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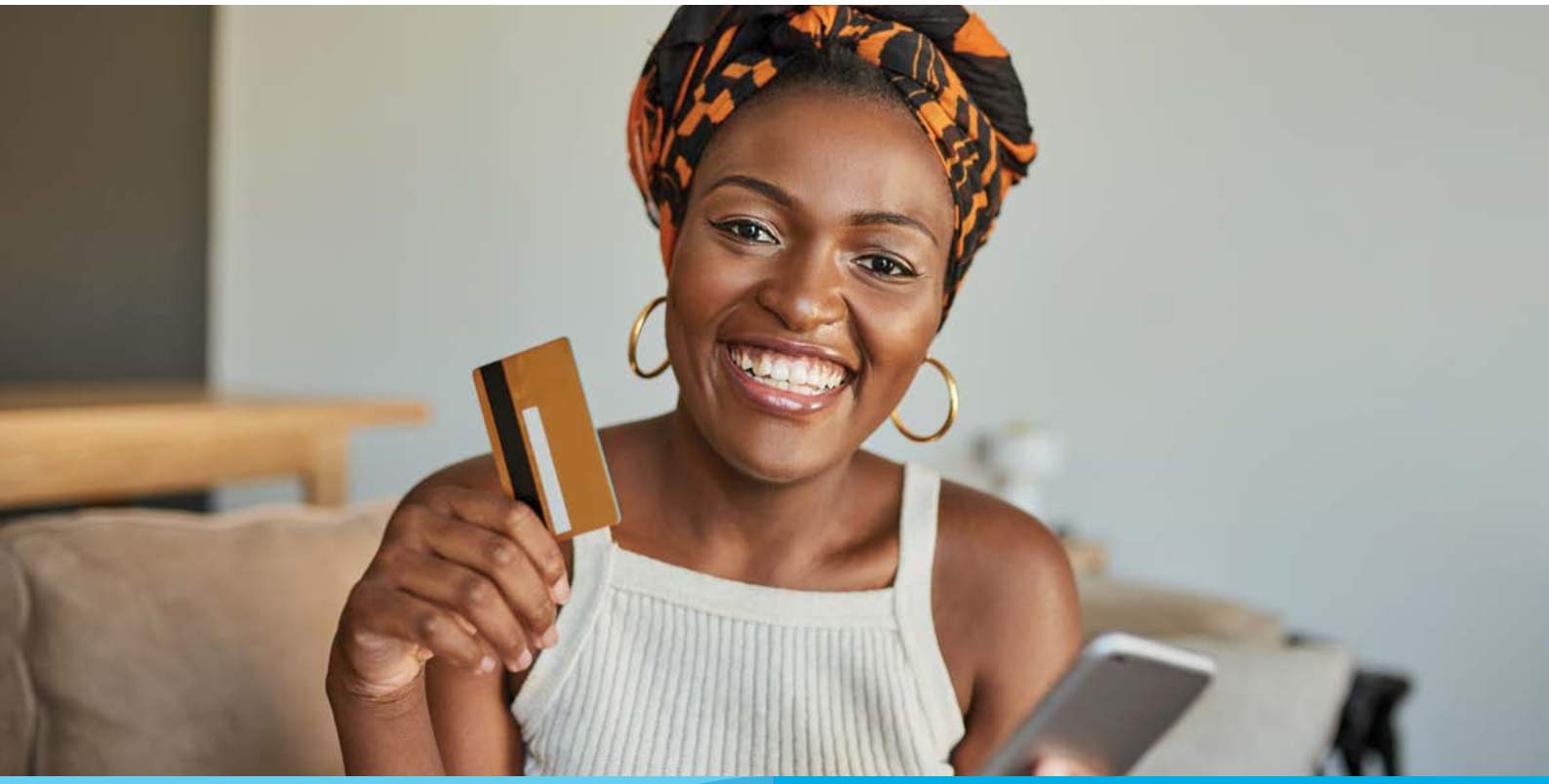
# MSME Banking *in the* Digital Era



**Handbook**

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## About IFC

IFC—a member of the World Bank Group—is the largest global development institution focused on the private sector in emerging markets. We work in more than 100 countries, using our capital, expertise, and influence to create markets and opportunities in developing countries. In fiscal year 2025, IFC committed a record $71 billion to private companies and financial institutions in developing countries, leveraging private sector solutions and mobilizing private capital to create a world free of poverty on a livable planet. For more information, visit www.ifc.org.


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## Foreword

There is $331 billion in unmet demand among MSMEs in Sub-Saharan Africa and $187 billion in North Africa and the Middle East[1]. MSMEs are the backbone of African economies; yet, historically, they have struggled to access the necessary finance to grow and prosper. Providing finance for smaller-scale entrepreneurs is essential to IFC's mission of supporting inclusive economic growth, job creation, and poverty reduction on the continent. Therefore, facilitating access to finance for micro, small, and medium enterprises (MSMEs) represents the majority of IFC's Financial Institutions Group's work in Africa.

While this is a critical development challenge, it is also a huge market opportunity for those financial services providers that can deliver sustainable and profitable products to serve MSMEs. For a long time, this market has been limited by the high perceived risk and cost of serving the wide variety of smaller-scale entrepreneurs that are important links in many of Africa's supply chains, such as agriculture, manufacturing, and services. Consequently, improving access to finance for MSMEs can have a catalytic impact on a much broader economic ecosystem, including the banks that serve them.

Recent advances in technology and data analytics are shifting the paradigm, making it increasingly viable to lend to MSMEs based on digital footprints and algorithms powered by artificial intelligence rather than traditional paper documentation and the judgment of relationship officers. For financial services providers that get this right, the rewards are promising. Market leaders generate higher returns on assets, higher returns on equity, and higher profits than banks in general. This is also why innovative strategies for SME lending have become a priority among African banks and other financial services providers.

This handbook provides a starting point for those who seek to develop advanced MSME lending strategies in today's evolving digital MSME ecosystem. It does not prescribe a single route forward; but gives an overview of what may be possible and what is required to get there. It is our hope that it will inspire banks, microfinance institutions, mobile money operators, fintechs, and other actors across the continent to explore MSME finance from a digital perspective. This is a way forward that could substantially benefit financial institutions, MSMEs, and African economies alike.

**Ethiopis Tafara**
*Vice President for Africa, IFC*

[1] SME Finance Forum, January 20, 2022, Small and Medium Enterprises (SMEs) Finance: https://www.worldbank.org/en/topic/smefinance

[2] IFC, 2017, Alternative Data Transforming SME Finance: https://documents1.worldbank.org/curated/en/701331497329509915/pdf/116186-WP-AlternativeFinanceReportlowres-PUBLIC.pdf

# Contents

# Abbreviations

| | |
|---|---|
| Agtech | Agricultural Technology |
| AI | Artificial Intelligence |
| AMfB | Accion Microfinance Bank |
| AML | Anti-Money Laundering |
| API | Application Programming Interface |
| ATM | Automated Teller Machine |
| BaaS | Banking-as-a-Service |
| B2B | Business-to-Business |
| B2C | Business-to-Customer |
| BI | Business Intelligence |
| BVN | Bank Verification Number |
| CFT | Combating the Financing of Terrorism |
| CGAP | Consultative Group to Assist the Poor |
| CIB | Commercial International Bank (Egypt) |
| CRM | Customer Relationship Management |
| CVP | Customer Value Proposition |
| DeFi | Decentralized Finance |
| DFA | Digital Field Application |
| DLT | Distributed Ledger Technology |
| EAD | Exposure at Default |
| Edtech | Educational Technology or Educational Technology Provider |
| e-KYC | electronic Know-Your-Customer |
| EL | Expected Loss |
| ERMF | Enterprise Risk Management Framework |
| ESG | Environmental, Social, and Governance |
| FAQ | Frequently Asked Questions |
| FI | Financial Institution |
| Fintech | Financial Technology or Financial Technology Provider |
| FCMB | First City Monument Bank |
| FLOD | First Line Of Defense |
| FMCG | Fast Moving Consumer Goods |
| FPS | Frameworks, Policies, and Standards |
| FSP | Financial Services Provider |
| FTP | Funds Transfer Pricing |
| FX | Foreign Exchange |
| GPS | Global Positioning System |
| GSM | Global System for Mobile Communication |

IFC ..... International Finance Corporation
IFRS ..... International Finance Reporting Standards
IP ..... Internet Protocol
IVR ..... Interactive Voice Response
KCB ..... Kenya Commercial Bank
KES ..... Kenya shilling(s)
KPI ..... Key Performance Indicator
KYB ..... Know-Your-Business
KYC ..... Know-Your-Customer
LGD ..... Loss Given Default
MNO ..... Mobile Network Operator
MSE ..... Micro and Small Enterprise
MSME ..... Micro, Small, and Medium Enterprise
MVP ..... Minimum Viable Product
NBC ..... National Bank of Commerce (Tanzania)
NBFI ..... Nonbanking Financial Institution
NFS ..... Nonfinancial Services
NGN ..... Nigerian naira
NGO ..... Nongovernmental Organization
NIST ..... U.S. National Institute of Standards and Technology
NPL ..... Nonperforming Loan
OBA ..... Orange Bank Africa
OM ..... Orange Money
PAYGO ..... Pay-as-You-Go
PD ..... Probability of Default
POS ..... Point-of-Sale
RAROC ..... Risk-Adjusted Return On Capital
ROA ..... Return on Assets
ROE ..... Return on Equity
ROI ..... Return on Investment
SCF ..... Supply Chain Finance
SLOD ..... Second Line of Defense
SME ..... Small and Medium Enterprise
SMS ..... Short Message Service
SNA ..... Social Network Analysis
TLOD ..... Third Line of Defense
TZS ..... Tanzania shilling(s)
UBA ..... United Bank for Africa
USSD ..... Unstructured Supplementary Service Data
ZAR ..... South African rand

# Introduction: The Business Case *for* MSME Finance *in the* Digital Era

Micro, small, and medium enterprises (MSMEs) are the backbone of African economies, central to employment, innovation, and economic growth. Still, many such businesses struggle to obtain the necessary finance to grow and prosper because financial institutions (FIs) often consider MSMEs too costly and too risky to serve. MSMEs generally lack the financial records, business plans, and assets required for traditional credit assessments. As a result, the MSME funding gap is about $331 billion in Sub-Saharan Africa and $187 billion in North Africa and the Middle East.[3]

While there are significant challenges to expanding financing for MSMEs, especially in the micro segment, there are sizeable opportunities for financial services providers (FSPs) to explore this market. IFC research shows, for example, that there is unmet demand for MSME finance of about $8.8 billion in Uganda, $24.5 billion in Ethiopia, and $32.2 billion in Nigeria.[4]

In recent years, adoption of digital channels, enhanced data analytics, innovative business models, and partnerships with new FSPs have allowed banks, microfinance institutions, and insurance companies to take their MSME banking to the next level. This means they are increasingly able to offer more transparent, faster, easier, and better-tailored banking solutions for MSME clients that will not only help close the protracted financing gap but also improve profitability and sustainability of MSME finance.[5]

Among the leaders in the African financial industry interviewed for this handbook, there was consensus that MSMEs are a strategic priority and that the segment represents a significant market opportunity for FIs. While this is no surprise coming from MSME-focused FIs, the sentiment was echoed by traditional banks and mobile network operators in a dramatic shift from a decade ago.

