilitate and catalyse market-wide changes that bring both economic and social benefits. Applying the MSD approach allows gaining a holistic understanding of the entire market system. A market system is defined by core market transactions, in our case, the digitalisation services provided by commercial and social enterprises, public institutions, and the development cooperation on the supply side and the need for such services by Micro, Small and Medium Enterprises on the demand side. The framework acknowledges that core market transactions do not operate in isolation but are also affected by other factors of the enabling environment. The core market is, therefore, embedded by both the Supporting Functions and Rules & Regulations. Thus, a market system entails – and is shaped by – a variety of market players.

The *supporting functions* build a vital element of the enabling environment – they set the foundation on which any transaction takes place. The aspects of supporting functions affect – and can often explain – the quality of inputs, the production process, characteristics and performance of market players, type of delivery models, supply and demand-side structure, and access within the market system. The *rules and regulations* define the 'rules of the game' and determine the legal and non-legal framework within which core market transactions are undertaken.

The MSD approach then aims to identify the underlying challenges/constraints that prevent the market around digitalisation services from working effectively and hence the digitalisation of MSMEs' operations. Here, the framework aims to drill down and get to the bottom of why the market is not working. By asking a series of *Why?* questions, the approach seeks to identify the underlying causes ("root causes") instead of dealing with symptoms. Root causes are often – but not exclusively – market failures that prevent the market from operating effectively. Such root cause analysis will also inform the design of potential interventions with respect to which kind of support services are required to address the identified constraints.

### SUSTAINABILITY AND INTERVENTION DESIGN FROM AN MSD PERSPECTIVE

Another prime concern of market systems development is Sustainability. This means that implementors are not intervening to distort the market by fixing identified root causes themselves and thereby potentially risk repressing local solutions. Instead, development cooperations ought to understand root causes for market failures and stimulate a change in behaviour of local market players to come up with innovative solutions and fix the identified problems themselves. For example, in the Malawian case study, interviewees warn that ignoring these principles can lead to scenarios where beneficiaries obtain digital solutions for free that they will never use. Donors and implementors are, therefore, advised to work with exsiting digitalisation services providers and try to avoid providing these services themselves.

A key driver of such behavioural changes are *Incentives* of market players on the one hand and *Capacity* on the other hand. Once the incentives and capacity of market actors are understood, market systems development practitioners intervene in the market system by taking a facilitating role. Facilitation refers to temporary actions and ranges from communications, advocacy, and networking to technical assistance, the publication of action research and policy papers – and in some case, financial inducement.

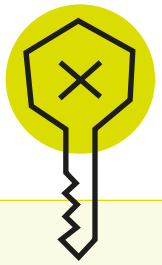
The facilitation approach ensures that MSD practitioners find and support local solutions instead of fixing the problems themselves, thereby becoming part of the market system. Thus, when designing an intervention, implementors should integrate their own exit strategy into the design process. Broadly, MSD interventions are divided into two phases: The Piloting phase and the Crowding-in phase.

The Piloting phase aims to test and create some new innovation to address the identified root causes. Innovation is broadly defined as a new or improved behaviour, practice or technique adopted by the partnering market players. It is often an iterative process of 'trial and error' to stimulate changes and see if and how other stakeholders adapt to them.

**Further Reading on the MSD Approach:**
By highlighting the role of MSD for digitalisation services and the digitalisation of SMEs, this guide aims to be a valuable addition to various MSD knowledge products. For further broad understanding of the MSD approach, there are various valuable background readings, for example:

- The Springfield Centre (2014) The Operational Guide for the Making Markets Work for the Poor (M4P) Approach
- ILO. 2021. Value Chain Development for Decent Work A systems approach to creating more and better jobs – 3rd edition

Now that we've understood the benefits that come along with the market systems development approach and how it can improve a better functioning of the market for digitalisation services, the next section provides some case studies of programmes aiming to enhance the digitalisation of MSMEs in SSA.



# Key Messages of Section 1

- "Digitalisation of MSMEs" defined as the adoption of hard- or software technologies combined with sufficient understanding and skills to actively deploy these new technologies and use them to advance any aspect of the business operations.
- Not solely the most cutting-edge technologies, like artificial intelligence and the internet of things (IoT), offer promising prospects. For most MSMEs, the adoption of "basic" technologies, like emails, websites and office software packages, can already bring far-reaching and transformative changes.
- Basic technologies like emails and office software packages, transformed almost all aspects of communications and information sharing within businesses resulting in faster, more fluid communications and better coordination among workers.
- Particularly for micro-enterprises, digitalisation can offer a path towards formality and financial inclusion for businesses operating in the informal economy.
- Digital technologies circumvent physical market barriers for MSMEs and can digitise entire supply chains allowing more and more MSMEs to reach new customers and markets.
- Due to decreasing prices for mobile phones and continuous infrastructure investments, mobile broadband signal and ownership of simple mobile phone devices, not necessarily smartphones, are rarely constraints for MSMEs in SSA nowadays.
- There is a need for interventions that incentivise a transition from passive technology adoption to active usage of digital solutions, for example, through digital skills training.
- Digitalisation services are broadly defined as any kind of BDS that supports the digitalisation of MSMEs and, therefore, also include the supply of soft- and hardware solutions.
- Digitalisation services in digital education range from promoting basic digital and financial literacy at schools and universities and through governmental digital literacy programmes.
- By far the largest group of digitalisation service providers are commercial and social enterprises. This group provides four types of digitalisation services: Advisory & information services, market linkages, digital financial services (DFS), and digital supply chain management solutions.
- In many contexts, there is a systematic mismatch between demand and supply in digitalisation services. For example, services can be too costly or MSMEs don't have the necessary knowledge to apply a given digital solution.

SECTION

# 2

# CASE STUDIES

# 2 Case Studies

Digitalisation services consist of many different types of business development support, aiming to advance the digitalisation of MSMEs. Digitalisation can then transform various aspects of the operations of these businesses. The following six case studies aim to bring these concepts into context and illustrate some practical benefits. The case studies cover a wide range of the different needs of various types of MSMEs at multiple levels of digitalisation and show how the private sector – with support from the development cooperations – responded. The case studies serve as a source of inspiration and encouragement for development cooperation. Applying the MSD approach to the market for digitalisation services is still rather new and there are only a few projects that follow the path yet. Therefore, the case studies are structured to highlight and draw out key operational aspects of the different initiatives relevant to the MSD methodology.

## OVERVIEW

# Case 1 Building on the Momentum of digitalisation as a response to Covid-19

**COVID-19 SME INNOVATION AND DIGITALISATION SUPPORT SCHEME, GIZ GHANA**

## BACKGROUND AND OBJECTIVE

The Covid-19 pandemic has caused unprecedented disruptions to business operations and productions, supply chains and consumptions altogether leading to immense economic losses across the globe. In Sub-Saharan Africa, due to Covid-19, the regional economy is estimated to shrink by 3 percent in 2020.[34]

The adoption of digital technology presents a vital strategy for businesses to continue their operations and mitigate some of the economic losses caused by the pandemic. Disaggregating dynamics stirred by Covid-19, we can identify pull and push factors that influence digital transformations and offer momentum to strengthen these efforts: Covid-19 has pulled businesses (who used some digital solutions before the pandemic) to intensify further and expand the use of technologies across more (perhaps even all) segments of their business operations. The pandemic has also pushed businesses into digitalisation and increased digital inclusion of companies who were either hesitant or unable to adopt digital technologies before. Thus, the push and pull factors of Covid-19 into digitalisation provided a real opportunity for a leap in digital transformations, particularly among Micro, Small and Medium Enterprises (MSMEs). Building on the momentum, in November 2020 under the Invest for Jobs programme, an initiative of the German Federal Ministry for Economic Cooperation and Development (BMZ), the National Board for Small Scale Industries (NBSSI) – an agency under Ghana's Ministry of Trade and Industry – has received a grant agreement to support innovation and digitalisation among Small and Medium Enterprises (SMEs) operating in Ghana.

The grant agreement called 'COVID-19 SME Innovation and Digitalisation Support Scheme' aims to provide Ghanaian SMEs with digital solutions and trainings. It is a strategy to adapt to emerging market demands brought about by the COVID-19 pandemic. There are two objectives of this initiative:

- To ensure businesses continuity, strengthen SME's resilience to external shocks (particularly during COVID-19), thereby sustaining jobs
- To increase SME's process efficiency and competitiveness through digitalisation and access to knowledge, technology and expertise

## PROGRAMME CHARACTERISTICS

The following states some key characteristics of the *COVID-19 SME Innovation and Digitalisation Support Scheme in Ghana*:

- **Target Group & Outreach:** For the initial pilot, the programme aims to support 500 growth-oriented Ghanaian SMEs with tech-

nical assistance and targeted support in order to support the digitalisation and (process) innovation of SMEs.

- **Departments and Partnerships:**
  - The project does not operate in isolation but falls under the umbrella of the *Special Initiative on Training and Job Creation (Invest for Jobs)* project implemented by GIZ (among other institutions) on behalf of BMZ.
  - Invest for Jobs entered a partnership with the *National Board for Small Scale Industries (NBSSI)* (see Box 1 for further information) via a Grant Agreement from October 2020 until end of March 2021.
  - The Digital Transformation Center in Ghana is part of a pan-African network of flagship projects that the Federal Ministry for Economic Cooperation and Development (BMZ) is building to support the transformation process on the African continent and to improve the preconditions for using digital transformation for more employment and entrepreneurship, specifically in rural areas.

- **Resources:** A grant agreement of EUR €1,500,000 was provided to NBSSI in 2020 with a potential upgrading in 2021 with additional funds for further technical advice, coaching and the provision of additional digital applications.

## ROOT CAUSES AND INTERVENTION STRATEGY

Once the 'COVID-19 SME Innovation and Digitalisation Support Scheme' had been approved, the project started with a detailed analysis of the SMEs' needs, challenges, and potentials with regard to digitalisation and innovation (particularly as a response to Covid-19 pandemic) and also commenced a Diagnostic Survey on digital trends and solutions available and relevant for Ghanaian SMEs. The implementing partners made the conscious decision not to pre-determine any markets or sectors but to assess the needs for digitalisation services across various industries.

**However, SMEs had to fulfil the following Eligibility Criteria to become part of the project:**

- Growth-oriented SMEs with a minimum of 6 employees →
- (Formally) registered Ghanaian-owned enterprises
- Sector-wide approach
- SMEs that fulfil minimum standards in terms of hardware/IT structure availability and know-how
- SMEs particularly affected by COVID-19

Adding these thresholds aims at confirming that the onboarded companies will make best uses of the training and resources they will receive under this project, thereby trying to ensure that the interventions are also sustainable.

→ Thus, micro-enterprises were not targeted for this pilot since they are not the target group of the Invest for Jobs programme and are less likely to fulfil the formalisation and minimum availability and know-how of hardware criteria. Also, through coordination with other donors, such as Mastercard Foundation and the World Bank, it became clear that digitalisation of the micro-enterprise segment is already covered by other programmes.