Highlighting the large number of customers that MSMEs represent in emerging markets, the 2017 IFC report *Alternative Data Transforming SME Finance* points to the income potential for FSPs: "Leading SME banks can generate returns on assets (ROAs) that are three times that of overall bank ROAs (3–6% versus 1–3%); SME banking returns on equity (ROEs) of 25–33%; and SME lending profits that are on average 35% higher than returns on overall bank loan portfolios."[6]

In parallel, the COVID-19 pandemic forced many African MSMEs to rethink operations and adapt to a new reality—a push that has likely been sustained by an increasingly uncertain and volatile economy in the years since. The silver lining is that these measures may build stronger, and more bankable, businesses; IFC research shows that many MSMEs in Africa implemented new risk-mitigation mechanisms and adopted new digital tools and solutions in response to the pandemic.[7]

As COVID-19 caused countries to shut down, businesses needed to find new ways to continue operating, increasingly turning to online mechanisms to market their products, interact with customers, negotiate with suppliers, make payments, and transact remotely. Use of digital solutions is generally higher in East Africa than in West Africa, but even in The Gambia, where digitalization is relatively low, over a third of MSMEs reported using digital solutions during the pandemic.[8]

This marks another radical shift in the SME finance landscape. A study of almost five thousand MSMEs in francophone Africa shows that four-fifths of businesses that use digital technologies experienced decreased costs and increased sales, and those that used advanced digital technologies were twice as likely to increase productivity.[9] Similarly, FIs in emerging markets that integrate digital models into their offerings experience a strong positive impact on their businesses.[10]

The fundamental change that sets apart MSME finance in the digital era from traditional MSME finance models is the significantly enhanced capability to generate and process data, allowing providers to reach this segment with less risk and cost than has been historically possible. The increasing proliferation of data and analytical tools leveraging such input allow FSPs to adopt an MSME business model framework that starts with a deep, data-driven understanding of MSME segments, and efficiently delivers a range of products and services to meet

3 SME Finance Forum, January 20, 2022, Small and Medium Enterprises (SMEs) Finance: https://www.worldbank.org/en/topic/smefinance

4 IFC, 2022, Market Bite Nigeria: https://www.ifc.org/en/insights-reports/2022/market-bite-nigeria-innovation-offers-key-to-the-broader-msme-finance-market;
IFC, 2021, Market Bite Uganda: https://www.ifc.org/en/insights-reports/2021/ifc-market-bite-uganda-challenges-and-opportunities-for-msme-finance-in-the-time-of-covid-19; IFC Market Bite Ethiopia – unpublished, IFC internal source.

5 IFC, 2017, Alternative Data Transforming SME Finance: https://documents1.worldbank.org/curated/en/701331497329509915/pdf/116186-WP-AlternativeFinanceReportlowres-PUBLIC.pdf

6 Ibid.

7 Market Bite COVID-19 - Impact on MSMEs in six African countries, IFC, February 2022: https://documents1.worldbank.org/curated/en/099631006242236373/pdf/IDU0893d85690d61e040f20b2220cbe93ba5efbb.pdf

8 Ibid.

9 International Trade Center, 2022, SME Competitiveness in Francophone Africa: https://intracen.org/file/cpccaf2022layoutenv43pdf

10 Accion, 2022, The Impact of Digital Transformation on Underserved Microbusinesses: https://www.accion.org/the-impact-of-digital-transformation-on-underserved-microbusinesses-findings-from-accions-partnership-with-mastercard

the needs of MSME clients. This goes beyond credit, and often includes a range of nonlending and nonfinancial services to grow sustainable MSME bank clients that will deliver income now and into the future.

Increasingly, FSPs are prioritizing investment in financial technology (fintech) and digital innovation to remain competitive and relevant to MSME customers.[11] They are looking to:

- Digitalize products and services to improve customer experience and offer tailored products to suit MSME-specific needs.
- Automate processes and implement digital channels to make lending more efficient for both banks and MSMEs.
- Leverage data analytics and external databases to inform decisions in loan origination and assessment processes to expand MSME credit.
- Explore opportunities to leverage artificial intelligence (AI) and other evolving technologies to grow market share, enhance process efficiency, and manage risk.

This is no easy task. To bring about significant positive impact and value across a wide spectrum of MSME banking services requires business transformation, i.e., a fundamental change in the way the FSP operates. Many of the senior leaders interviewed for this handbook acknowledge that digital transformation is an enabler for innovation and competitive advantage, but also point out that there are significant challenges, such as difficulties in cultural resistance to technology adoption and in digitalization of bank processes, limited internal capacity to execute digital processes and channels, and scarcity of skills and capital to fund the transformation. A critical challenge, often overlooked, is that digital transformation requires a cultural change across the organization to drive transformation at the individual level. Staff across the organization need to actively adopt digital tools and apply them to their daily activities, replacing manual operations.

The *MSME Banking in the Digital Era Handbook* is a practical guide for financial industry practitioners in emerging markets on how to build their MSME banking business by engaging the significant opportunities in this underserved market. This handbook explores the most promising ways in which FSPs can leverage the latest approaches to MSME banking to better serve the needs of their MSME customers, improve operational efficiency, and manage risk.

Each chapter presents some of the most viable innovations applicable to the different stages of the customer journey, offers practical guidance on how to approach and adopt such innovations, and shares the experience of innovative FIs through illustrative case studies. As it lays out a new approach to MSME banking, it is important to remember that there is no one solution that fits all FIs. What works will be different for each type of organization and the context of the market in which it operates. This handbook is a starting point, to inspire and guide a way forward that will be unique to each institution.

**Chapter 1: A Business Model for MSME Banking in the Digital Era** looks at the current MSME ecosystem and presents a business model framework for FSPs seeking to capitalize on the opportunities offered by innovative technology and new approaches to MSME banking.

**Chapter 2: Data – the Foundation of MSME Finance in the Digital Era** places data and data analytics at the center of MSME banking and demonstrates how FIs can go about building a data-driven organization to deliver customer-centric MSME banking services. This chapter also covers external partnerships, with a focus on data sharing for targeting and acquiring MSME clients.

**Chapter 3: Understanding the new MSME Market** highlights the importance of customer segmentation and offers guidance on how to leverage digital data and data analytics to better understand, reach, and serve MSMEs.

**Chapter 4: Meeting the Banking Needs of MSMEs** presents an agile approach to product development for MSMEs and highlights innovative product strategies, focusing on a full range of banking needs such as digital payments and account services, digital lending and embedded finance, and capacity building through nonfinancial services, all of which have become increasingly viable in the digital era.

**Chapter 5: Managing the MSME Customer** maps the customer journey in the digital era and presents strategies to leverage digitalization for enhancing customer acquisition and credit risk

[11] IFC, 2019, Banking on SMEs: Trends and Challenges. Perspectives from SME Banking Leaders: https://www.smefinanceforum.org/post/banking-on-smes-trends-and-challenges-perspectives-from-sme-banking-leaders?

assessment, customer onboarding, activation and retention, and collections optimization.

**Chapter 6: Credit Risk Management for MSMEs in the Digital Era** illustrates how digitalization can be leveraged for improved efficiency and better quality of risk decisions, shorter turnaround times on loan applications, better risk-adjusted pricing, improved portfolio monitoring capabilities, and stronger regulatory compliance.

**Chapter 7: Looking into the Future.** The rapid advancement in technology is continuously presenting new opportunities and tools for the financial industry to evolve. Much of what is presented in this handbook may soon be replaced by new innovations, some of which are presented in this last chapter.

While this handbook offers some guidance on data regulation, it does not examine overall regulation related to MSME banking in Africa. Regulators in many markets have already introduced, or are in the process of introducing, regulations to support more inclusive, collaborative, and digitalized models of MSME finance. Several African governments have introduced national financial inclusion strategies in the past decade to close the deep divide in financial access. These strategies allow for the participation of new, nonbank actors such as fintechs and mobile money operators; the use of agents as distribution channels; tiered know-your-customer (KYC) requirements and electronic KYC (e-KYC) options; and consumer protection regulation regarding transparency and fair disclosure rules and service delivery standards.[12] Regulatory sandboxes and collaborative 'test and learn' models have helped drive some trends in expanding financial services to reach MSMEs. Regulation will offer both opportunities and constraints for FSPs as well as MSMEs and will differ for each market.

The concepts and topics discussed in this handbook are informed by interviews with over 40 financial service providers and industry stakeholders in Africa and other emerging markets, including banks, microfinance institutions, fintechs, and mobile network operators (MNOs). The content also draws extensively on the research, experience, and expertise of IFC and partners in supporting the financial industry in Africa to serve MSMEs.

[12] CGAP, 2018, Basic Regulatory Enablers for Digital Financial Services: https://www.cgap.org/sites/default/files/researches/documents/Focus-Note-Basic-Regulatory-Enablers-for-DFS-May-2018.pdf

# 1

# A Business Model *for* MSME Banking *in the* Digital Era


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*The increasing digitalization of MSMEs has created novel ways and means for FSPs to reimagine how they serve the MSME market. This chapter looks at how the MSME banking context in Africa has changed, and the implications this has for critical functions of MSME finance. It presents a new MSME banking business model framework for the digital era that is applied throughout the handbook and that is applicable in Africa and similar emerging markets.*

## The MSME Ecosystem in the Digital Era

The MSME landscape has evolved significantly over the last 15 years, not only with the inclusion of new actors, but also driving change in how MSMEs, financial service providers and other key players operate. Some of these key changes in the ecosystem are:

**MSMEs as clients:** Across Africa and the world, MSMEs as clients of FSPs have transformed over the past decades, becoming more informed about options and gaining better access to knowledge. While their needs remain unmet in most instances, they have become more complex in structure and diversity. The historical 'one-size-fits-all' approach has become irrelevant as they exploit options and become increasingly aware of their own contribution and value potential. With the proliferation of online learning, MSME clients better understand pricing and how it impacts their business. And they have become more sophisticated—adopting digital capabilities to drive business growth across the value chains they operate in. Despite this, there remain huge disparities in how various MSME sub-segments have adapted to these changes and trends, especially among women-owned MSMEs and those in rural and farming communities.