## CRITICAL CONSTRAINTS

Although the diagnostic activities were still on-going by the time the interviews for this operational guide took place, both GIZ and NBSSI staff were able to point out three initial critical constraints that prevent Ghanaian businesses from digitalising their operations:

**SMEs questioning Digitalisation Benefits**

On the demand side, SME business owners are questioning the expected outcomes from invest-

ments into digital technology adoption. Small businesses are usually both capital and human resource constrained thus have to act with extra caution when it comes to making new investments. Particularly during the economic crisis due to Covid-19, SME business owners need to prioritise production and sales which create the most revenue. Therefore, a clear understanding of the benefits and expected *return of investment* from adopting digital solutions will be critical before SMEs will invest.

Once decided to take on a new solution, managers are often overwhelmed by choice over the type of products that best fits their needs (for example, open-source vs. off-the-shelf product), the range of products (cloud-based vs. centralised solution) and number of different IT providers from whom to purchase.

### Lack of Contextualisation of digital Solutions

On the supply-side, many off-the-shelf or open-source IT products are not contextualised to the needs of SMEs and the Ghanaian business environment. Further, prices for many solutions are not affordable for SMEs.

### Digital Trust

According to NBSSI, many MSMEs in Ghana lack interest in digitalisation due to the perception that the required equipment and IT infrastructure would be too expensive. Some business also voiced concerns that they do not feel secure conducting their business online. Particularly if it comes to digital payments and online transaction, companies are hesitant to adopt these technologies.

## INTERVENTION STRATEGY

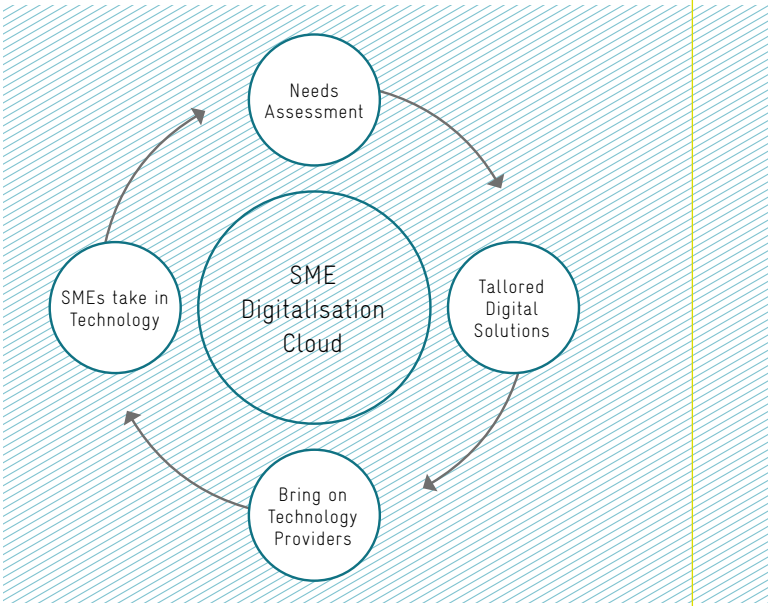
### Building on the Momentum

When it comes to the design of an intervention strategy that will create long-lasting, systemic change, MSD programmes specifically look out for *momentum*, i. e. changes in or around the market system that might lead to further, positive change.[35]

The Covid-19 pandemic and the resulting business disruptions created such, perhaps unprecedented, momentum: The push and pull factors that drove SMEs into adopting digital technologies provided a unique opportunity to digitally transform businesses. The project is therefore set out to explore how digital technology can help SMEs to sustain their operations and to build resilience against future crises.

However, the intervention strategies are not set out to address the symptoms of business loss-making as a result of the pandemic but to keep the mid- and long-term goal of SME growth and job creation in mind. As such, digitalisation of SMEs is just one aspect of business growth and others like access to finance, business linkages and certification are also important.

FIGURE 1: SME Digitalisation Cloud



## INTERVENTIONS AND DIGITAL TECHNOLOGY DEPLOYMENT

Once the SMEs have passed the eligibility assessment and completed the initial needs assessments, they will be admitted to an online SME Learning Management System. This platform is envisioned to be Ghana's SME *Digitalisation Cloud* – a central go-to-platform for all SMEs interested in any aspects of digitalisation.

On the platform, the reports and findings from the initial needs assessment will be shared. These findings will inform the content of the digitalisation trainings and advise on what kind of tailored digital solution will be required. The platform will then allow to bring on selected (national and international) IT providers to showcase their solutions. SMEs can then take on these solutions and provide their feedback back onto the platform.

**Digital Solutions envisioned**

- ERP systems, Customer relations (CRM) solutions
- Invoicing and bookkeeping tools
- Online presence, website development
- Enabling access to finance through digital solutions

## REVENUE MODEL

For the initial pilot, all 500 onboarded companies will receive free digitalisation training. However, only very few will receive software solutions and some will also receive one-time assistance with website / online presence development. Thus, the first pilot companies will experience the real benefits first-hand to then create traction for more SMEs to follow.

## ADDITIONAL INSIGHT

One additional question is that whether or not small companies need sophisticated and complex digital solution already at the earlier growth stages of their business or when they are only at a small size. In the NBSSI's view, there is no problem with providing more sophisticated IT solution to small or early-stage companies. They can use some aspects or modules at the beginning and gradually add on more complex modules of the digital solution as the business grows organically.

# Case 2 Digitalisation does not solve it all: Experience from the Sokowatch platform in Kenya[36]

**FINANCIAL INCLUSION ON BUSINESS RUNWAYS (FIBR), MASTERCARD FOUNDATION KENYA**[36]

## BACKGROUND AND OBJECTIVE

In Kenya, it is the informal sector that drives the size and growth of the country's retail sector. The informal sector accounts for around 70 % of retail sales and almost 80 % of all Fast-Moving Consumer Goods (FMCG) sales. Kenya's informal retail sector is made up of micro-retailers known colloquially as "dukas" in Swahili. Dukas are family owned, micro-enterprise retailers that sell a wide variety of products to a broad range of customers with around 95 % of the Kenyan population frequently making their day-to-day purchases at dukas.[37]

In the highly competitive and dynamic FMCG market, these micro-retailers need access to regular business loans to stock up their inventory. Keeping a fully stocked store signals to customers that the shop is in good business standing and thereby attracting and retaining new and more loyal customers that would quickly go to a nearby shop otherwise, if they cannot find the desired products.

Within this ecosystem, wholesalers – that already solved most of the logistical challenges of supplying micro-retailers and know them well – are uniquely placed to offer credit solutions to these businesses. Facing stiff competition themselves, these suppliers are competing on short delivery times, the variety of products, low prices and best customer service. Thus, the provision of tailored credit solutions offers yet another critical differentiator against other competitors.
In 2013, a new digital service provider entered the competitive landscape of wholesale: Sokowatch, an East African e-commerce platform, that aims to assist informal retailers in East Africa by offering them a digital platform to order their stock via SMS or through a mobile app, and guaranteeing free, same-day delivery. Ever since Sokowatch has been constantly growing and expanding - and recently named by *Fast Company* magazine as one of the 10 most innovative companies in Europe, the Middle East and Africa (EMEA).

Despite initial success and several micro-retailers coming on to the platform, Sokowatch struggled to convert registered duka owners to actively use Sokowatch's services and make future inventory purchases directly through the mobile platform – a common issue of digital platforms in Sub-Saharan Africa. It was only when partnering with the *Financial Inclusion on Business Runways* (FIBR) project, a partnership between Mastercard Foundation and BFA Global, that Sokowatch learnt that the reason for the low activity on their platform was not the transition from physical to digital, but the fact that other physical competitors were already providing tailored credit and payment solutions to their micro-retail customers.
Thus, together with the FIBR team, Sokowatch

started integrating a new credit line in their payment system that gave duka shop owners the option to take out small loans and defer payments. The Sokowatch experience shows that digital service systems can only be sustained if they solve all of the root causes that prevent MSME from growing – in this case they needed to offer access to finance and flexible repayment features!

## PROGRAMME CHARACTERISTICS

**Departments and Partnerships:**

- FIBR's project partner *Sokowatch* is an e-commerce platform that provides informal retailers with the option to order their supplies digitally at any time via SMS or through a mobile app and then guarantee free, same-day delivery. In addition, if micro-retailers regularly purchase their supplies through the mobile platform, they are able to build up their payment (and credit) history – based on digital transaction records – allowing them to opt for short-term credit financing and deferred payments.
- The *Financial Inclusion on Business Runways (FIBR) Project*, a partnership between *BFA Global* and *Mastercard Foundation* in Africa, was designed as a Research and Development (R&D) project to test innovative digital solutions to digitise the informal economy around micro and small enterprises (MSEs). The results and learning from the tested digital products and services informed digital service providers (DFS) and other financial institutions on how to design and roll out digital credit, loans, savings and insurance products to underserved MSEs across East Africa. As an R&D project, FIBR was, therefore, not intended to reach scale but rather to test and explore new digital pathways to reach micro and small enterprises that were often overlooked.[38]

**Resources:**

- For the credit solution pilot, Sokowatch received a flexible grant worth US $100,000 and venture building support from BFA Global's team of fintech specialists through the FIBR project.

## ROOT CAUSES AND INTERVENTION STRATEGY

Starting the pilot, Sokowatch and the FIBR team uncovered two critical constraints. One that related to digitalisation and one relating to access to finance of MSEs:

**Smartphone barriers and low rate of active usage of the Sokowatch platform**

In 2018, of all 5,000 micro-retailers registered on the Sokowatch platform at the time, only around half used the Sokowatch app on a smartphone and were, therefore, able to benefit from all features of the app. While affordability of devices and connectivity were not the main constraints for micro retailers in Kenya; some of them were not 'smartphone-ready' for business. For example, affordable smartphones were likely to be second-hand models that were older or damaged, and had faulty hardware, outdated operating systems, and lower data and storage capacity. Many users didn't know how to download or use apps while some merchants also preferred not to use their smartphones for business which could get stolen, and rather only for personal purposes.

Of the half that did own a smartphone only 150 shop owners were actively purchasing their supplies through the app. The reason for this was not the transition from a physical to digital purchasing process, but rather the lack of payment flexibility features, which discouraged Sokowatch's customers from purchasing their stock through the app.

**Sokowatch platform was missing critical payment features**

When the FIBR team started interviewing duka shop owners in Sokowatch's target area, they found that all shops already received credit from at least one physical wholesaler. Suppliers offered

credit options to increase retention and loyalty, and thereby differentiated themselves from other providers.

Among Sokowatch's competitors, local wholesalers already offered delivery services, competitive prices and most importantly provided three types of credit to Sokowatch's customers:

- **Deferred payments** where micro-retailers could pay their supplier in a couple of days after they earned enough cash from their daily sales.
- **Staggered payments** where shop owners only made a partial payment at the time of purchase or reimburse their supplier in instalments.
- **Revolving credit** line where business could still make additional orders on credit as long as they repaid a portion of the outstanding balance.

Sokowatch, however, did not offer any of these credit and payment options on the app. This severely prevented shop owners from purchasing their supplies from Sokowatch. Eight out of 18 dukas interviewed said that they left Sokowatch to buy from other suppliers where they could make their orders on credit or defer payments.

## INTERVENTIONS AND DIGITAL TECHNOLOGY DEPLOYMENT

### The new digital credit solutions

With the support of the FIBR team, Sokowatch designed and added a new credit component to its platform. The credit options were divided into four tier levels of credit limits which were determined by previous transactions. The limit would increase when the credit history was good (and downgrade in case of bad credit history). In addition to repaying the original loan, the merchant also paid a small markup („interest") based on their credit rating. Shop owners would then have up to seven days or until the next order to settle their balance.