**Regulation:** Regulators are prioritizing the development of secure and accessible digital payment solutions that connect various markets. This includes legal frameworks for interoperability, and regulatory sandboxes to test new financial technologies. The laws on interoperability, infrastructure sharing, standardized pricing, and mandatory requirements for settling services digitally (to improve revenue collection and curb leakages) have pushed digital innovation—and its uptake and use—to higher levels. Many countries have introduced data protection laws to protect users' personal information, essential for trust in digital transactions. However, in some cases this has created unintended consequences such as slowing down momentum, as is the case, for example, with the data localization laws in Tanzania, Zambia, and Rwanda. Rapid growth in digital credit providers (DCPs), offering high-cost credit and at times adopting unethical debt collection practices has also led to regulations for oversight and supervision of digital lenders. For example, regulations have been introduced in Kenya for licensing, governance, and lending practices including consumer protection, credit information sharing and anti-money laundering and combating the financing of terrorism (AML/CFT).[13]

**Mobile phone penetration:** Mobile phones are critical to accessing financial services for the African continent's largely informal MSMEs. Today, 80% of people in Sub-Saharan Africa own a mobile money account and, of these, 83% use it for business needs.[14] With the rapid increase in internet use, supported by lower costs of smart phones and internet data, mobile phones have catalyzed innovations in financial services and unlocked new service models. These, in turn, have accelerated the financial inclusion of MSMEs and their access to services ranging from mobile payments to digital microcredit, as well as pay-as-you-go (PAYGO) off-grid solar power and mobile-enabled social payments. The mobile phone number has become a key proxy in identification and model development.

**Agent banking services:** By deploying expansive networks of agents and leveraging existing authorized retail networks, FSPs are increasingly able to offer basic financial services to a wider range of clients, including MSMEs, particularly in rural and remote areas where traditional branch networks are limited. Agent banking networks in Africa have grown significantly. For example, in West Africa, the number of agents more than doubled in just over a year to about 6.5 million, in 2022.[15] Use of agent banking services has also grown significantly in Kenya, where agent banking transactions increased from around 30 million in 2012 to 158 million in 2022.[16]

**Technology advances and digital infrastructure:** Decreasing technology costs and advancements in machine learning, data analytics, process optimization, and digital finance have created opportunities for FSPs to facilitate customer engagement and automate critical back-office processes. FIs can now apply data-driven techniques to customer segmentation, acquisition,

[13] 2119450187_Press Release - Publication of Regulations for Digital Credit Providers and Commencement of their Supervision.pdf

[14] GSMA, 2019, Sub-Saharan Africa: The enduring epicenter for Mobile Money: https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/region/africa/sub-saharan-africa-the-enduring-epicentre-of-mobile-money-part-2/

[15] Business Day (Bunmi Bailey, author), June 7, 2023, West Africa's banking agents more than double in one year.

[16] https://www.statista.com/statistics/1232325/number-of-commercial-bank-agents-in-kenya/

and underwriting. Back-end automation and low-cost cloud computing services have enabled economies of scale and reduced transaction costs.

**Cross-border payments:** International remittances are increasingly becoming easier and more convenient, with fund transfers through mobile money remittance services or intermediary organizations. With the gradual implementation of the African Continental Free Trade Agreement and the creation of the Pan-African Payment and Settlement System, together with banks launching regional operations, cross-border trade between MSMEs is likely to increase. This offers opportunities for FIs to partner across borders to access new segments and offer financial services. By harmonizing standards and regulations, African countries are working to reduce trade barriers, making it easier for digital businesses to expand regionally and contribute to intra-African trade.

**Adoption of e-commerce:** Many MSMEs are adopting digital channels to expand their market reach. Banks can partner with e-commerce platforms to provide financing solutions like working capital loans, payment gateways, and business insights. There has been a conscious drive by governments to migrate duties, taxes, rates, and licenses to e-commerce platforms, which has accelerated the adoption of the same platforms by MSMEs in their own businesses. E-commerce is now used by both MSMEs and FSPs for the purposes of marketing, receipting, and collections.

**Mobile wallets** and MSME digitalization are two of the driving forces behind the transformation of how MSMEs operate, particularly in how they manage payments, interact with customers, and access financial services. Mobile wallets are digital tools that enable businesses to accept payments, manage cash flow, and expand reach, while digitalization broadly encompasses the adoption of digital tools and platforms to streamline MSME operations, enhance efficiency, and open up new market opportunities.

**New actors:** The range of actors that provide a variety of financial and value-added services to MSMEs is growing, opening new opportunities for collaboration and partnerships. Emerging innovative service models include:

*Fintech and digital lenders.* Fintech firms and digital lenders, with their rapid credit approvals and flexible loan products, are capturing market share by offering faster and more convenient services. They often employ data-driven lending models, allowing them to serve MSMEs with limited or no credit history.

*Neobanks.* Digital-only banks provide low-cost, flexible banking services designed specifically for MSMEs, creating competition for traditional banks. Their streamlined operations and simplified services can be attractive for MSMEs seeking efficient, no-frills solutions.

*Super platforms.* Global giants, such as Google and Facebook, as well as local actors like M-Pesa,[17] JumiaPay,[18] and Squad,[19] are offering a broad range of services either independently or as intermediaries between MSMEs and FSPs. Technology giants are increasingly moving into financial services, offering payment solutions, lending, and digital wallets. Their significant customer reach, data access, and technical resources allow them to offer financial products more competitively.

MNO-led FSPs have the potential to provide a range of financial services for MSMEs building on existing mobile networks and services. The new actors, especially MNOs and e-commerce platforms with their extensive subscriber bases and a strong understanding of their ecosystems, have a distinct advantage over traditional FSPs. This is prompting FSPs to be more innovative and agile in their approach, and to be prepared to form partnerships for expanding their outreach to MSME segments.

Table 1.1 on page 20 illustrates how banking infrastructure, policies, pricing, products, processes, and regulatory frameworks have evolved significantly to better serve MSMEs, supporting greater financial inclusion, flexibility, and resilience in the sector.

Over the years, these changes have given rise to common opportunities, as well as challenges, for FSPs that serve MSMEs or those that aspire to do so. Interviews conducted with senior leaders from the financial industry in Africa for this handbook highlight some of these:

**1. Digitalization is critical to innovative MSME banking.** Although approaches differ among providers, digital-led initiatives covering back-end operations, financial and nonfinancial offerings, improved underwriting models, shorter turnaround times for banking services, and enhanced customer experience through multi-channel delivery are common among providers.

[17] Launched in Kenya in 2007 by Vodaphone and Safaricom; now expanded to other African countries and further afield.

[18] Africa-wide product founded in 2012 in Nigeria.

[19] Africa-wide product of HabariPay Limited, a subsidiary of Guaranty Trust Holding Company (GTCO).

**2. Data is a competitive asset.** Increasingly, service providers are leveraging data from physical and digital customer interactions to refine strategies for customer profiling, prospecting, marketing, and underwriting. Service providers are investing in sophisticated data analytics tools, people, and infrastructure to deepen data capabilities.

**3. Partnerships drive innovation.** Collaboration with other service providers is seen as key for MSME customer acquisition, obtaining data for underwriting and profiling, customer support, and new products and services. Banks and other traditional actors are partnering with fintechs, digital platforms, credit bureaus, and MNOs to innovate around data-led segmentation, credit scoring, delinquency management, and e-KYC support. Fintechs and platforms are turning to traditional lenders for funds to increase MSME lending, expand outreach, and to deliver integrated services.

**4. Digital channels are the new norm.** While omnichannel delivery is the aspiration of most service providers, implementation varies widely. Most institutions have at least one digital channel in addition to branches and agents. Banks, in particular, plan to transition MSME customers to digital, self-service channels, incentivizing both staff and customers to accelerate the processes.

The MSME ecosystem comprises a diverse set of players that provide the support, resources, and infrastructure needed for MSMEs to grow and operate effectively. Each player in this ecosystem serves a unique role, from offering financial products to providing technology, advisory, and policy support. Developments in technology and data availability, together with new players in financial services, have significantly enhanced the MSME ecosystem for access to financial services. Key MSME ecosystem players are illustrated in Figure 1.1. on page 21.

At the core of the digital MSME ecosystem are the customer needs. While many organizations and reviewers have sought to broaden these needs, they can be summarized into the five core needs listed below. Thus, the challenge becomes understanding and solving for what is the need, where is it required, how should it be delivered, and when is it required. It is the various attempts to solve these questions that result in a variety of leading innovations and solutions for satisfying the needs of the MSME. The five core MSME customer needs are:

**Transact.** The greatest value of the MSME to the FSP has tended to be provision of cheap, sticky deposits and high transaction volumes which attract good, non-funded income. For the busy MSME owner who prefers to spend most of their time on the 'shop floor,' transaction convenience 'on-the-go' becomes a key priority. Based on this need, banks will decide which products to offer, how they will be distributed, who will distribute them, and when the distribution will occur—ranging from account types to cards and digital wallets.

**Borrow.** MSME clients have continuous demands for financial support throughout the growth cycle of their businesses. During the different growth stages, MSMEs at any given time have diverse borrowing needs, including working capital, trade finance, term loans for core working capital, and equipment financing, among others. The tenure, pricing, collateral type, and covenants will vary, as will the conditions for access, but the core need remains borrowing. In the digital era, this provides an opportunity to explore the various levers articulated in this handbook to meet the customer borrowing requirements.

**Protect.** By their nature and history of formation, MSMEs lack protective measures against macroeconomic headwinds or competitive strategies, often resulting in premature closure, stagnation, and/or takeovers. As such, they seek solutions from financial players to protect themselves, including insurance, hedging products, cross-border trade mitigation, and more.

**Grow.** As markets evolve with the emergence of new players and regulatory changes, MSMEs are constantly seeking ways to grow through capacity building, training, and exposure to new markets. FSPs can cater to this need through the provision of nonfinancial services or products, which are now increasingly easy and cost effective to deliver.

**Save.** Sometimes referred to as 'Invest,' this need emanates from the desire to build cross generational wealth/entities, generate organic resources to fund business expansion, mitigate sovereign risk, and prepare for future regulatory obligations. MSME needs can range from short to long term, thereby presenting FIs an opportunity to provide a variety of instruments ranging from bank savings products to treasury bills and offshore investments, depending on a client's risk appetite and reason for the investment.

| | Pre-2010 | 2010–2015 | 2015–2019 | 2019–2021 | 2021–present |
|---|---|---|---|---|---|
| **Policies** | Focus on enhancing rural financial inclusion without a specific MSME focus | Introduction of tax incentives, promoting rural expansion, and MSME-focused banks | Policy adjustments to facilitate more collateral-free loans, promoting digital infrastructure & cashless transactions | Emergency relief funds and government-backed credit programs | Digital-first policies, e-commerce & fintech partnerships. Promotion of sustainability with incentives for adopting AI and other digital tools |
| **Pricing** | High-interest rates for MSMEs due to perceived credit risk & standard collateral requirements, creating access barriers | Government subsidized loans, concessional interest rates, and reduced fees, incentivizing banks to lower lending costs and include MSMEs | Digital inclusion via reduction of fees for adopting digital transactions, hyper-personalized[20] risk-based & flexible pricing & repayments | Increased concessions and subsidized loans and loan moratoriums | Low-interest rates on digital credit products with reduced fees for AI-enabled services. Dynamic pricing for loans based on real-time financial data |
| **Products** | A limited variety of products, i.e., term loans & working capital | Specialized products for MSMEs, e.g., micro-loans, trade finance, working capital management, and term loans, with cooperatives | Mobile-based payment solutions, microloans, flexible & sector-focused customized loans | Digital payment products, e.g., QR codes, e-commerce integration, point-of-sale (POS) interoperable payment acceptance & emergency credit lines + moratoriums | Embedded financial services for seamless integration, offering AI-powered financial products and predictive cash flow solutions |
| **Process** | Lengthy, paper-based loan application processes | Digitalization efforts in loan processing, e.g., pilot digital applications to improve loan turnaround time | Digital onboarding, digital lending and KYC processes enhancement | Digital KYC and e-signatures for onboarding, fast-tracked digital loan applications | Enhanced digital tools for cash flow management and credit monitoring through automation, with AI-driven insights facilitating improved decision-making |
| **Regulation** | Focus on financial inclusion without targeted policies, specifically for MSME support | Introduction of lending targets, collateral-free loans, and enactment of policies that enhance credit access | Adjusted regulatory frameworks support digital payments, guidelines for credit risk assessment & stricter lending targets to MSMEs | Regulatory incentives encourage MSME lending targets & new regulations facilitate rapid disbursement of MSME relief funds | Relaxation of digital banking regulations allow for online credit solutions and support digital and AI-based financial innovations for MSMEs |
| **Point of Presence (Distribution)** | Expansion of physical branches | Adoption of kiosks, mini-branches, and internet and mobile banking services to improve accessibility | Specialized MSME branches, neobanks and digital-only financial services, expansion of Automated Teller Machines (ATMs), kiosk, and agency banking networks | Advancement of mobile and internet banking allows branchless services access | AI-based digital banking services, including virtual assistants and chatbots, offer 24/7 support, while embedded finance integrates banking services digital tools |

*Table 1.1. Evolution of MSME Lending in the Past Decade*

[20] Hyper-personalization segments customers into highly specific and granular segments based on their preferences, behaviors, demographics, purchase history and real-time data.

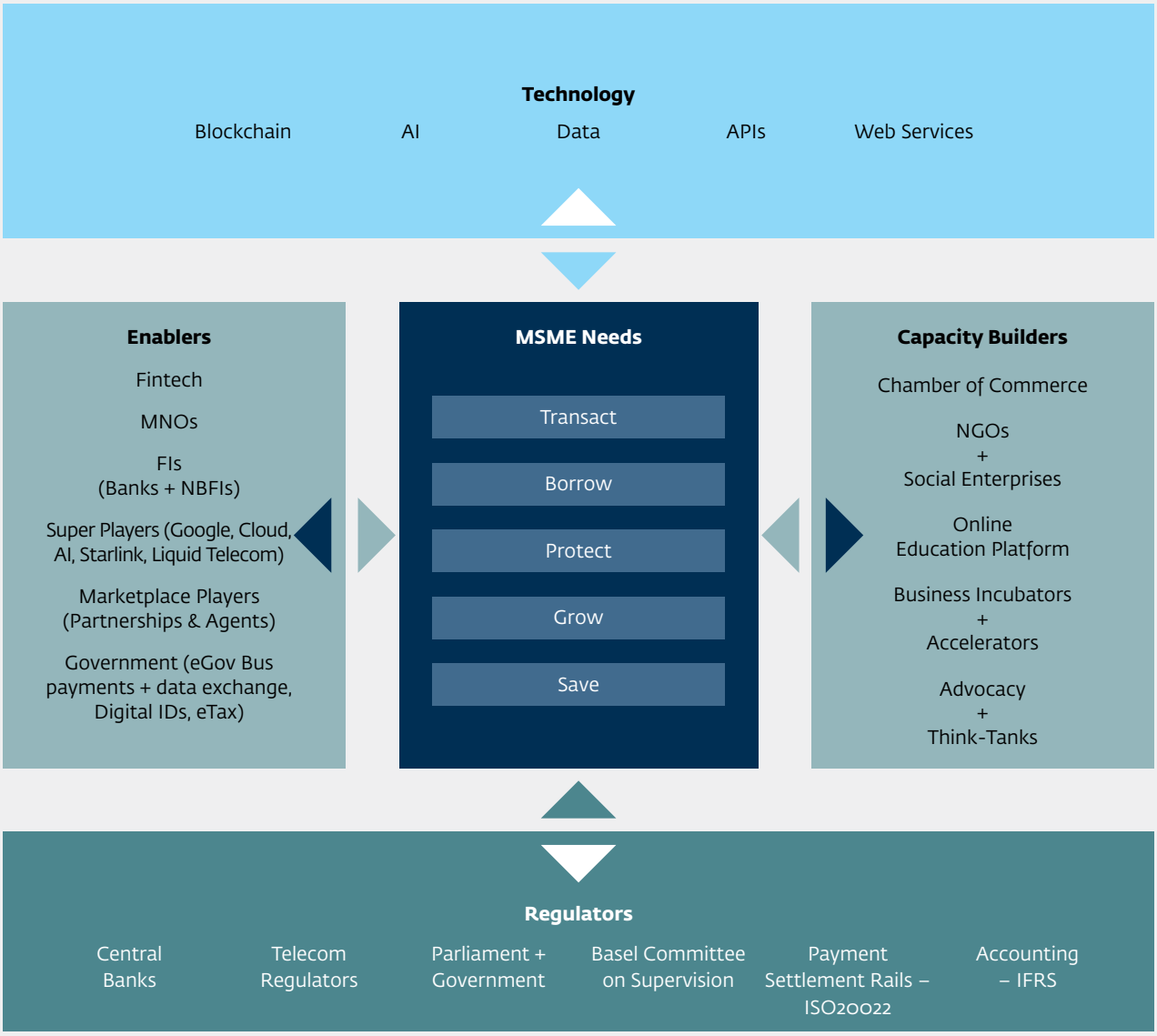


*Figure 1.1. An Overview of the Key MSME Ecosystem Players*

As the financial players seek to meet the five core needs, they must decide on the technology options available. The advent of blockchain capabilities, Application Programming Interfaces (APIs),[21] mobile phones, and web-services—along with other available technologies—has enabled a creative and transformative response to client needs. There are many considerations to make when selecting which option to adopt; key among these is identifying the particular customer requirement to be resolved, and the guaranteed return on investment (ROI) for this choice. The various options available in the digital era together with their applicability are discussed later in the handbook (see Chapters 2,3, and 4).

The technology choices and client needs must be explored within the regulatory framework. In the recent past, there has been increasing regulatory involvement from central banks, telecom regulators, parliaments, the Basel Committee on Supervision, and various international settlement bodies as they have sought to ensure transparency, fair treatment of clients, and resilience of country and global economies. Examples of landscape-changing regulations are:

› The mandatory sharing of network infrastructure such as mobile towers, ATMs, and agency networks, which has delivered key milestones for connectivity in formerly underserved locations and/or commercially unviable locations, while reducing investment waste from infrastructure replication.

› The launch and mandatory use of a local country switch for local card, bank-to-wallet, wallet-to-bank, ATM, and inter-bank transactions. The impact of this has been the shortening of the cash cycle for MSMEs, the emergence of innovative digital solutions for MSMEs, and real-time payment settlements.

While new regulations have accelerated the adoption and implementation of digital solutions to meet MSME needs, they have brought complexities and raised the compliance standards. In this regard, all digital solutions should be benchmarked against the plethora of regulatory requirements at local, regional, and global levels. Such benchmarking will enable players to position their solutions on a global stage, as noted below with reference to the presence of super players in the marketplace.

Once the regulatory requirements have been met (and, sometimes, in order to meet such requirements), FSPs should consider which enablers can be used to help deliver the customer's need. Enablers include fintech, government (through initiatives such as digital IDs, eGov bus payments, and other incentives), the super players (through access to cloud services, marketplace, and technology), and other marketplace players (through partnerships, agents, and collaboration). When selected carefully, enablers have the capability to drive exponential growth in the MSME segment, especially as some of them are exempt from the more rigorous regulatory and prudential requirements that banks must achieve.

The final pillar in the MSME ecosystem are the capacity builders, who play a critical role in influencing policy formulation, digital adoption, and digital maturity, and in funding the groundbreaking innovations in the market. The key players of note in Africa are the chambers of commerce, nongovernmental organizations (NGOs), business incubators and accelerators, and advocacy think tanks. These entities and players have been central in the shaping of the MSME digital ecosystem, driving financial inclusion, rural financing, financing for women, start-up financing, and driving the Environmental and Social Governance (ESG) agenda.

A good example of capacity building across Africa is seen in the way MFIs, supported by NGOs, have been a leading force in digital financial literacy, introducing women-led programs for financial inclusion through models such as village banking. At the same time, FSPs have partnered with MNOs to set up mobile wallets, provide low-cost smart phones, and conduct workshops on use of mobile wallets and banking services. The outcome of such programs is a rapid improvement in community digital maturity, which creates a platform for FSPs to build products and solutions that cover MSME entities. There has also been a reduction in mobile data costs and charges for digital products from both FSPs and MNOs.

Innovation hubs, business incubators, and accelerators are worth noting as core capacity builders; these generate fintech entities which, in turn, have provided customized digital solutions for MSMEs, thereby enabling FSPs to access data, new client bases, and underserved communities at a commercially viable scale. This type of capacity builder has also been instrumental in providing funding for start-ups (a segment usually neglected by FSPs), which accelerates their growth to viable levels for FSPs to explore relationships. Although these capacity builders are not within the scope of this handbook, it is impossible to fully appreciate the ecosystem without considering their role; while this model separates them for clarity, it should be noted that, in practice, they have mutual dependencies that contribute to the growth and survival of the MSME digital ecosystem.

[21] An API is a software intermediary hosted by a third party that allows two applications to talk to each other.

With a growing digital MSME ecosystem and expanded availability of more affordable digital solutions, the pace of adoption and use of digital technologies by MSMEs is increasing. The following section highlights how this is impacting their access to a whole range of financial services.