### Data-driven Credit Scoring and monitoring of Loan Portfolio

Sokowatch was able to use the digital transaction records – both, records of cash purchases and credit histories – as alternative sources of data to design and refine its credit offering to the dukas, while also managing its risks.

Through the mobile platform, Sokowatch was able to track usage, collections, and reconciliations, and put in place appropriate processes and monitoring tools so that all departments – from retail units to the credit department – could keep track of the payment performance of their customer as well as manage the overall loan portfolio.

## RESULTS

During the six months of the pilot, Sokowatch disbursed more than 100 loans totalling US$ 6,000 to 12 dukas. While this was a small number of initial shops, the observed repayment behaviour was promising:

Over 50 percent of the eligible shop owners used the credit option, and all loans were repaid with only two delinquent customers paying after the seven-day default period.

**The pilot revealed three types of borrowing behaviour among dukas:**

- **Weekly borrowers (25 percent):** Customers that, for example, every Tuesday paid back their previous purchases and then ordered again. The shop owner bought on credit, made a profit and then ordered again.
- **Occasional borrowers (25 percent):** Customers that made cash payments more often than credit but would make use of the credit option when the need arose.
- **Cash users (50 percent):** Customers that always and exclusively made cash payments, even though they were aware of the credit options offered to them.

## INSIGHTS AND LEARNING

- **Smartphone readiness constrains service take-up:** Of all the Sokowatch customers in Kenya, only around half owned smartphones, which was a critical precondition for digitalisation. And while some users may have owned smartphones, they were 'smartphone-ready' for business. Some merchants also preferred not to use their smartphones for business which could get stolen, and rather only for personal purposes.
  If device cost were a barrier for those micro-retailers without smartphones, one way Sokowatch could have expanded access to smartphones could have been through 'pay as you go' (PAYGo) models in their credit offering to finance smartphone ownership.

- **Be solution-driven, not technology-driven:** Out of the registered Sokowatch customers with a smartphone only 150 actively purchased through the app, while the remainder preferred to order their supplies from physical, local wholesalers. This was because local wholesalers offered payment options (such as deferred payments, staggered payments, and revolving credit lines) that were better tailored to the dukas' needs and thereby outweighed potential benefits from using an e-commerce platform.
  A low rate of usage among registered customers of a digital platform or other solutions should always be a warning sign. It may be an indication that users do not perceive enough value from the application and that there are other obstacles not yet addressed by the digital solution that prevent usage.

- **Digitalisation rarely happens on its own:** Digital service providers, like Sokowatch, needed to complement their services (e. g. apps or platforms) with physical face-to-face engagements, a "tech and touch" approach, which could be effective through an agent model. Agents are important to educate and train existing and potential new customers about the digital platform and all its features (particularly if they entail more sophisticated services, like credit and repayment solutions). A standalone "how it works" guide in the app is not enough to get customers to adopt these solutions. Thus, it is essential to train field agents to onboard new customers effectively and to find the best commission structure to align agent incentives. For example, digital wholesalers that provide credit options also need to train their agents to help customers understand and use the digital features, manage the end-of-day reconciliations and to follow-up with delinquent customers on their repayments.

# Case 3 Digitalisation of Agribusinesses: It's about the Journey, not the Destination!

**KULIMA MORE INCOME AND EMPLOYMENT IN RURAL AREAS (MIERA), GIZ MALAWI**

## BACKGROUND AND OBJECTIVE

The private sector in Malawi is characterised by a vast amount of over 1.1 million MSMEs with more than two thirds being micro enterprises, 23 percent are small enterprises and only three percent are medium enterprises.[39] KULIMA MIERA aims to enhance employment and income opportunities in rural areas of Malawi with a special focus on women and youth. With over 20 percent of the Malawian adult population deriving their livelihoods from the MSME sector[40], KULIMA MIERA supports smallholder farmers and MSMEs to build their business capacity and relationships, add value to their products, access improved services and productive resources and engage in structured markets.

The programme follows the market systems development approach and focuses on seven selected agricultural value chains, namely Cassava, Groundnut, Soybean, Sunflower, Paprika/Chilli, Macadamia and Rice.

When it comes to the extent to which MSMEs used technology in their business operations in Malawi, about two in three MSMEs use (and own) business technological equipment such as a mobile phone, fax machine, a website or use a computerised record keeping system. However, most of the technology adoption is driven by MSMEs using mobile phones.[41]

Looking at agribusinesses for example, technology adoption without mobile phones drops down to under one percent due to lack of access to electricity and particularly to digital literacy.[42] KULIMA MIERA has therefore targeted the digitalisation of agribusinesses' operations through a series of workshops and individual consultations on data management.

Here, the key message that the team aims to bring across to these businesses is that digitising the data management systems is a gradual transition, meaning business owners and managers should start slowly moving from paper to digital, starting with proper use of the Excel application,

to then bring on more sophisticated IT solutions at a later stage. Thereby addressing the perception among some MSMEs that digitalisation of their operations can be solved by purchasing the latest trend of a high-end digital solutions. When actually: *It's about the Journey, not the Destination!*

## PROGRAMME CHARACTERISTICS

**Programme Interventions:**
KULIMA MIERA has three main intervention pillars, namely the Promotion of inclusive business models and facilitating stakeholder dialogue, then improving value chain services, and thirdly Supporting the business capacity of farmer organisations and MSMEs. Under the first and second pillar, KULIMA MIERA supports committed agribusiness companies to set up mutually beneficial, economically viable and inclusive business relationships such as contract farming that provide agricultural inputs, extension packages and act as end-market for smallholders by off-taking the produced commodities at fair and market competitive prices. On the demand side, the programme adopts very specific interventions for each value chain and for every partner. It is under the demand side where most ICT and digitalisation related challenges are being addressed. On the supply side, KULIMA MIERA implements three common approaches, as most of the challenges at the farmers' and MSME level are similar across all the value chains:

- **Farmer Business School (FBS)** is a comprehensive adult learning approach that targets changing the mindset of smallholder farmers by sensitising them to market opportunities.

- **Farmer Organisation Business Training and Coaching Cycle (FO Cycle)** makes use of a systematic combination and alteration of assessment, training, peer-to-peer learning and coaching of leaders and selected members of farmer organisations.

**MSME Business Training and Coaching Loop (MSME Loop):** The aim of the MSME Loop is to enhance the entrepreneurial competencies of business owners of MSME.

**Resources:**
KULIMA MIERA has one dedicated ICT focal person for the programme coordinating any digitalisation efforts both directly with the private sector and within the delivered three types of trainings mentioned above.

## VALUE CHAIN SELECTION AND ROOT CAUSES

**Value Chain Selection and Digitalisation**
KULIMA MIERA commissioned a series of in-depth value chain analysis for their existing VC Cassava, Groundnut, Soybean and Sunflower as well as six new value chains to explore the possibility to venture into two or three additional VCs under the project.

The value chains were assessed against five criteria: (i) Market Demand & Product Value Addition, (ii) Private Sector, (iii) Income, Employment & Inclusion, (iv) Environmental, and (v) Feasibility & Additionality.

For the value chain selection, the level of digitalisation of smallholder farmers and MSMEs was not set out as an end in itself. Much rather, the focus was on the purpose and sustainable impact digitalisation of operations can have. As KULIMA MIERA's ICT focal person puts it: "We see digitalisation as an option but not as an objective in itself, so if it helps to create jobs and increase incomes then we'll consider improving digitalisation."

**Critical Constraints**
In the Malawian context, the team found that it is not the availability – and mostly not even the affordability – of IT technologies and/or software solutions (i. e. having a desktop computer with Excel on it) that is preventing MSMEs from digitising their operations. Instead, the following challenges, that relate more to human resources and capacity, were found:

- The capacity in the use of Excel is poor, many data issues could be improved by better utilisation of this basic programme.

- While internal processes are initially driven by paper, the data gets frequently digitised and is not being validated at later stages of the business processes. This makes data highly fragmented and not possible to link together to provide an overview of operations without considerable analysis.

- The time and resources dedicated to digitising data were significant among all partners. To leverage the value of data generated by existing operations, it needs to be put into a format which is easy to analyse.

## INTERVENTIONS AND DIGITAL TECHNOLOGY DEPLOYMENT

KULIMA MIERA, therefore, conducted a data management workshop for SME agribusiness in Malawi. The workshop explored the data management issues, provided a framework to assess internal processes. A clear message presented is that data management starts with the core business activities. This enables company-wide impacts usually from data that is already collected but highly fragmented and sometimes not digitised. A second message is to start simply in a familiar format (Excel) to learn how to link data sets together; only once this is clear move to databases.

Next, KULIMA MIERA developed the *Data Management Good Practice Guidelines* for agribusinesses. The guide provides five practical and simple steps to strengthen data management practices within these businesses:

- **Step 1. Audit existing files:** Start by conducting an audit of the existing files (normally in Excel) and documents to gain an overview of your current system.

- **Step 2. Map out the existing processes:** This exercise aims to design a process flow chart to capture what actually happens at all layers and stages of the business. And then, identify all activities where data is generated and how and where such data will be shared.

- **Step 3. Analysing the process map:** Analysing the process map enables you to identify how the process could be improved. The map will highlight delays or difficult steps that should be explored and solutions to how best to solve them proposed. Focus on what will add value to the company and contribute to stronger processes elsewhere.

- **Step 4. Identifying what is business essential data:** The first three steps will give you an overview of key processes to be obtained. This perspective is very useful to prioritise data and identify what is essential to manage your critical business processes.

- **Step 5. Enhancing capacity to analyse:** When data is more accessible, transferable and standardised, it frees up resources for analysis. Successful companies in general are able to respond quickly to issues, understand trends and effectively plan and implement activity based on data-driven decision making.

## INSIGHTS AND LEARNING

The team learnt that it is more important to assess and improve the skills level of the partner companies first and then to advise on the development of a more gradual digitalisation strategy: First, you need to go from paper to digitisation of paper, then proper use of Excel, before you start purchasing more advanced (off-the-shelf) IT solutions. Thus, digitalisation is a progressive process and not just solved by obtaining the most high-end IT solutions.

For example, one of KULIMA MIERA's partner companies had five software solutions to work with farmers, but they didn't use any of them. Another project partner does collect a vast amount of data on their business transactions and operations, but neither management nor other workers do process or analyse the collected data. A balance between data collection, proces-

sing and analysis can help consolidate ICT use.

The learning that buying off-the-shelf digital technologies does not solve the digitalisation hurdle for targeted MSMEs does not only apply to business owners but also development programmes themselves. The KULIMA MIERA team observed that some other programmes, in Malawi still provide IT solutions for free to their beneficiaries. Thus, the message of development cooperation is not harmonised and MSME business owners will seek out opportunities to obtain the technology for free from other programmes.

The focus on strengthening digital skills and a gradual digitalisation strategy also entails a more market-driven approach: Once SMEs gained a better understanding of their specific needs for digitalisation and have the capacity to evaluate the value propositions of each digitalisation service provider themselves, they can identify and source the support that is best suited to fulfil their needs.

# Case 4 10x More Digitalised Small and Medium Enterprises by 2030

GIZ
SHERPA

## BACKGROUND AND OBJECTIVE

Enterprise resource planning (ERP) systems digitalise business processes and allow to collect, instantly review and continuously update data using one integrated system. Broadly, there are two types of ERP systems: Off-the-shelf ERPs that are installed onto the internal business servers and cloud-based ERPs that enable businesses to use third-party web-based applications and store data remotely. Since most of the current solutions are mostly targeted at larger companies predominantly from high-income countries and often do not meet the needs of MSMEs in low- and middle-income countries, a team of experts from GIZ decided to tackle this market failure by bringing a very basic, modular, cross-sectoral and open source ERP solution to these businesses.

The GIZ Innovation Fund is an annual, company-wide call for ideas from all GIZ employees around the world to support innovation and thus enhance GIZ's services and improve the impact of GIZ projects. The challenge question for 2020 was: *"10x more by 2030: What's your idea to boost the impact and sustainability of our projects?"*

In response to the call for concepts, a cross-functional GIZ team, submitted a proposal called *"10x More Digitalised Small and Medium Enterprises by 2030"*. The idea is to develop a new open-source enterprise resource planning (ERP) solution – called shERPa – that addresses the needs of SMEs from low-and middle-income countries.

In November 2020, the shERPa proposal won the award for the category *"Best Product/Service"* of the GIZ Innovation Fund. As a reward, the team shERPa received grant funding of EUR 75.000 to develop, contextualise and pilot the shERPa solution with up to 50 SMEs from Jordan and Kosovo. The goal is to further roll out the solution across GIZ's partner countries.

## SHORT-COMINGS IN THE ECOSYSTEM

During the Acceleration Phase of the GIZ Innovation Fund, team shERPa engaged with different industry players to identify the pain-points of MSMEs when it comes to digitalising their business processes:

- Leading ERP-service-providers, like SAP, Oracle or Microsoft, do not necessarily target MSMEs from low- and middle-income countries. These MSMEs lack the capital and knowledge to make use of proprietary

ERP software offers. Additionally, training and certification opportunities are often too costly or require time-consuming and cumbersome travel for essential staff based in low- and middle-income countries since training centres might not be located in the vicinity. Proprietary software also creates path-dependences, which make switching software difficult and can lead to vendor-lock in vicinity.

- Local, regional and international IT-companies provide support to implement ERP solutions within MSMEs from low- and middle income countries. However, implementation costs, licencing and maintenance cost are an often a high and intangible investment at an initially unclear return of investment for MSMEs.

- Open source ERP solutions, such as Odoo, only offer certain elements of their software for free. However, for more advanced features, add-ons, and a higher number of users per module customers will be charged

- On the demand side, local SMEs are often unaware of the relevance, benefits and return on investment of ERP solutions as such. Businesses that know about open source ERP solutions often lack the technical skills and capacity to introduce and utilise these solutions into their business processes themselves. Another issue is the lack of trust in open source solutions.

- Open source ERP solutions often rely on a system of peer-learning and exchange without standardised training courses for different target groups. MSMEs do not have the staff and time to follow unstructured learning paths.

## THE SHERPA SOLUTION

To address some of the above mentioned market failure of insufficient supply of services to MSMEs based in low-income countries, when it comes to the digital transformation of business processes, team shERPa plans to develop a lean, cross-sectoral, modular, open source ERP solution, that concentrates on the most thought after modules within ERPs.

- Accounting
- Customer Management
- Human Resource
- Inventory Management

Working with local SMEs, where needed these modules will then be contextualised to the regulatory framework of the respective country. For example, to comply with the local accounting practice and tax requirements.

The benefits of ERPs for SMEs are increased efficiency, less error-prone paper-based processes and more competitiveness. Linking to larger supply chains and international buyers can also be made easier with ERP systems in place.

## IT-SERVICE DELIVERY MODEL

During the 8 months long maturation phase the shERPa team is in discussions with existing open source ERP providers to gauge the possibility to use an existing open source ERP solution as the foundation for shERPa.

Once a partnership agreement is reached, the existing open source ERP will be simplified and made more user-friendly for MSMEs with limited digital skills and resources. These planned adaptations are key to strengthen shERPa's applicability, scalability and relevance across different sectors

The value added by shERPa and its planned business model will be the provision of training opportunities for local IT-companies and multipliers such as business associations and chambers of commerce. This supports IT companies in including open source ERP solutions such as shERPa into their service portfolios offered to their clients. The trainings aim to cover how shERPa operates and how to introduce and maintain it at local company level. Chambers of commerce and business associations can provide advice to their members regarding open source EPRs and possibilities how to digitally

transform business processes. As multipliers they can connect SMEs to IT-providers. The trainings provided by shERPa shall have a training of trainers component to increase sustainability of the measure and to make shERPa accessible to more IT-providers.

shERPa's partner structure is set up to accommodate the long-term scaling up to other countries.

shERPa plans to partner with GIZ projects from the field of private sector development to scale the solution to other countries and explore how to best building on existing structures such as the "Certified Digital Consultants" providing advice on digital transformation to SMEs.

## REVENUE MODEL AND EXIT STRATEGY

In order to enable access for MSMEs from low- and middle-income countries, shERPa is an opensource solution provided for free. This also reduces initial costs for IT-providers, as no costly licences etc. is needed. The team plans to build a sustainable revenue model around the solution. This is done by integrating IT-providers in the development, maintenance and customer training and acquisition process. As well as involving local chambers and business associations to council MSMEs interested in digitalising their business processes.

Once local IT providers went through the training provided by shERPa and its partners, they can integrate the tool into their offer of services. The IT-providers themselves can implement the open source ERP solution at MSMEs and train their staff. In order to get MSMEs interested during the pilot-phase and increase momentum, shERPa is exploring different modalities: e. g. voucher schemes to cover the implementation and support costs for a short initial set amount of time. Any additional IT-support would need to be procured by the MSME with an IT-provider directly. The premise is that local IT-providers are roped in, by expanding their service offer in a cost-efficient way: most focus on proprietary ERP systems and could now expand their skill sets also regarding other programming languages and open source tools. The trainings about shERPa will be made available online and will be promoted via different channels to raise awareness about them. The trainings are to be developed and maintained together with the respective open source ERP community. The local chambers of commerce and business associations could support with the outreach to interested MSMEs and IT-companies about shERPa. Thus, this approach offers an exit strategy in the long-run.

Learning and Insights from the shERPa approach

There are four key elements of shERPa's approach that are relevant for digitalisation of MSMEs and the MSD approach:

- **User-Centric:** The focus on contextualisation and (participatory) joint software development ensures that the shERPa solution is tailored to the needs of MSMEs in low- and middle-income countries while also creating ownership of the approach and revenue among local IT providers.

- **Local Value Creation:** By building an ecosystem for ERP installation, maintenance and training around the open source shERPa solution, local IT providers can create additional value and integrate the solution into their own service offering.

- **Sustainability:** The open source nature of the solution and the localisation approach mean that a diverse base of SMEs should be able to afford and adopt shERPa, while receiving support from their local ecosystem. Additionally, the trainings for IT-companies and multipliers on shERPa are planned to be made available online to increase uptake.

- **Scalability:** The path to scalability is two-fold: firstly, building shERPa on the basis of an open source ERP means that local IT providers can develop additional features to meet arising SME needs. And secondly, as shERPa can be translated and localised, it can be relevant in different contexts and rolled out to a growing number of users via, for example, GIZ projects in the field of private sector development.

# Case 5 It's not about the technology but how technology can solve problems!

AGROCENTA,
GHANA

## BACKGROUND AND OBJECTIVE

In agriculture, digital supply chain solutions can open new pathways for smallholder farmers that would be excluded from markets otherwise. The Ghanaian agritech startup, AgroCenta, set out to do exactly that: Serving rural farmers through a digital solution. In this section, we will see how they encountered and overcame several challenges along the way: Key for AgroCenta's success was not based on the technology itself but on how they used different technologies to solve the problems they encountered. Their story serves as a good example as to why the private sector is often better placed to overcome some of the market failures of low-income countries – one of the core principles of the market systems development approach.

## TECHNOLOGY AS A PATH TOWARDS ACCESSING MARKETS

AgroCenta was founded by Francis Obirikorang and Michael K. Ocansey in 2015. Knowing about the rising interest among both impact investors and donor organisations to finance agriculture related companies, Francis and Michael decided to visit some smallholder farmers from outside of Accra in the Northern rural parts of Ghana to find out what challenges they faced. Initially, they encountered two critical problems:

- Due to **a lack of access to structured markets**, farmers were unable to sell their entire produce after harvesting and were forced to sell to middlemen at very low prices.
- Farmers did **not have sufficient financial means and access to saving and loan products** to invest and run their business efficiently. Selling their produce in bits and pieces made it impossible for them to have adequate income to plan for their personal needs and inputs for the next farming season.

AgroCenta, therefore, decided to launch a digital platform to connect smallholder farmers and institutional produce buyers. The aim was to buy all the harvest from the farmers at once in order to ensure that they have access to bulk cash that allows them to plan for their personal needs as well as the next planting and harvesting season.

## A CUSTOMER AT THE RIGHT TIME

AgroCenta, therefore, started to look out for customers that needed bulk purchasing. And it just so happened that Guinness Ghana Breweries Limited – one of the first potential clients that AgroCenta approached – were looking for alternative options to shift their inputs from barley

(previously imported from South Africa) to maize that Guinness could source locally, thereby reducing on costs and also gaining a more sustainable solution to make their malt beers. Thus, Guinness immediately took up the offer and placed an ad-hoc order through AgroCenta's platform.

## THE BIGGER THE CHALLENGE, THE BETTER THE SOLUTION

To fulfil Guinness Ghana's order in a timely fashion, AgroCenta needed to solve the logistics and transportation challenges of bringing the crops from the smallholder farmers' farm gates all the way up the supply chain.

This led to the emergence of a software add-on called *TruckR* that allows AgroCenta to track all their deliveries as well as use an SMS function to contact the various truck drivers to collect certain orders from the warehouses to deliver them to the processing factories.

At farm level, AgroCenta's agents use tricycles to collect the goods which are also tracked through the platform. For traceability, a bar code is printed and stuck on the sacks when they are collected from the farms. The bar code will then be scanned upon entry of each next step along the supply chain such that AgroCenta's clients could track and monitor all steps through the app and identify the exact location where the commodities came from.

The application also helps to know how many farmers are needed to fulfil a certain order and tracks data on the exact location, gender ratio, farmers' family sizes, their literacy levels and other household data.

Thus, step-by-step AgroCenta was able to digitalise the entire supply chain adding on new features to overcome any challenge that occurred. The digital supply chain management tools were eventually consolidated into one app now called *CropChain* which today has over 48,000 farmers signed up and over half a million USD worth of commodities traded.

## A NEW 'ACCESS TO FINANCE' FEATURE

With ever growing orders from Guinness and other off-takers, AgroCenta was constantly on the lookout to onboard new farmers on to the CropChain platform. For instance, when a GIZ-funded smallholder project in the Brong Ahafo region phased out, the project team linked the farmers they worked with to AgroCenta to onboard them onto their platform and to guarantee continuous access to markets. Still, AgroCenta's production volume was constrained and eventually not big enough to fulfil Guinness' orders. This was at a time when already 15,000 farmers were registered on AgroCenta's platform. The reason was that AgroCenta worked with smallholder farmers who on average only owned about 5 acres of land.