## *Digital Adoption by MSMEs*

MSMEs operate as part of an interconnected ecosystem of actors. Figure 1.2 outlines the digital services and opportunities now available to MSMEs—although adoption varies across Africa and within markets. IFC research, based on nationally representative data from Burkina Faso, Ethiopia, Ghana, Kenya, Malawi, and Senegal, shows that 86 percent of firms with five or more workers have access to one or more digital enablers (mobile phone, computers, or internet). In a group of middle-income countries (Ghana, Kenya, and Senegal), 57 percent of firms (on average) with five or more workers adopt computers and internet, versus 44 percent in low-income countries (Burkina Faso, Ethiopia, and Malawi). Medium and large enterprises tend to make fuller use of digitalization, while less than 20 percent of microenterprises report having a working internet connection through enabling devices such as phone or computer.[22]

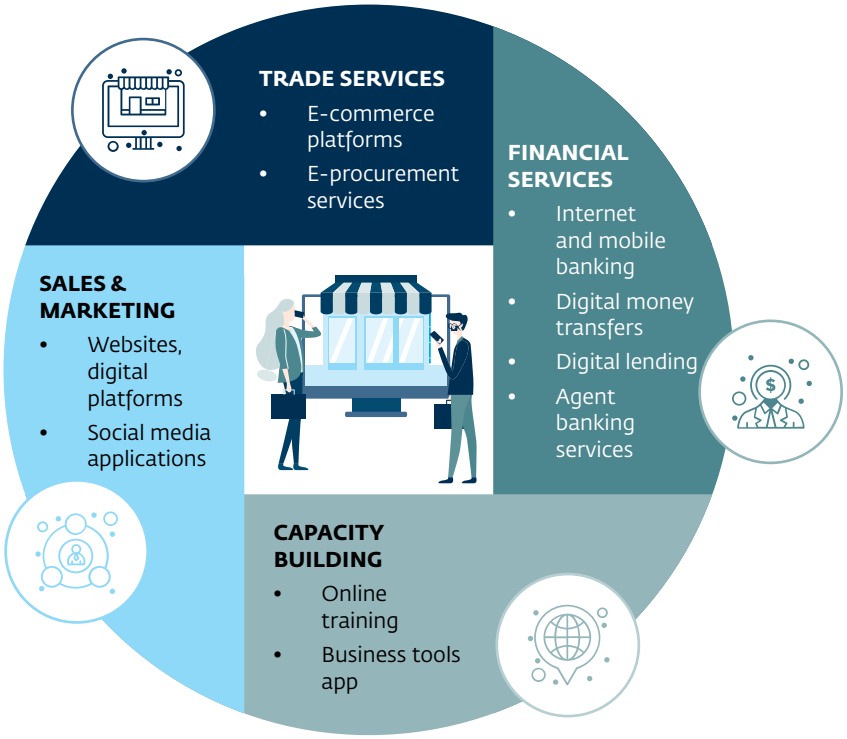


*Figure 1.2. The Digital Services MSME Ecosystem*

**Financial services:** The most common financial transactions by MSMEs are making payments to suppliers and receiving payments from customers. The ability to make and receive payments through an efficient and cost-effective mechanism is one of the core financial needs of any MSME. The payments ecosystem, while growing, is still evolving; cash remains the most popular mode of transaction due to its convenience and lack of associated transaction costs, making it the most economical option. An IFC survey in Nigeria revealed that 84 percent of transactions are still conducted in cash, with 55 percent of MSMEs surveyed saying they also use digital bank transfers.[23] Of the sample respondents, 44 percent used mobile banking applications and 16 percent used internet banking. While there is growing acceptance of digital services, especially payments, most respondents expressed concerns with the services offered, with only 5 percent saying this is the most convenient method for payments. The high cost of transactions and the slow transaction confirmation process were cited as the primary reasons for low preference. By providing convenient and low-cost digital payment solutions, FIs can attract MSMEs, build their capabilities through nonfinancial services, and cross-sell higher revenue-generating products such as credit and trade services.

**Trade services:** Electronic commerce is considered one of the key drivers of the digital economy. E-commerce platforms provide MSMEs the opportunity to sell their goods and services to a potentially bigger market, and the opportunity to procure from a much wider range of suppliers. In the 2023 GeoPoll

[22] Digital Opportunities in African Businesses, IFC, 2024, https://openknowledge.worldbank.org/server/api/core/bitstreams/e6f2cc1b-ad12-460f-9f17-ff95b69cb378/content

[23] IFC, 2022, Market Bite Nigeria: https://www.ifc.org/en/insights-reports/2022/market-bite-nigeria-innovation-offers-key-to-the-broader-msme-finance-market

survey of four African countries, 26 percent of MSMEs said they planned to invest in e-commerce in the next few months.[24] Growth in e-commerce use also has a multiplier effect on other financial services; it offers opportunities by creating institutional partnerships and generating business performance data (digital payments, supply chain finance, embedded finance) on MSMEs that use the platforms. In Africa, e-commerce adoption is growing, with market forecasts suggesting that there will be almost 600 million online shoppers by 2027.[25]

**Sales and marketing:** A 2023 survey of MSMEs in Africa reported that 75 percent of MSMEs in Kenya, Nigeria, and South Africa (62%, including Ethiopia) said their reliance on technology and online tools had increased one year into the COVID-19 pandemic. Forty-five percent said they sold products and services online, 67 percent used social media to promote their business, and nearly half used mobile apps for at least some business functions.[26] Of the MSMEs surveyed, 64 percent of respondents in Kenya, 37 percent in South Africa, and 35 percent in Ethiopia said they use mobile applications for marketing, and e-commerce platforms for conducting business transactions. With increasing presence and use of social media applications by MSMEs, FSPs can use such applications to reach MSMEs with information and product marketing campaigns. The most commonly used digital media for sales and marketing products and services by MSMEs is WhatsApp; 46 percent of respondents stated they used the application for marketing. [27]

**Capacity building:** As the use of technology and digital tools increase among MSMEs in Africa, so do the supply of virtual business training and technology-based business tools that can be accessed through online learning platforms and mobile apps. The Kenya-based African Management Institute, for example, offers over 80 online courses, including 7,000 hours of video content and 3,000 downloadable tools, in five languages for small-scale entrepreneurs across Africa.[28] IFC estimates that among 240 million informal micro firms and owner-operator businesses in Africa, up to 40 million could start using some form of digital technology for functions such as accounting, planning, sales, marketing, supply management, or payments.[29]

## *A New Business Model Framework for MSME Banking in the Digital Era*

In order to effectively serve MSMEs in the digital era, banks need to adopt a modern, holistic framework that incorporates digital capabilities, customer-centric design, and efficient service delivery. A proposed Business Model Framework for MSME Banking in the Digital Era is illustrated in Figure 1.3, page 25. The new model focuses on accessibility, affordability, adaptability, and agility, and incorporates five core pillars: client needs, channel optimization, streamlined and automated processes, technological agility, and a re-enforced risk management model.

The business model framework has three distinct elements: Input, Factory, and Output.

**Input**

The Input element is client needs, which provide the market players with the baseline and/or motivation for creating digital solutions attractive to the MSME. It is imperative that there is a constant iteration throughout the process to verify that the choices being made are firmly based on the needs of the client.

*Client Needs.* Building on the five key client needs (Figure 1.3), there is a requirement to develop customized, needs-based products that address the specific challenges and opportunities faced by MSMEs: (i) flexible credit products, through the creation of a suite of lending options, such as revenue-based loans, microloans, and credit lines that match seasonal cash flows; (ii) pay-as-you-grow loan structures for start-ups and fast-growing MSMEs; (iii) digital payment solutions that provide easy-to-integrate payment gateways; (iv) QR codes and POS systems to facilitate digital payments and help MSMEs transition from cash-based transactions; (v) working capital management tools that offer digital solutions for automating expense tracking, invoicing, and cash flow analysis, integrated directly into the banking platform; (vi) insurance and risk management that introduce affordable insurance products and risk management tools to help MSMEs protect their businesses and comply with regulatory requirements.

[24] GeoPoll, 2023, Africa 118 and African Talent Company, 2023, The Africa MSME Pulse Survey: https://www.geopoll.com/blog/africa-msme-pulse-2023

[25] GSMA, October 2023, E-commerce in Africa: Unleashing the opportunity for MSMEs; https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/gsma_resources/e-commerce-in-africa-unleashing-the-opportunity-for-msmes/

[26] GeoPoll, Africa 118 & African Talent Company, 2023, The Africa MSME Pulse Survey Report 2023: https://www.geopoll.com/blog/africa-msme-pulse-2023

[27] Ibid.

[28] African Management Institute website, 2024: https://www.africanmanagers.org/

[29] Digital Opportunities in African Businesses, IFC, 2024, https://openknowledge.worldbank.org/server/api/core/bitstreams/e6f2cc1b-ad12-460f-9f17-ff95b69cb378/content

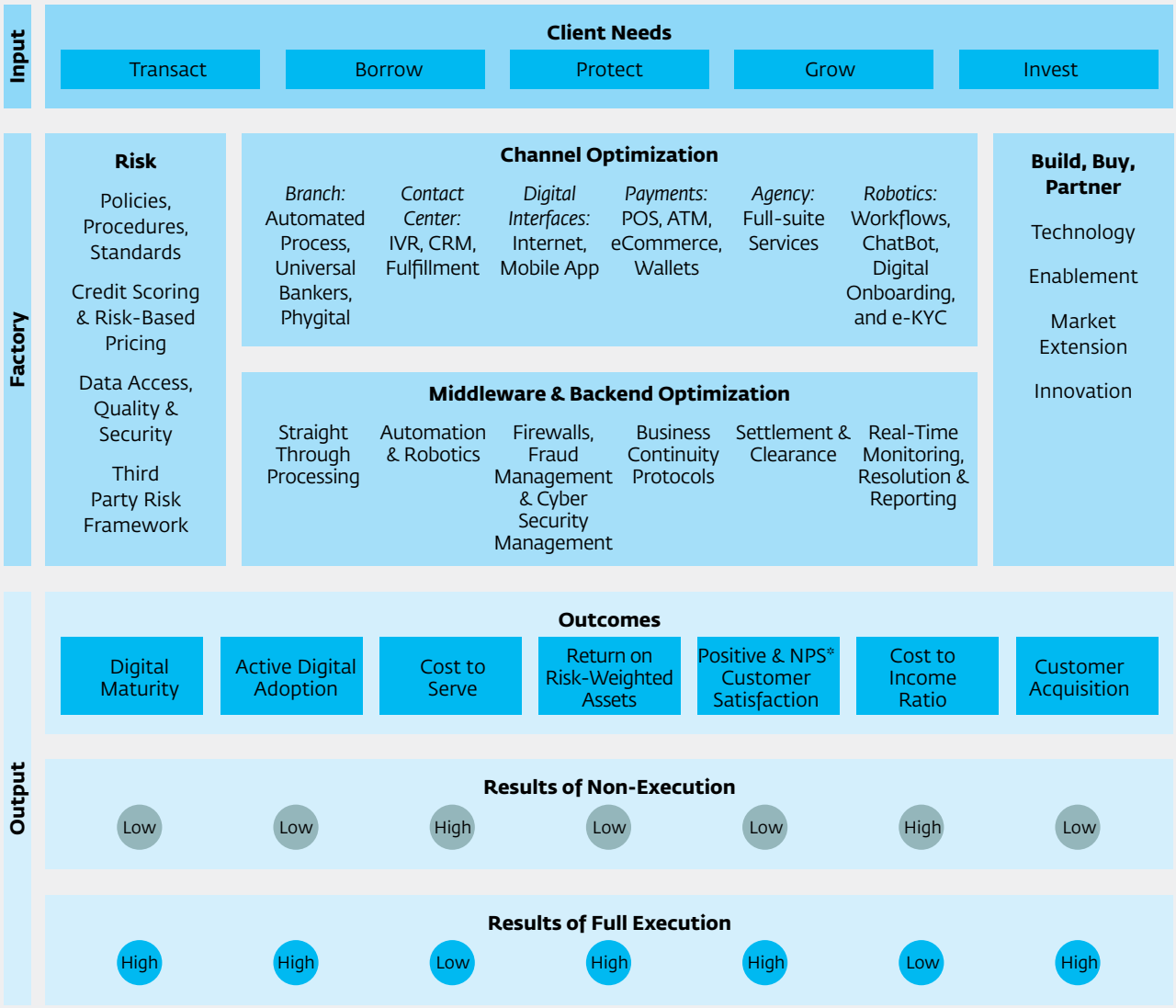


*Figure 1.3. Business Model Framework for MSME Banking in the Digital Era.*

* Net Promoter Score

**Factory**

The second element in the business model is the Factory, which represents the organizational choices and decisions required to identify an optimal pathway for meeting the client needs. While the model comprises separate elements for Channel Optimization, Middleware and Backend Optimization, Risk Management, and Build, Buy, or Partner, these sub-elements, in practice, have mutual dependencies that need to be considered as the banking organization makes the required, often difficult, decisions.