Thus, the AgroCenta team was looking for new sources of financing for farmers so that they could upscale their land to 10-15 acres. However, with no paper trails or financial records showing the amount of produce these famers produced or money they earned, it was impossible to get any loans from the banks or other financial institutions.

To address the lack of access to finance, AgroCenta decided to switch their payment system from cash to mobile money transactions. Now farmers could use the proof of their financial history and evidence of positive cashflows as guarantees to apply for larger, individual loans from different financial institutions.

Posting their idea on LinkedIn, AgroCenta was approached by Ecobank's Pan African Savings and Loans who had been looking for ways to reach the informal sector, specifically the agriculture sector but did not have a specific product in place. Both parties entered a partnership that led to the birth of AgroCenta's second application *LendIt*, a payment platform that links farmers with financial institutions and also provides a payment solution between AgroCenta and their farmers. The platform also provides farmers with access to Pensions through a partnership with Enterprise Trustees Limited, the biggest pensions management company in Ghana.

## DONOR SUPPORT

LendIt became a reality when AgroCenta responded to a call for application by the GSMA's *Ecosystem Accelerator*. The proposal to build the entire LendIt platform was selected and AgroCenta received a grant of GBP £250,000 to build and pilot the LendIt product. The grant significantly helped AgroCenta to speed up the development and roll out of this critical feature for farmers.

Ecobank is now able to serve clients that they would not be able to reach without the digital platform. Since launching LendIt in January 2019, 17,680 smallholder farmers are now active on the platform.

Earlier in 2017, Agrocenta won the ITC World Export Development Forum (WEDF) Young Entrepreneurs' Pitch Competition. Winning the competition not only provided Agrocenta with exclusive access to mentors from Google and ITC colleagues from youth and trade to further improve their pitching decks, but the new platform and publicity also attracted a lot of other potential investors. Agrocenta later went on to win the Seedstars Global Competition in 2018 after beating 65 other finalists from around the world.

These examples show how development partners can sometimes open doors and create new investment opportunities. Simultaneously, also how more direct interventions can speed up the establishment and growth of innovative, inclusive businesses in the markets.

## THE STORY CONTINUES …

Today, AgroCenta is one of the biggest agritech platforms in Sub-Saharan Africa providing one of the most holistic solutions. The team set themselves the vision to become the biggest commodity trading platform on the continent and empower over 5 million smallholder farmers to be financially independent and trade fairly.

# Case 6 The essential role of partnerships in the successful digitalization of agribusiness in Uganda

**MOBIPAY UGANDA**

## BACKGROUND AND OBJECTIVE

Agriculture employs 70 % of the population in Uganda. However, agricultural value chain actors, particularly rural smallholder farmers, are faced with a plethora of challenges, which have not been fully addressed.

**These include:**

- Limited access to financial services/ products which would meet their urgent and specific needs
- Low access to markets
- Limited access to agricultural extension services- market, climate/weather information
- Limited access to comprehensive Management Information Systems (MIS) for data integration and management for improved decision-making as well as strategic planning

The International Trade Centre's Netherlands Trust Fund IV (ITC's NTF IV) programme aims to enhance export competitiveness of the IT sector in Uganda by empowering SMEs and tech startups through capacity building and business linkages. ITC offers mainly trade related technical assistance and links SMEs and tech start-ups to potential investors, partners and buyers. NTF IV launched a call for applications in June 2019. Along with 45 other tech startups, MobiPay was selected as a beneficiary.

In order to address the listed problems above, MobiPay, an Africa-based international technology solutions company registered in Uganda, has developed solutions for farmers that:

1. integrate and manage data for improved decision-making as well as strategic planning,
2. increase visibility, market connections and improved access to market for producers, and
3. provides limited climate/weather information that is key for business decisions.

## CHALLENGES

Although mobile phone penetration in Uganda has been high, gradually building a critical mass of users of feature phones and, increasingly, smartphones, the high internet costs and poor connectivity hinder the uptake of mobile based solutions in rural Uganda.

Moreover, the mindset shift from manual and paperwork to technological platforms is still limited by insufficient knowledge and use of digital tools such as laptops, tablets and smartphones in the agricultural sector.

Another challenge has been the cost of transactions as charged by mobile money operators and banks as well as limited agency banking and mobile money networks to serve rural customers after receiving funds. These include both cash withdrawal and deposit costs.

## APPROACH & PARTNERSHIPS

MobiPay is an Africa-based international Agri-Fintech company registered in Uganda, with a vision to offer high-tech solutions and innovations for agricultural value chain actors feeding the world.

Mobipay utilizes a market system development approach to impact the farmers as end users, by working with farmer groups, agro-development partners, commercial banks, micro-finance institutions, savings and credit cooperative societies, village savings and loan associations, off takers, insurance companies, agro processors, mobile telcos and retail merchants.
Mobipay aims to become the primary agri-Fintech company that provides agricultural value chain actors with access to customized financial services/ products, integration & management of data for improved decision-making and strategic planning. This also increases visibility, market connections and improves access to market as well as climate/weather information for the farmers they are serving, contributing to the digitalization of the agribusiness sector. Mobipay also empowers women and youth to be an integral part of the agricultural value chains with access to sustainable, economic and livelihood opportunities through their innovative Digital Community Entrepreneur (DCE) model.
To achieve this, Mobipay has developed comprehensive and innovative products and services:

- Agro value chain Management Information Systems (MIS) for farm/farmer registration and data management for decision-making and strategic planning
- Digital payments and services for advancing financial services including bulk payments, mobile money and e-vouchers, which digitally support organizations that are offering seed and input subsidies to farmers. The evouchers were for instance used by The Palladium Group and Mercy Corps to provide seed subsidies to host and refugee farmers in the districts of Moyo and Yumber.
- A digital market platform for improved market connections and trading
- An e-extension platform for dissemination of relevant, timely & extension advisory information to farmers
- Agency banking that provides financial services to the underserved population

The development of these services was based on an extensive needs assessment for which Mobipay combined interviews, focus group discussions and desk review of research by individuals and organizations. Their analysis of the market informed them that smallholder farmers faced many barriers to business development that could be eased through the introduction of digital solutions.

For example, many farmers lack records on production, buyer/offtake details, land under cultivation. Moreover, the farmers did not have sufficient access to information on price trends, pesticides and disease, weather predictions that greatly affect their production and incomes. Another factor that affected farmers was poor access to credit / loans, savings, insurance and the lack of a convenient money transaction service. Production challenges related to the

access to quality seeds, logistics, land preparation, extension services and market linkages have been a major drawback to farmers.

At the market system level, products and services of MobiPay were developed due to the following enabling factors that favoured digital solutions:

1. Increased mobile money usage & awareness made digital transactions an important alternative which contributed to increased transaction volumes
2. Well established policy frameworks that promoted digital bulk payments and agency banking
3. Agri-processing and seed companies understanding the relevance of Management Information Systems for data management, digital purchasing & payment
4. Traders and off-takers familiarized with the potential of digital markets and payment solutions

## INTERVENTIONS

Mobipay's successful intervention built on partnerships with private and public players: their intervention was not isolated but focused on changing the market system of services offered to smallholder farmers with digital tools. Each partner brought a specific, complementary set of benefits to the table:

**With the support of the UN Capital Development Fund (UNCDF) Digital Innovations in Agriculture program**, MobiPay launched its innovative Digital Community Entrepreneur (DCE) Model (Agent network) in the Northern region of Uganda. The DCE model is focused on working with smallholder farmers mainly the youth and women to promote digital financial services products and clean energy solutions among the last mile population. The DCE agents also engage with the farmers and train them if they have difficulties with a digital solution, for example trainings on mobile money literacy or e-extension trainings.

This support does not only improve farmers' livelihoods, but also allows the youth to attain entrepreneurial skills and financial stability. The focus areas of this project are selling mobile phones, clean renewable energy (Solar) to the farmers, sensitizing farmers on the use of digital financial services like mobile money and financial services and products from commercial banks and how to use a phone the right way while the youth are employed as Digital Community Entrepreneurs.

MobiPay and cooperatives, that most smallholder farmers belong to, sign a beneficial agreement. Besides the digitization, MobiPay ensures that services such as inputs, markets, access to phones, solar home lighting and agriculture production are brought to the farmers. To access these services a farmer is required to use the platform. Mobipay also provides hand holding through its agents to ensure the use of the platform as well as cost saving while using it.

**With the MTN & Airtel mobile money partnerships**, MobiPay is fully integrated to Airtel and MTN as payment and collection aggregators; the company also set up 100 MTN and 200 Airtel mobile agent networks in rural communities to support transactions by farmers. Through such partnerships, MobiPay has added bulk payment services to the company's line of business, this revenue stream has picked up and is contributing greatly to the company's growth.

**With the support of the International Trade Centre's Netherlands Trust Fund (NTF) IV Uganda project**, Mobipay's management was coached to effectively identify the company's niche and competitive advantage within the Agritech market system. A side benefit of the support has been streamlined communications within the company. The team has also been trained to effectively take up responsibilities: employees are interacting and supporting customers more effectively and efficiently contributing to Mobipay's customer retention strategy.

Moreover, Mobipay was enabled to develop a strong customer segmentation leading to the refining of segment-specific products. The compa-

ny is also in the process of implementing portfolio management, where each client is given a portfolio manager to be effectively managed. To further elaborate its services, MobiPay is enjoying numerous trainings including digital marketing which is shaping our understanding of communicating our products and services to potential buyers through our various social media portals and websites.

## RESULTS:

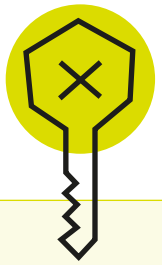
1. The total number of farmers reached 206,000 with 90,000 actively transacting on the various Mobipay platforms
2. Working with 70 farmer cooperatives, 650 rural producer organizations, 17 agribusinesses.
3. Processing USD 40,000 on average per month in payments.
4. 510 youths (males 364 and 146 females) Digital Community Entrepreneurs (DCEs) working across Uganda

## INSIGHTS AND LEARNING:

1. **Beyond the technology, partnerships and networks are crucial for growth and sustainability**
   Technology is an enabling vehicle that is very effective in delivering services and products to the intended buyers. Providing technological solutions alone, however, may not provide the needed long term sustainability, which is why Mobipay has built partnerships with companies that offer value-added services, such as MTN and Airtel. Partnering with development projects such as UNCDF and ITC makes scaling also easier and faster.

2. **Adapting the user experience**
   Through the use of applications such as the Mobipay USSD platform, a farmer with any phone is able to access the platform and gain access to needed information and services. The Mobipay agent network supported by the field officers has enabled farmers to receive services at a minimal cost. Farmers also have access to receiving money on their phones (Mobile Money) which is supporting them in saving and regulating their expenditure

The agribusiness such as the off-takers or the buyers now have access to information/data that enables them to estimate yields of farmers, this enables them to plan their financials as well as match commodities purchased against funds. The ability to track commodities purchased from farm gates to the warehouses or factories has triggered usage of our agrobase platform.