*Channel Optimization.* Achieved through (i) establishing diverse, accessible touchpoints that enable MSMEs to manage banking needs seamlessly, without the need for physical visits; (ii) omni-channel access, through a combination of mobile banking, web portals, WhatsApp, Short Message Service (SMS) banking, and interactive voice response (IVR) systems; (iii) chatbots and AI-based support for 24/7 availability, allowing MSMEs to transact and manage their finances remotely; (iv) embedded banking, through the integration of banking services into MSME tools such as accounting software, e-commerce platforms, and digital wallets. This enables businesses to access credit, manage cash flow, and make payments within the applications they already use; and (v) neo- and micro-branches, by deploying smaller digital-first branches or kiosks, especially in rural areas, with services that cater to MSME requirements, such as quick loan applications, cash management, and digital onboarding. These can be supported by agents or through the full suite agency banking model.

*Middleware & Backend Optimization.* Achieved through (i) ensuring all banking processes are digital, seamless, and frictionless, with an emphasis on automation to reduce turnaround times and administrative burdens; (ii) e-KYC and digital onboarding with digital identity verification that simplifies the account setup process, allowing MSMEs to onboard in minutes without visiting a branch; (iii) AI-powered loan processing by using AI for real-time loan eligibility checks, document verification, and automated risk assessment to approve loans within minutes, providing MSMEs with quick access to working capital; (iv) self-service options and automation to empower MSMEs to self-manage services like account statements, balance inquiries, and transaction history on mobile or web platforms; (v) automated processes like payment reminders, tax filings, and report generation; and (vi) integrated business management tools to provide MSMEs with access to accounting, inventory, payroll, and expense tracking within the banking platform, creating a single financial ecosystem.

*Risk Management.* An effective risk management strategy for MSMEs in the digital era includes a strong Enterprise Risk Management Framework (ERMF) for navigating enterprise-wide risks, and robust data management practices for access, quality, and security, together with a vigilant third-party risk management framework to mitigate third-party risks. Integrating these elements enables MSMEs to safeguard digital assets, maintain regulatory compliance, and enhance resilience in a technology-dependent environment.

› ERMF in the MSME sector aims to identify, assess, manage, and monitor risks that could impact business objectives. It enables (i) risk identification through systematic assessment of risks arising from operations, technology, market, and regulatory environments; (ii) risk assessment, by prioritizing risks based on impact and likelihood, with tailored approaches suitable for smaller enterprise structures; (iii) risk mitigation and control, by establishing controls, policies, and strategies that align with business goals, while considering resource constraints; and (iv) continuous monitoring, by using dashboards and risk reporting tools to ensure ongoing assessment, especially crucial for digital risk.

› Data Access, Quality, and Security ensures that the right people have timely access to necessary data, while minimizing exposure to sensitive information through the implementation of access controls and permission protocols for maintaining data integrity, and preventing unauthorized access. Data Quality emphasizes the importance of clean, consistent, and accurate data as a basis for reliable decision-making. Implementing validation checks, data governance policies, and regular audits are necessary to maintain high data standards. Data Security focuses on cybersecurity measures to protect against data breaches, ransomware, and unauthorized access using encryption, firewalls, and two-factor authentication to safeguard data at all points of access.

› Third-Party Risk Management Framework aims to manage risks associated with external vendors and partners who access or impact a company's data and operations. This includes (i) risk assessment to evaluate potential third-party risks based on vendor type, access level, and the criticality of services provided; (ii) due diligence, by conducting background checks, performance evaluations, and compliance assessments of third-party vendors; (iii) contractual safeguards, including specific security and data protection requirements in vendor contracts, ensuring they meet regulatory standards; and (iv) monitoring and review of performance through reviews, audits, and reporting to ensure ongoing compliance with security policies.

*Build, Buy, or Partner.* In the digital era, MSMEs face strategic decisions to leverage technology for enablement, market expansion, and innovation. Using Build, Buy, or Partner approaches helps MSMEs access the right resources and technology, extend their market reach, and innovate efficiently. "Build" allows for customized solutions, "Buy" provides immediate and cost-effective tools, and "Partner" brings collaboration and market access opportunities. By leveraging these strategies, MSMEs can effectively harness digital advancements and thrive in the digital era.

**Output**

The final element in the business model is the Output from the Factory element, when the various decisions have been executed. Output should be viewed in the context of the scale of execution; not surprisingly, organizations tend to exhibit outcomes that are directly related to the choices they make and the levels of execution. For example, non-execution of digital choices (Factory) in the model tends to lead to low active digital adoption, high cost-to-serve and cost-to-income ratios, and low customer acquisition, digital maturity, and customer satisfaction. This is in comparison to organizations that execute digital choices with diligence, resulting in high levels of digital adoption, low cost-to-serve and cost-to-income ratios, and high customer acquisition, digital maturity, and customer satisfaction. In the digital era, adopting digital choices is at the core of organizations that experience exponential growth in MSMEs over sustained periods.

## Implementation Roadmap

Implementing the MSME business model with an effectively integrated digital capability requires focus on the following critical areas:

1. **Digital Infrastructure Setup:** Invest in AI, cloud computing, and data analytics capabilities that enable advanced digital banking features.

2. **User Experience Design:** Focus on intuitive user interfaces, mobile accessibility, and a seamless multi-channel experience tailored to MSME needs.

3. **Risk and Compliance Management:** Deploy risk and compliance management software that aligns with evolving regulations while simplifying procedures for MSMEs.

4. **Partnerships and Ecosystem Development:** Partner with fintech firms, accounting software providers, and e-commerce platforms to create an integrated ecosystem that supports MSMEs at every stage of growth.

5. **Customer Feedback Integration:** Establish channels to collect and analyze MSME feedback continually, allowing for real-time adjustments and improvements in product offerings and service delivery.

The evolving ecosystem in the digital era has seen some key developments that can help FSPs develop a more relevant and effective business model framework to better serve the MSME segments. Leveraging key partnerships, the African digital landscape has witnessed innovative digital identification and KYC models, as well as MSME customer hyper-personalization, and the development of automated scoring models and credit risk management digitalization. These key capabilities and their applications will be discussed in detail in the upcoming chapters.

**CASE STUDY**

# *Equity Group, Kenya - Leveraging Digital to Reach 100 Million Customers*

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Equity Group Holdings is one of Africa's most recognizable financial industry brands, known for its services to entrepreneurs, women, and rural populations. Founded as a building society in 1984 and transformed into a bank in 2004, as of 2023, Equity had subsidiaries in six African countries, an asset base of 1.5 trillion Kenya shillings (KES) ($11.3 billion), a deposit base of KES 1.2 trillion ($9 billion), and about 18 million customers at group level.

Aiming to increase its MSME loan portfolio share to 65% and to increase the bank's overall number of customers to 100 million by 2030, Equity has deployed a comprehensive digital strategy for MSME banking, focusing on the following:

› Acquire customers digitally and move less mature customers from physical to digital channels.

› Reactivate dormant customers and target new untapped markets.

› Create external partnerships for new customers and segment the data.

› Introduce digital products and services.

The effort builds on a digital transformation that started as early as 2007 with an exploration of digital products, followed by the introduction of mobile banking and agent banking by 2010. Equity has since introduced, in 2014, its own mobile virtual network operator, Equitel, to offer inclusive, customer-focused financial services that socially and economically empower clients and stakeholders.

Key actions of the current business strategy include:

› Equipping branch staff with tablets to help visiting customers use self-service options.

› Introduction of several MSME-focused loan products and related nonfinancial products, such as Eazzy Loan, a mobile lending service.

› Data analytics to support credit decision-making.

› Offering microbusinesses and small enterprises a convenient and easy transition to digital payments on the Pay-With-Equity platform, with settlements in real time and interoperability with other platforms.

› Incentives for customers to go digital, including discounts on self-digital onboarding and digital transactions.

› External partnerships (for example, in the agricultural sector), working with off-takers, aggregators, and other partners for:

*Capacity-building* initiatives to move farmers from subsistence farming to agribusiness.

*Support* for de-risking mechanisms for the bank's financial products.

*Streamlining* the loan origination process by using macro data from partners.

*Using* data from the flow of goods, services, and money to extend banking solutions and products to MSMEs within these value chains.

› Director-level staff appointment to drive the change-management process across the bank.

› Investment in capacity building and upskilling of staff.

Equity's digital strategy thus encompasses everything from products and channels to customer relations, strategic partnerships, and back-end systems, and it has clearly paid off; at the Euromoney awards in 2021, Equity Bank was named Africa's best bank for small and medium enterprises.

As of fiscal year 2022, transactions via digital channels accounted for over 97% of all transactions, significantly reducing transaction costs.

Key lessons learned include the need for:

› Strong internal alignment across various operating teams and strong technical capabilities to deliver on execution.

› Internal change management, with senior leadership appointments.