# Key Messages of Section 2

› The push and pull factors of Covid-19 into digitalisation provided a real opportunity for a leap in digital transformations. Building on this **momentum**, GIZ Ghana and NBSSI planning to build Ghana's SME Digitalisation Cloud – a central go-to-platform for all SMEs interested in any aspects of digitalisation.

› In Kenya's highly competitive fast moving consumer goods market, Sokowatch, an East African e-commerce platform, aims to assist informal retailers in East Africa by offering them a digital platform to order their stock. Their experience has shown that **smartphone readiness** constrained service take-up, low rate of active users was a warning sign that they not yet perceive enough value from the application; digital service providers, needed to complement their services with physical face-to-face engagements, a "tech and touch" approach.

› KULIMA MIERA in Malawi learnt that digitalisation is a progressive process and not just solved by obtaining the most high-end IT solutions. The team took a more market-driven approach: Strengthening digital skills and a better understanding of the value proposition allowed SME agribusiness to identify and source the support that is best suited to fulfil their needs **themselves**.

› A cross-functional GIZ team plans to develop a new open-source enterprise resource planning (ERP) solution – called shERPa – that addresses the needs of SMEs from low-and middle-income countries. They aim to create a user-centric solution with local value creation and a sustainable revenue model that can be easily scaled and adopted.

› The Ghanaian agritech startup, AgroCenta, provides digital supply chain solutions open new pathways for smallholder farmers. The platform has been constantly growing with new features, such as crop traceability and a digital payment platform.

› MobiPay in Uganda puts the user experience in the centre and adapts its services to the needs of smallholder farmers. MobiPay carries out trainings for these farmers on mobile money literacy and thus ensures that these farmers become active users.

SECTION 3

# REFLECTION POINTS

# 3 Reflection Points: Market System Development and Digitalisation Services for MSMEs

The case studies above show the many facets that digitalisation services and the digitalisation of MSMEs can take. We have encountered a range of constraints that prevent digitalisation of MSMEs, ranging from typical market failures to lack of trust and bad perception in digital solutions. We also saw how private-sector driven solutions could help overcome some of these constraints and create a path toward sustainability. Thus, there are many aspects that draw on the Market Systems Development approach.

The MSD approach provides both: First, some guiding principles on how to design market development programmes that lead to sustainable results. Second, the approach offers some key operational steps along the programme implementation cycle.

The following section, therefore, aims to both refine and adapt how fundamental MSD principles relate to the goal of digitalisation of MSMEs. It then lays out some critical programme and intervention design steps and highlights important points of reflection that need to be considered by MSD programmes that aim to enhance the digitalisation of MSME by developing a well-functioning market for digitalisation services.

As mentioned, this guide aims to be a valuable addition to various MSD knowledge products and assumes some general knowledge and understanding of the MSD methodology among the readers of this guide.

# 3.1 A Market Systems Analysis for Digitalisation Services

Every MSD intervention design phase begins with a market systems analysis (MSA). The MSA describes the research and analysis that is carried out to gain a deep understanding of the core market system and identify any constraints (mostly market failures) that prevent the systems from working efficiently.

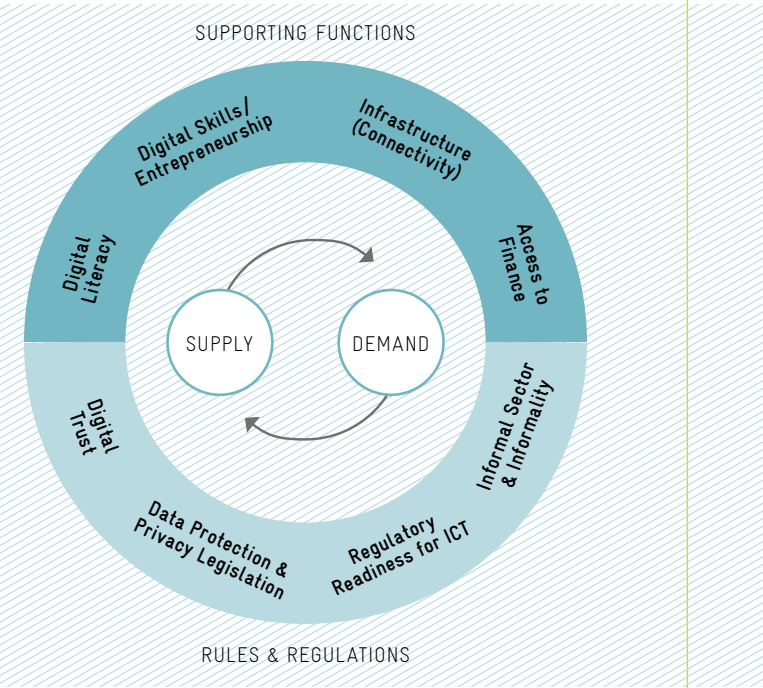
## CONTEXT MATTERS

A market systems analysis often involves populating the market systems 'doughnut' – a graphical representation that shows the core market and different dimensions – or sub-components – of the Supporting Functions and Rules & Regulations. The composition of the doughnut always depends on the context: The set of stakeholder and how they interact, the geography and regulatory framework. Thus, there is no "one fits all" approach and the doughnut should always be developed from scratch. Further, MSD practitioners mostly view the MSA as an iterative process where the analysis aspect is on-going and part of the intervention.

## CORE MARKET

At the heart of each market system is the core market – the central exchange platform between digitalisation service providers on the supply side and the MSMEs that receive these services on the demand side. The first focus of the MSA, should always be on the core market paying close attention towards the key market players and analysing how they behave and interact.

FIGURE 2: A MSD Doughnut for Digitalisation Services




**TOOLS**
**for Market Systems Analysis**
The BEAM Exchange's Guidance section on Market analysis details 15 important aspects of a market systems analysis. Then, the ILO provides a practical User-friendly Guide that details all operational steps of market systems analysis process.

**How to assess the demand for digitalisation and for digitalisation services:**
- Through existing large scale business surveys and databases, e.g. the Worldbank's Enterprise Surveys or the FinMark Trust Data Portal.
- By conducting your own needs assessment for digital solutions (see next section) and run further surveys.
- By tapping into existing channels like programmes M&E framework, tech companies' customers database, etc.

**Key Inputs for the Provision of Digitalisation Services**

There are some key inputs required in any development of digitalisation services: Most importantly human resources, primarily software and technical engineers as well as IT specialists for the more technology-based services, while more consultants and managers for the more service-based solutions. Other costs are for hardware including computers and servers, for communication and connectivity in form of electricity, internet and mobile data bundles as well as rent for offices and training facilities.

**Digitalisation Services Providers and their Service Portfolio**

On the supply side, while the specific list of digitalisation service providers will vary depending on respective geography and concrete type of service (and, therefore, go beyond the scope of these guidelines). Section 1.3 provides the broad landscape of digitalisation service providers across SSA.

To map out an initial list of digitalisation service providers, the chambers of commerce for the ICT sector, IT business membership organisations or other semi-governmental IT business agencies are good partners to get a first understanding of the landscape of digitalisation service providers. For startups, that are often not registered yet, there are sometimes online portals that list tech companies, for example Briter.

**Demand for Digitalisation Services**

Equally, on the demand side, most characteristics of the MSMEs depend on the geography (e. g. urban vs. rural), predominate industry (e. g. agriculture vs. micro-retail) and overall target group for digitalisation as defined by the programme's objectives and scope.

## SUPPORTING FUNCTIONS

The Supporting Functions set the foundation for any market transaction. Their different components often determine:

- Quantity and quality of inputs
- Production process
- Characteristics and performance of market actors
- Type of pricing and service delivery models.

The following four functions particularly affect the market transactions of digitalisation services. These areas serve as a reference point and should be closely looked at when conducting a market systems analysis.

## DIGITAL LITERACY

On the demand side, MSMEs will only utilise digitalisation services if they understand the digital solutions and can see what kind of positive outcomes these services will bring. It is therefore important to assess the level of digital literacy among the target group.

## DIGITAL SKILLS AND ENTREPRENEURSHIP

A tech-savvy workforce allows service providers to find and hire workers with relevant skill sets. Digital and IT skills cover a wide range starting from a basic understanding of office applications thought as schools, all the way up to programming languages and technology development obtained through universities and technical training centres. For example, IFC's Report on digital skills provides a methodology to assess the demand for digital skills and determine training opportunities.

Entrepreneurship, general business management skills and e-business skills – the ability to operate and manage a digital business – are also important so the digitalisation service providers can grow.

## INFRASTRUCTURE (CONNECTIVITY)

While access to mobile broadband signal and phone ownership is rarely a constraint for MSMEs in SSA nowadays, sufficient internet penetration still is a barrier in some geographies. Particularly for internet-based solutions, internet connection has to be not only stable and fast enough but also affordable for MSMEs.

Access to hardware/devices as well as software applications is often a constraint. Many MSMEs, particularly micro-enterprises, can only afford second-hand smartphones that are older or damaged and may have faulty hardware, outdated operating systems, and lower data and storage capacity.

Providers, on the supply side, sometimes lack access to affordable software programmes and do not have sufficient capital to invest in hardware equipment (laptops, servers, sensors, other diagnostic equipment).

## ACCESS TO FINANCE

Access to finance is a common constraint and found in almost every market systems analysis. Most businesses will need financing support at some point during their growth phase. However, there are some specific challenges affecting the market for digitalisation services:

### Intangible Assets not accepted as Collateral

On the supply side, access to growth financing for the tech sector in SSA remains a prevailing constraint. Most digitalisation service providers hold a large amount of intangible assets that are not physical, such as human resources, intellectual property, computer software and licences. However, banks and other financing institutes struggle to accept these intangible assets as collateral and are, therefore, hesitant to provide short- and medium- term loans.

### R&D requires Access to Risk Capital

R&D activities, such as product testing and customer surveys, require risk capital that is often scarce. Here, as see with the case study on FIBR, development programmes can support these activities through (matching) grant provision.

### Combine Digitalsation Services with PAYG Options

On the demand side, a lot of digitalisation services require (at least) owning a smartphone. Here, digital financial services, such as pay-as-you-go (PAYG) options provide a path for increasing accessibility. However, these digital payment solution require both digital and financial literacy. In general, capital expenditure to obtain any kind of technology provide major hurdles for MSMEs that are already capital constrained.

## RULES AND REGULATIONS

### Digital Trust

Apart from digital literacy – the understanding of digital solutions – having digital trust among MSMEs is another essential precondition for the technology adoption and active usage of digitalisation services.

Digital trust describes the good faith of customers in the integrity, reliability, credibility, transparency, and security of technology and services. For example, as seen in GIZ Ghana case study, many MSMEs do not feel safe conducting their business online or revealing sensitive data to third parties, particularly financial information. Others question whether digital solutions will bring the promised business results and lead to a positive return of investment.

Building digital trust, particularly among first-time users, also takes time and rarely happens on its own. Thus, it is important to accompany and complement the rollout of digitalisation service with physical support (see Section 3.3).

### Data Protection and Privacy Legislation

While digital trust mostly concerns the demand for digitalisation services, trust in technologies could certainly be improved if there is proper legislation put in place to secure the protection of data and privacy.