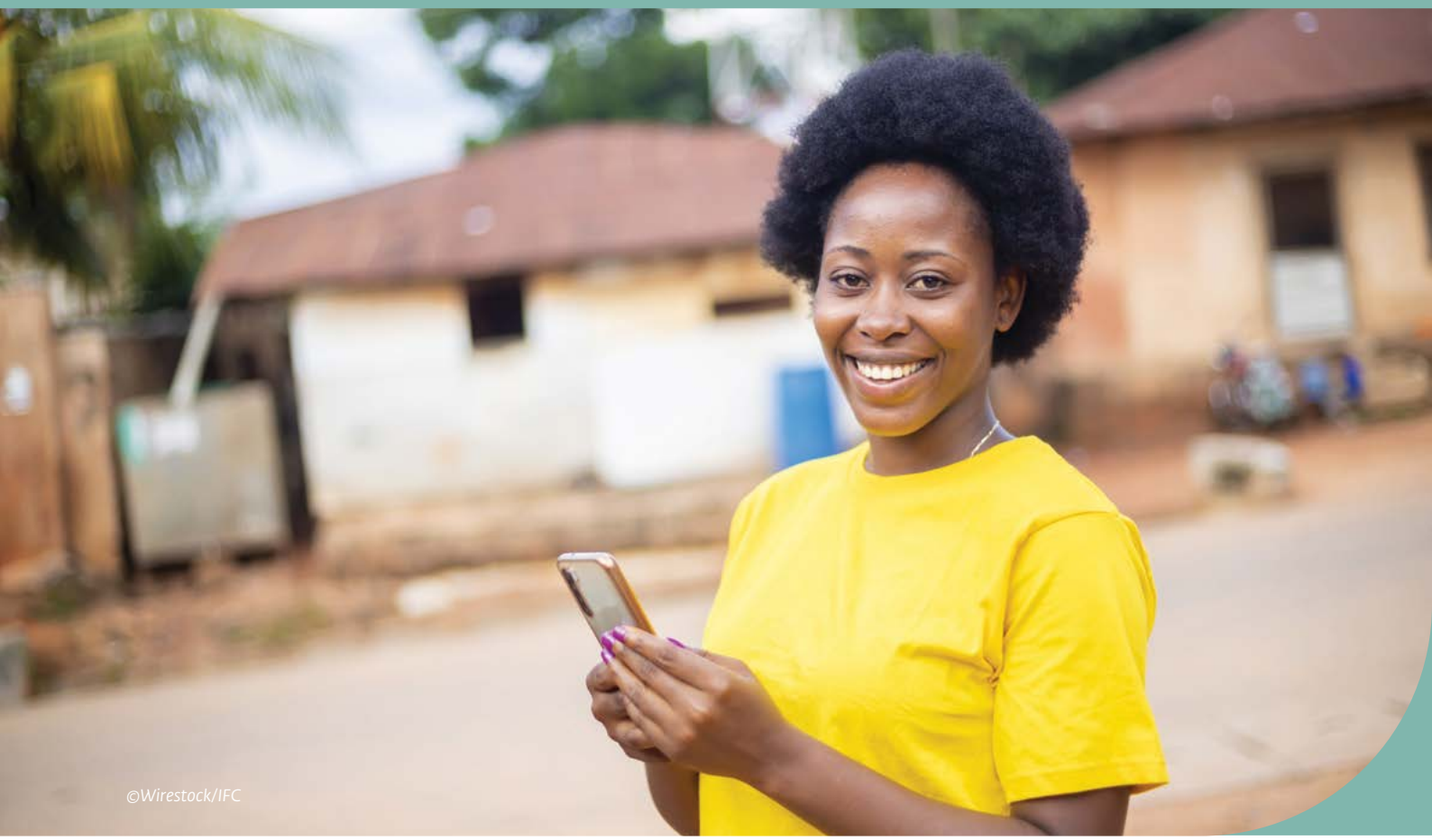
› Capacity building and upskilling of staff, both critical in driving the initiatives.

› Creating external partnerships to enhance capabilities, target new segments, and provide access to customer data to strengthen product delivery and credit risk management.

› Providing incentives to help drive desired customer behavior.

2

# Data: The Foundation *of* MSME Finance *in the* Digital Era



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*Insights from data analytics can play a significant role in supporting decision-making across the customer journey, helping the financial institution become more customer-centric and efficient. With a robust data strategy and governance framework in hand, as well as high-quality data and tools, FSPs can position themselves for larger-scale customer acquisition, better risk management, products better suited to customer needs, and better targeting of specific sub-segments, as illustrated in Figure 2.1 on page 32.*

*As customer data capture has evolved with regulatory and ecosystem developments, one of the key challenges for FIs with legacy systems is the limited availability of good, comprehensive and digitalized customer profile data on their existing client portfolios. This has implications for the cost, time, and effort required to fully digitalize and transform to a data-based organization. Any good data and digitalization strategy should include data collection and digitalization of existing client portfolios to effectively capitalize on the opportunity offered by existing client relationships.*

*This chapter presents the basics on how FIs can go about building a data-driven organization to better serve MSMEs. While it is ideal to implement data analytics across all steps of the customers' journey, FIs should assess their current data capabilities and adopt an agile approach to implementation, prioritizing activity areas and building their capability over time. For those seeking guidance beyond this chapter, IFC's Data Analytics and Digital Financial Services Handbook[30] provides more in-depth advice.*

*The benefits of developing data capabilities go beyond the MSME business: FIs that incorporate data usage in their decision-making processes to create data-driven organizations can gain across all business areas and better serve other customer segments.*

## Sources of Data

There are three main sources of data that can be generated or utilized across the customer journey (Table 2.1). The *Data Analytics and Digital Financial Services Handbook*[31] recommends combining multiple data sources to gain a more nuanced understanding of the information provided by the data. While using client and especially customer data from third parties, compliance with country regulations on the use of data is critical and needs to be incorporated in the governance model.

**Internal institutional data**

Customer profile data are collected by FSPs during account opening and loan application processes, both for business reasons and to comply with regulation. These data usually include information on gender, location, and income. Some of the data are verified by official documents, while some are discussed and captured during interviews. In the case of borrowers, much of this client information is captured digitally in a loan origination system or an origination module in the core banking system.

Transactional data, captured on the FSP's systems, offer information on activity levels and product usage trends—use of bank accounts and other services such as cards, loans, payments, and insurance. Simple comparisons of transaction by value versus volume may offer very different insights into client behavior. Use of bank accounts and services leaves objective data trails that can be analyzed for patterns signaling different levels of financial capacity and sophistication. Different usage patterns may also signal different levels of risk.

Customer feedback and complaint management data can be sourced through multiple channels including call centers, branch networks, and field staff. When collated and analyzed on a customer management system, these data provide a good source for understanding the issues that customers face and their views about products and customer service. The data can be analyzed by categorizing issue types and resolution times.

Nonbank agents are a good source of customer data, especially for digital financial services providers, as the agents are the primary face to the customer. Understanding which locations and agents are the most active can provide insights to help improve agent network performance. Tracking the patterns of agent use and activity may reveal insights about both customer preferences and agent performance. Such information can be directly recorded from mobile phones, POS devices, or transaction-point computers. Alternatively, it could be indirectly associated, such as through agent registration forms, requiring it to be merged into the transactional data pipeline for analysis.

[30] IFC and The MasterCard Foundation, 2017, Data Analytics and Digital Financial Services Handbook: https://www.ifc.org/en/insights-reports/2017/dfs-data-analytics

[31] Ibid.


*Figure 2.1. The Use of Data Analytics Across the MSME Finance Customer Journey*

**Public domain data**

Data from public sources, such as census reports on economic and business activities, particularly for MSME sectors, can be a valuable source for FSPs aiming to highlight specific industry sectors, their business potentials and geographic clusters. Additionally, surveys on living standards, demographic variables, and health can be particularly useful in identifying segments that offer opportunities for financial inclusion, and can provide insights into education levels, income, access to internet, and technology adoption. These data can help an FSP develop and execute targeted campaigns based on potential and opportunity.

Market research can be used to better understand customers and market segments, and to track market trends, develop products, and seek customer feedback. It can either be qualitative or quantitative, and may be useful in understanding how and why customers use particular products. FSPs can conduct research themselves through field staff, contracting third-party research firms, or using publicly available research reports.

**Third-party data**

Credit bureaus and registries are excellent sources of objective and verifiable data. They provide a credibility check on the information reported by loan applicants and can often reveal information that the applicant may not willingly disclose. Most credit bureau reports and public registries can now be queried online, with the relevant data accessed digitally. However, a challenge is that not all African markets have fully functioning credit reporting infrastructure yet, and even for those that do, data on MSME customers tends to be limited.

| Internal Institutional Data | External Data: Public Domain | External Data: Third Party (Commercial/Partnerships) |
|---|---|---|
| • Customer profile data<br>• Transaction behavior<br>• Product and service usage<br>• Channel interactions<br>• Agent assisted transactions<br>• Customer feedback and complaint management<br>• Primary customer research | • Census data<br>• National household surveys<br>• National and international financial surveys<br>• Industry analysis<br>• Published market research | • Credit bureau data<br>• MNO Data Records<br>• Social media profile and usage<br>• Utility payments<br>• E-commerce data<br>• Geospatial data<br>• Specialist analysis and research<br>• Partner market research |

*Table 2.1. Key Data Sources for MSME Banking in the Digital Era*

Geospatial data refers to data that contain locational information, such as global positioning system (GPS) coordinates, addresses, cities, and other geographic or proximity identifiers. In recent years, very granular geospatial data have allowed FSPs to examine and cross reference demand-side factors such as level of financial inclusion, customer location, levels of poverty, and mobile voice and data usage, along with supply-related factors such as agent activity, rural or urban characteristics, and presence of infrastructure. This can offer insights that may be helpful to customer acquisition and marketing strategies, agent or branch expansion, and competitor or general market analysis. Geospatial data can offer more granular insights than typical socioeconomic indicators, which are generally only available in aggregate format.

Social media profile and activity data are becoming increasingly important, with FSPs developing online communication channels and maintaining a presence on social media sites. Online behavior data may offer information on customer feedback, attitudes, lifestyles, goals, and how financial services can play a role in customer lives. Social media network data include data on social connectedness, traffic initiated, and online web behavior, including the timing, location, frequency, and sequence of visiting a website or a series of websites. Public profiles from social media can also be useful to verify contact details and basic personal customer information. However, social media as a data source has its limitations, with FSPs only able to access the social media accounts of customers who opt in, limiting the number of customers required to build a large enough database for meaningful analysis. Some customers may not be active on social media, either through choice or circumstances. Profile data, even when available, may be biased.

MNOs have access to call data records and cell tower coordinates, allowing them to conduct targeted marketing campaigns and promotions. MNOs that offer mobile money services have access to both call data and the digital financial services transactional database; this information, when combined for analysis, is more likely to help predict customer activity and usage than simple demographic data. In some markets, MNOs and FSPs partner with each other to benefit from the combined data to identify potential clients, determine needs, offer digital financial services (such as payments and microlending), and run acquisition campaigns.

Some FSPs are digitalizing their field forces in order to improve the collection and management of customer data, such as Tunisian MFI Enda Tamweel in the following case study.


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**CASE STUDY**

# *Enda Tamweel, Tunisia - Digitalizing Field Operations to Improve Data Collection*

*© Dana Smillie/World Bank*

Enda Tamweel, [32] a leading microfinance banking institution in Tunisia created in 2015 by the NGO Enda Inter-Arabe, has piloted a Digital Field Application (DFA) to improve data collection from its 450,000 customers through its field officers; Enda needed to improve how its field officers interacted with customers and collected data during customer engagements to provide support.