As of 2020, 32 of all African countries have enacted data privacy laws.[43] UNCTAD's Data Protection and Privacy Legislation Worldwide provides a good overview of the current status on legislation to secure the protection of data and privacy for all countries across the globe.

Further, to ensure proper enforcement of these new legislations, some SSA countries began to establish independent national data protection authority (DPA) which tasks are primarily to monitor and enforce compliance with the data protection legislation, to receive complaints from data subjects and to sanction offenders.[44]

Therefore, some industry organisations give out their own guidance and principles on how to protect the privacy of their customers and develop digital products and services that are ethical. For example, GSMA released the GSMA Mobile Privacy Principles and more recently the added some guidance[45] on the ethical use of artificial intelligence in in low- and middle-income countries.

**Regulatory Readiness for ICT**

More broadly – part from data protection and privacy legislation, the ITU's ICT Regulatory Tracker provide a high-level, country-by-country assessment of the fast changing of ICT regulation in general. The Tracker does not measure the quality, the level of implementation or the performance of regulatory frameworks in place but records their existence and features.[46] Thus, it helps track progress and identify gaps in regulatory frameworks that might affect the market for digitalisation services as well.

**Informal Sector and Informality**

As mentioned in section 1.2, new technologies can provide a path towards formality – which is a continuous transition as opposed to an 'either/or' process. Many traditional development programmes trying to address informality have struggled to achieve tangible results and often only touch upon symptoms. However, following the MSD approach, before addressing informality it is more important to get a deep understanding of what formality is and why the informal sector exists. Such analysis will also inform better design of digitalisation services that target customers from the informal sector. For example, the a recent publication of the ILO explores how MSD can be used to tackle informality and also provide some practical case studies and lessons learnt.

# 3.2 An indicative Stakeholder Assessment

After checking for the rules and regulations as well as the supporting functions for the core market of digitalisation services, a stakeholder assessment must be carried out. The core stake holders are, of course, MSMEs and digital service providers. This section looks at both and which aspects are particularly important for the assessment.

## MSME ASSESSMENT FOR DIGITAL SOLUTIONS

For the success of any digitalisation service the real need and actual benefits of digitalisation on the MSME side need to be well understood. Only if there is sufficient demand and a real use case for digital solutions, digitalisation services for MSMEs can sustain in the market and attract providers that are committed to serving this customer segment.

MSD programmes, therefore, are advised to undertake (several) needs assessments themselves or tap into the customer assessments from existing BDS providers or tech companies. The aim is to:

- Test whether critical **preconditions for digitalisation** (sometimes called digital readiness) of MSMEs are met. The Seven A Checklist, for example, provides seven categories (Availability, Access, Affordability, Ability, Attitudes, Aspirations, Anticipated risks) that should be tested before rolling out any kind of digitalisation service. Note that many of these categories might be shaped by the prevailing conditions within the *Supporting Functions and/or Rules & Regulations.*

- **Carry out a Digitalisation Service Needs Assessment:** Next, to establish the demand for a particular digitalisation service and/or technology, it is important to assess the actual need for digitalisation. To get an accurate picture it is important to test the level of *awareness, perceived needs* (i. e. asking MSME business owner directly what they need) and the *perceived benefits* of MSMEs that already used some digitalisation services before.

  Testing for the perceived needs assumes that MSMEs are *aware, understand and know* what kind of digitalisation service they need. However, this is often not the case, particularly for services that MSMEs have never employed before and, in some cases, not even existed on the market before.

  Thus, in many cases, MSME business owners are *not aware* that they require digitalisation support, nor do they know what kind of digitalisation service they need. This phenomenon is defined as 'latent needs'.[47] Thus, asking for the perceived benefits of other MSMEs that already received digitalisation service controls for latent needs.
  On the other end, beneficiaries sometimes overstate their need for digitalisation support and will request for the most high-end, sophisticated solution (see case study GIZ Malawi). To counter that, programmes are advised to triangulate between findings from bottom-up consumer surveys and the advice from external digitalisation experts (top-down approach).

- **Assess the purchasing Power and Willingness to pay:** The fact that MSMEs demand digitalisation services might not mean a) that they are able to afford them or b) (even if they could afford them) that they are willing to buy them. Testing MSMEs purchasing power and willingness to pay is another important exercise to further test affordability and inform the services delivery model and pricing strategies of service providers.

## DIGITALISATION SERVICE PROVIDER ASSESSMENT

Many of the constraints and challenges regarding the provision of digitalisation services depend on the adequate performance of the digitalisation service providers. That is why looking at the supply side and trying to understand *why* market players behave a certain way is also important.

A key driver that affects market behaviour are the *Incentives* of market players. These can be broadly distinguished between *commercial* incentives, such as profit-making and reaching commercial viability, and *purpose-driven* incentives, such as fulfilling the mandate and commitment of an organisation.

- **Serving MSMEs as customers** *(Commercial Incentives)*: Many digitalisation service providers identified MSMEs are a large (mostly untapped) consumer market and trying to find innovative solutions to serve this market. They do this mainly for profit-making purposes. However, the revenue streams do not always come from charging the MSMEs directly, but by opening up their networks and reach to MSMEs to other third-party providers, e. g. FinTech or agricultural service providers.
- But also, the contrary applies. Some providers consider MSMEs, particularly in rural areas, as unattractive and costly to reach. They prefer serving larger companies in urban areas that a higher spending power.
- **Fulfilling a Mandate** *(Purpose-driven incentives)*: Some organisations are given a specific mandate to provide digitalisation services. These could be schools and universities as well as business membership organisations and industry associations.

The second critical element that affect the behaviour of market players is *capacity* which is made of *technical* capacity – the knowledge and ability to execute actions – and *financial* capacity, i. e. sufficient funds to perform actions.

The specific characteristics of each digitalisation service provider will vary and needs to be established on a case-by-case basis.

MSD programmes will then often map each market player on the "Will-Skill" framework (see Springfield Operational Guide) and depending on where a market player is placed proposed different type of interventions and support.[48]

# 3.3 Reflection Points: MSD Intervention Design for the Digitalisation Service Market

Once the market systems analysis is completed and the main characteristics of the key stakeholders are understood, the design phase of the actual interventions can begin. This section provides a first set of principles, hints and concepts for designing MSD interventions in the market for digitalisation services for MSMEs.

- One of the main principles for MSD practitioners is to **Act as Facilitators**. This means working with the existing market players and try to support and encourage them to tackle the identified root causes themselves. The market systems analysis provides an in-depth understanding of *how the market is functioning*. The MSME needs assessments shows *what kind of services MSMEs need* and the digitalisation service provider assessments show *why providers offer the exciting or future services*.
  Now when starting to conceptualise new intervention strategies, practitioners often start by developing a vision of *how the market should be functioning*.

- **Catch Momentum.** To prioritise on where to intervene first, take a look at the current market situation and see if there are any opportunities to shift the momentum towards digitalisation of MSMEs. With GIZ Ghana, for example, we have seen that Covid-19 pandemic provided a big push and pull towards digitalisation of MSMEs.

- **Right-sizing of Technology Deployment.** There are still some (traditional) non-MSD programmes that provide free hand-outs of devices or purchase (off-the-shelf) software solutions for MSME beneficiaries. This will rarely lead to sustainable outcomes and risks to distort local markets for digitalisation services. We need to remember the experience of the GIZ Malawi KULIMA MIERA, where one of the programme's partner companies received five software solutions from different development programmes but did not use any. With regard to the right digitalisation strategy for MSMEs and the right level of IT solutions that should be placed in these companies, there are two lines of thinking:

  - **Some practitioners think that the technology deployment should be a gradual process starting with the most basic type of digital solutions.** A good starting point is to take a look at the digital devices and software solutions that are already in possession of the enterprise. It will be more (cost-)effective and sustainable, to train MSMEs to fully utilise their existing equipment, instead of purchasing (or encouraging them to purchase) the latest solution on the market. Thus, MSMES can obtain additional digital solutions as they gradually grow their business.
  - Other practitioners believe that if businesses are presented **with more sophistcated digital solutions from an early (growth) stage, they will eventually grow into using some of the more advanced features of the solutions as well.**

  Future learning and evaluation will determine which of the two approaches works best. It will also depend on the type of digitalisation service and growth stage of the supported business. **Possibly, a mix of the two approaches – for example, by allowing for add-ons – might be the best.** Also, affordability of the technology will be a deciding factor and likely favour to start with more affordable and simpler solutions first.

- **Gain deep understanding of the pricing and delivery models for digitalisation services.** It is important to understand how

digitalisation service providers delivered their services to MSMEs and the payment flow that is reverting back from the MSMEs to the providers in return. Payment flows and delivery models vary across the different types of services providers.
As seen by the AgroCenta case study, one of the reasons why agricultural (digital) and e-commerce platforms have had large success in the digitalisation of MSMEs is because these service providers realised that very profitable business cases can be made by not directly charging the MSMEs themselves, but by charging third-party service providers (such as financial or agriculture service providers) to access a large amount of MSMEs through their networks and platforms.

- **Be solution-driven, not technology-driven!** In some cases, the MSA and the MSME digitalisation service needs assessment will show the need to develop a new digitalisation service that does not yet exist in the market. If projects decide to develop a digitalisation service, the service development should be a joint venture with one or more service providers. Or at least, the developed service should be eventually handed over to a project partner. Before even starting with the digitalisation service development, the design team should spend some time to precisely answer the following questions:
  - *What problem is the proposed technical solution or service trying to solve?*
  - *What (economic or social) benefits for MSMEs do we expect from digital adoption?*
  - *Is the level of sophistication of the proposed technical solution appropriate for the (growth) stage of the supported MSME(s)?*

  Any kind of digitalisation service, particularly IT solutions, should be *solution-driven* as opposed to *technology-driven*. Meaning that these solutions should actually solve some of the MSMEs' problems and bring about real economic or social benefits. Ignoring the *Solution First, Digitalisation Second* principle might risk that programmes and their partners spend a lot of time and resources on digital solution that MSMEs do not actually need.

- **Digitalisation rarely happens on its own.** Digitalisation service providers often need to accompany and complement their services with physical face-to-face engagements, a "tech and touch" approach, which can be effective through an agent model. Agricultural digital and e-commerce platforms often rely on agents who help to maintain and acquire new customers, train them on the services as well as provide general customer support. As we have seen in the FIBR Case Study, a standalone "how it works" guide as part of an application is not enough to get customers to adopt these solutions. Here, MSD programmes can help with training of agents and advice digitalisation service providers on appropriate payment schemes for their agents.

- **Consider the Principles for Digital Development.** The Principles for Digital Development provide nine useful principles on how international development organisations can include digital technologies into their own programme design. Many of these principles are relevant for the design of MSD interventions in the market for digitalisation services. Thus, readers are encouraged to follow these principles and see how they match and complement the points of references given in this guide.

# 3.4 Digitalisation and Systemic Change – An illustration

## GETTING TO SCALE

The goal of market systems development is *Getting to Scale* or achieving *Crowding-in*. While pilot interventions are broadly designed to stimulate some new behaviour – in our case, for example the adoption of a new technology among a small number of pilot MSMEs – and thereby set out an 'demonstration effect' to other market players. Crowding-in describes the process where a wider range of other market players begins to observe and react to the demonstration effect created during the piloting phase.

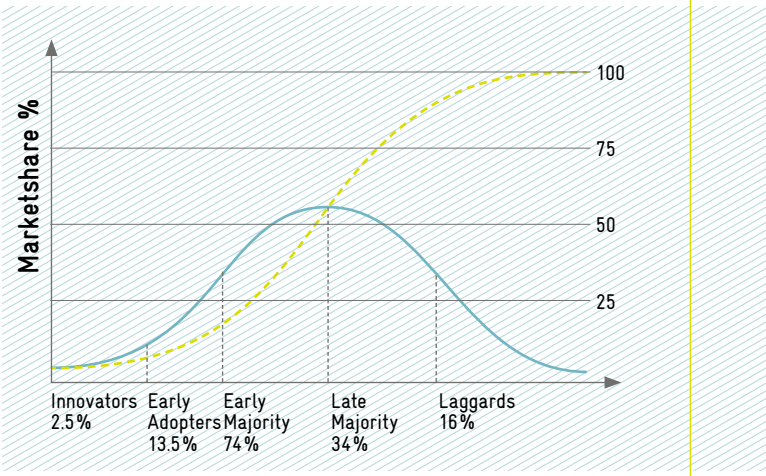
As mentioned, MSD interventions often aim to trigger some behavioural change. Once an intervention partner has successfully adopted the new behaviour or strategy, e. g. successfully launched a new e-commerce application, they placed a first-mover stakeholder in the market or what MSD practitioners call 'positive deviant'.

When now other market players observe that the new strategies pays off and brings better solutions and benefits ('demonstration effect') they have an incentive to adopt the new behaviour themselves. This can lead to catalytic effects that MSD practitioners describe as *systemic change*.

High-tech products are particularly prone to sudden and catalytic behavioural change. There are many parallels between MSD programmes and the *Technology adoption life cycle*, first defined by Rogers' *Diffusion of innovations*[49] who classified consumer into five basic categories: innovators, early adopters, early majority, late majority or laggards (see Figure 4).

Perhaps the most bespoken example of systemic (and transformative) change as a result of local and contextualised innovation emerged within the telecommunication sector and – as many perhaps have forgotten today – come through the

FIGURE 3: Systemic Change and Innovation Diffusion




support of a market (systems) development intervention: M-PESA, the mobile money application from Kenya was first supported by a UK-funded economic development programme.

However, most of the time getting to scale takes time, and only a few interventions are likely to get to scale. Programmes should not take the demonstration effect for granted and early majority adaptors can require as much, or even more support, than the early adoptors.[50]

## 'CROWDING-IN PHASE' INTERVENTIONS

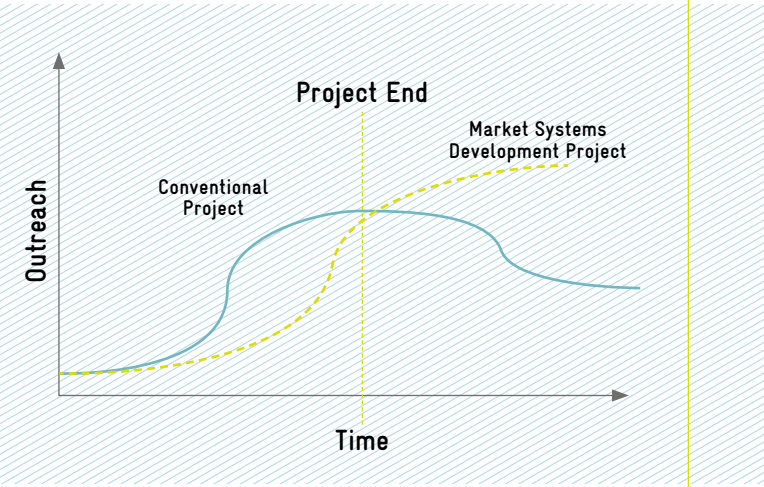
Thus, there are additional interventions required that ensure that not only a few selected partners from the initial piloting phase benefit from the support but that the economic and social benefits spread widely across many actors from the entire market system.

**No wins without engaged or active users**

As we have seen above / Studies have shown that some digitalisation service providers, particularly D4Ag services, struggle to convince registered users to *actively* use or at least *regularly engage* with their services. But without any uptake these solutions hardly will bring any benefits to registered MSMEs.

Thus, (at latest) during the crowding-in phase, programmes should work with these providers and try to uncover the root cases as to *why registered MSMEs remain passive users*. A high proportion of passive users should be a serious warning sign signalling that Digitalisation Service providers ignored the *Solution First, Digitalisation Second Principle*.

FIGURE 4: Sustainability over time

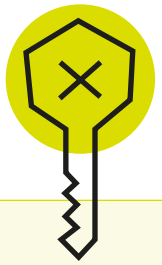



### BEAM Exchange and Future of this Guide

This guide aims to serve as a helpful tool in the endeavour of strengthening the market for digitalisation services for SMEs. It is seen as a living document that is to be updated based on the experience gained from international development projects. We would like to explicitly encourage you to share your suggestions for changes or ideas for additional tools. All ideas and comments to further elaborate on this approach are extremely welcome. It is our aim to collect more practical examples and perspectives from different countries and facilitate the sharing of experience between colleagues.

If you have questions or suggestions, please contact us using the following email address: private.sector@giz.de

We would also like to highlight BEAM Exchange as the knowledge platform for Market Systems Development. It is being updated regularly and holds many further resources and showcases current developments in the approach.



# Key Messages of Section 3

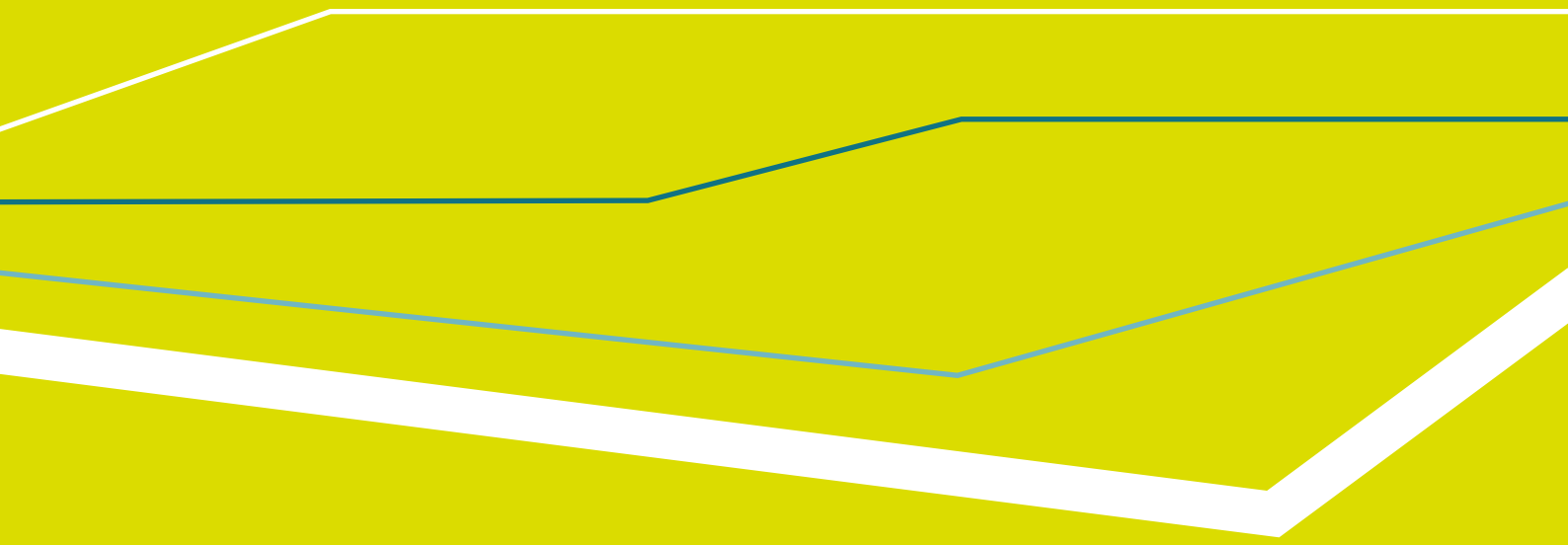
- The MSD approach provides both: First, some guiding principles on **how to design** market development programmes that lead to sustainable results. Second, the approach offers some **key operational steps** along the programme implementation cycle.

- Every MSD intervention design phase begins with a market systems analysis (MSA). Above we have seen a preliminary – and more high-level – representation of the market system for digitalisation services at the regional Sub-Saharan African level. Beside the core market, relevant sub-markets of the supporting functions cover Digital Literacy, Digital Skills and Entrepreneurship, Infrastructure (Connectivity), and Access to Finance. While the Rules & Regulations include Digital Trust, Data Protection and Privacy Legislation, Regulatory Readiness for ICT and Informal Sector and Informality.

- For any digitalisation service with a sustainable revenue model, the real need and actual benefits of and for MSMEs need to be well understood. Thus, it's important to test whether critical preconditions for digitalisation of MSMEs are met, carry out a service needs assessment and assess the purchasing power and willingness to pay.

- Some reflection pointshints for designing MSD interventions in the market for digitalisation services for MSMEs:
  - Act as facilitators!
  - Catch momentum!
  - Right-size of technology deployment (gradual adoption vs. gradual features)!
  - Understand of pricing and delivery models for digitalisation services!
  - Be solution-driven, not technology-driven!
  - Digitalisation rarely happens on its own!
  - Consider the Principles for Digital Development!

- There are many parallels between MSD programmes and the technology adoption life cycle, first defined by Rogers' diffusion of innovations. However, most of the time getting to scale takes time, and only a few interventions are likely to get to scale. Programmes should work with providers and try to uncover the root cases as to why registered MSMEs remain passive users.



# LISTINGS

# List of abbreviations

| | |
|---|---|
| **B2B** | Business to Business |
| **B2C** | Business to Consumer |
| **BDS** | Business Development Services |
| **BMOs** | Business Membership Organisations |
| **BSc** | Bachelor of Science |
| **CCM** | Customer Communications Management |
| **CRM** | Customer Relationship Management |
| **D4Ag** | Digitalisation for agriculture |
| **DCED** | Donor Committee for Enterprise Development |
| **DFS** | Digital financial services |
| **GDP** | Gross Domestic Product |
| **GDPR** | General Data Protection Regulation |
| **ICT** | Information and Communication Technology |
| **ICT4Ag** | Information communication technology for agriculture |
| **IoT** | Internet of Things |
| **ISPs** | Internet Service Providers |
| **IT** | Information Technology |
| **ITC** | International Trade Centre |
| **ITES** | Information Technology Enabled Services |
| **ITO** | Information Technology Outsourcing |
| **KPO** | Knowledge Process Outsourcing |
| **MEs** | Micro Enterprises |
| **MSD** | Market Systems Development |
| **MM** | Mobile Money |
| **MNC** | Multinational Corporation |
| **MNO** | Mobile Network Operator |
| **MSMEs** | Micro, Small and Medium Enterprises |
| **NBSSI** | National Board for Small Scale Industries |
| **R&D** | Research and Development |
| **SMEs** | Small and Medium Enterprises |
| **SSA** | Sub-Sahara Africa |
| **UNCTAD** | United Nations Conference on Trade and Development |

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