Key actions by Enda included:

› Developing a comprehensive long-term digital strategy to support its overall business growth strategy, aligned with its broader initiatives across the organization.

› Improving existing processes to remove any inefficiencies before digitalization to ensure a seamless customer experience.

› Introducing a DFA solution to allow loan officers to create customer profiles directly through tablets provided, eliminating the need for paper, improving data entry, and fast-tracking product processing and turnaround times.

› Extending the creation of profiles to a self-service option to optimize the customer journey, designed to ensure that customers can complete the loan application via a link sent to the customer's mobile from the bank.

› Acquiring a solution for agent journey digitalization with additional modules, including debt collection, information requests and complaint management, marketing campaigns, and abandonment management.

› Acquiring 1000 tablets for deployment, which were prepared and configured with a VPN (virtual private network) while awaiting the web application firewall. A mobile device management policy was implemented on the tablets.

› Preparing the required network connectivity and interfacing with the core banking system to support the necessary infrastructure and system layer. The process included data migration to the new working platform, and integration of the application with the KYC process and the ESB (enterprise service bus) system.

› Providing technical and business training, followed by deployment and change management, to ensure widespread use of the application.

Key learnings from the DFA implementation include:

**1. Ensure the DFA rollout is part of a broader business strategy.** Enda deployed its DFA solution as part of its 2025 Digital Strategy, ensuring that it aligns with other initiatives and contributes to overall objectives and targets for improving operational efficiency, customer experience, and microfinance innovation. A standalone DFA rollout risks producing only limited results or may even be counterproductive.

**2. Optimize the customer journey before digitalizing.** This ensures that inefficient legacy processes are not automated, as doing so would neither improve customer satisfaction nor enhance data collection. This also ensures clarity on the type of data to be collected in the field and how it will be used further down the data value chain—for example, to refine customer profiling or enhance product campaigns.

**3. Manage access to devices.** Institutions must have a clear procurement strategy and ensure devices can be easily accessed and purchased at the right price. Additionally, there should be clarity on how devices will be deployed to field staff; for example, whether they should be made available to individuals or teams, or at branch level.

**4. Have a clear change-management process.** Given the level of change, it is important to have a clear communication and change-management strategy for all relevant stakeholders. The use of change champions and tested change methodologies to proactively manage employee resistance to change, for example, has proven very useful.

In addition, the following lessons from FIs in Kenya, India, and Serbia, further serve as guiding principles for implementing DFA solutions:[33]

*Invest in requirement analysis.* Determine clear specification from the outset of the functional requirements of the DFA solution, engaging management, field staff, and other relevant departments in the process.

*Prioritize business process re-engineering.* While there may be a temptation to overlay a DFA on top of existing processes, this limits the benefits the solution can offer and could negatively impact customer experience and decrease ROI. A thorough review of the pre-DFA processes is required to understand how these can be improved using technology.

*Develop a clear data-collection plan.* The introduction of a DFA sometimes leads to the transfer of responsibility for data entry from branch to field staff. Such a transition needs to be carefully managed, utilizing best-practice change management to build staff buy-in, and training to build capacity at all levels.

*Monitor pilot results before scaling.* Given that DFAs typically force changes in field staff workflow and back-office processes, a pilot of the technology is essential. Always define from the outset the criteria for pilot success, and ensure that these metrics are measured prior, as well as during, the pilot.

[32] https://www.endatamweel.tn/

[33] Accion, 2015, New Case Study Provides Evidence on the Impact of Digital Field Applications: https://www.mfw4a.org/blog/new-case-study-provides-evidence-impact-digital-field-applications

## Creating a Data-Driven Organization

To successfully leverage data, it is critical to establish a data management practice at the organizational level, rather than at segment level only. For the FSP to effectively use data for MSME finance will require adoption by key functional areas across the organization, for example credit and risk management, to create a data-driven enabling environment. Critically, the application of data needs to be ingrained at executive level across all management and decision-making processes to have any useful impact.

A successful data-driven MSME business strategy will require an organization-level transformation that aligns with the organization's business objectives, as outlined in this section and illustrated in Figure 2.2.[34]

## Assess Organizational Capability

To develop a data strategy for MSME finance, FIs need to start by assessing their current capability to acquire, manage, analyze, and apply data to relevant decision-making processes across the organization. There are five key areas to assess:

**Organizational culture –** What is the current extent of data use for decision-making regarding MSME clients? Is there internal collaboration for sharing data across systems and departments? How is the culture of data sharing and usage fostered in the organization? Is there a clear practice of data analysis and reporting across the organization, especially to senior management?

**Strategy alignment –** Does the overall organization strategy have a focus on data? What kind of data are needed to achieve the strategic objectives for the institution's MSME business? How focused is the current business strategy on the use of data and analytics to drive the MSME business? What specific actions will be required to ensure that the data-focused strategy will deliver on the targeted revenue growth and profitability from the MSME business?

**Data availability –** How will the required data be acquired from internal and external sources? Are there any existing external partnerships or collaborations with organizations that can provide data on MSMEs? What kind of partnerships will be needed to obtain data from external sources? How much internal data are available across the organization? In what form are the data available and across which systems? What is the quality of the data, and what level of effort is needed to improve quality?

**Technology –** Does the organization have system capability to generate and store the required data for MSME finance? Are the various systems in use across the organization integrated for data transfer and collation? What kind of technology will be required to meet the organization's data needs? Is there sufficient funding available to source and implement the required technology and systems?

**Staff skills –** Do the existing staff have the required skills to acquire and analyze the relevant data for data-driven MSME finance? How can the required skillsets be developed in the organization? Does the organization have the relevant recruitment processes to acquire skilled staff?

**Operations –** Are there clearly established processes and policies in place for data usage? How will data security and integrity be ensured? Is there a transformation and project management structure in place? How will data be migrated between systems and platforms?

**Product –** How is the process of product development managed? How are data used in product development, management, and monitoring? What type of data are used for product development, and how are the data acquired?


*Figure 2.2. Establishing a Data Management Practice*

[34] Adapted from Oxford Policy Management, Accion, Master Data Management, 2019, Data Management and Analytic Capability (DMAC) toolkit.

| Data Readiness Checklist | Mark (1 = low, 5 = high) | | | | |
|---|---|---|---|---|---|
| Organisational Overview | | | | | |
| Corporate strategy focused on data | 1 | 2 | 3 | 4 | 5 |
| Data analytics team set up and appropriately staffed | 1 | 2 | 3 | 4 | 5 |
| Corporate culture embracing data | 1 | 2 | 3 | 4 | 5 |
| Change management set up to drive innovative change | 1 | 2 | 3 | 4 | 5 |
| Product | | | | | |
| Product concepts derived based on data | 1 | 2 | 3 | 4 | 5 |
| Customer understanding processes and practices clearly established | 1 | 2 | 3 | 4 | 5 |
| Business case for product concepts clearly defined and communicated | 1 | 2 | 3 | 4 | 5 |
| Product development process supported by data inputs | 1 | 2 | 3 | 4 | 5 |
| **Data Readiness Checklist** | **Mark (1 = low, 5 = high)** | | | | |
| Operations | | | | | |
| Processes and procedures for using data clearly established | 1 | 2 | 3 | 4 | 5 |
| Project management structures clearly defined | 1 | 2 | 3 | 4 | 5 |
| Clear risk mitigation processes in place and systematically followed | 1 | 2 | 3 | 4 | 5 |
| Data strategy and governance in place | 1 | 2 | 3 | 4 | 5 |
| Technology and Systems | | | | | |
| Logical access to systems and data clearly defined | 1 | 2 | 3 | 4 | 5 |
| Information security protocols clearly established | 1 | 2 | 3 | 4 | 5 |
| IT structure set up to support data processes | 1 | 2 | 3 | 4 | 5 |
| Integration of various data entries into core system | 1 | 2 | 3 | 4 | 5 |
| Clearly established digital strategy | 1 | 2 | 3 | 4 | 5 |

*Figure 2.3. Example of Data Readiness Checklist*[35]

[35] Source: FSD Africa, 2020, DMAC Toolkit: Unleashing the power of data to transform your business: https://fsdafrica.org/wp-content/uploads/2020/01/DMAC-methodological-toolkit_MASTER.pdf

The gaps and requirements identified in the assessment should be addressed in the design of a data strategy and action plan. The strategy and action plan will depend on the type of organization, resources, and objectives. Some FIs may aspire to digitalize almost entirely, while for others it may be sufficient to employ a larger range of data sources and tools in credit underwriting processes and risk management for the MSME client segment. Figure 2.3, page 39, provides an example of a checklist designed to assess an organization's starting point. Scores ranging from 1–5 (1: very weak, 5: very strong) can be assigned to each area based on an objective assessment, helping to determine the appropriate way forward.

## Create a Data Strategy and Action Plan

The data strategy outlines how the FSP collects, aggregates, and analyzes data on MSMEs to develop value propositions relevant to the needs of target MSMEs, aligning with their business objectives. The strategy should be a high-level statement of the FSP's strategic intentions for integration of enterprise-wide data on MSMEs, and at a minimum should cover the following:[36]

> Affirmation by the FSP's Executive Committee of the importance of data to delivering business outcomes, based on senior management's identification of the reasons why the organization needs to use data better.

> Identification of the FSP's main data assets and the main elements of specific data points to be included.

> Recognition of the main data challenges faced by the FSP and a set of priorities for addressing them.

> Commitment to data quality and security, plus an outline of the governance framework that will deliver this.

Specific to the MSME business, the data strategy and action plan should consider the business growth objectives and the FSP's risk appetite and should clearly outline a roadmap for how data will be acquired and used for serving MSME clients. Creating such a roadmap usually involves tackling the following questions:

> How will data help improve our MSME business?

> What are our primary data assets – internal and external?

> How will we collect, aggregate, and analyze data for decision-making processes?

> What are the investments required in technology to build our data usage capability?

> What are the people skills and training required to work with this data?

> How will we create the right culture for data-driven decision-making?

To ensure effective implementation of the strategy, it is critical to create the right culture to drive the reform agenda and reinforce the desired objectives. A common best practice is to establish a dedicated senior resource to oversee and manage the transformation across the organization. The transformation process should include communicating the data strategy and how it will support the institution's objectives to all staff, monitoring pre-set key performance indicators (KPIs), and ensuring delivery of staff training.

## Establish Data Architecture and Governance Framework

The data governance framework defines the decision-making structures, rules, processes, policies, and culture that guide the use of data for business needs.[37] To ensure a unified and consistent view of data flow across both the organization and the customer journey, it is critical to:

> Document the data sources—how and from where the data will be sourced.

> Define the existing or required integration between the various systems and data sources to ensure seamless collection, collation, and reporting of data.

> Ensure appropriate data quality tools are in place before data are consumed—for data cleansing, accuracy, reporting, and visualization.

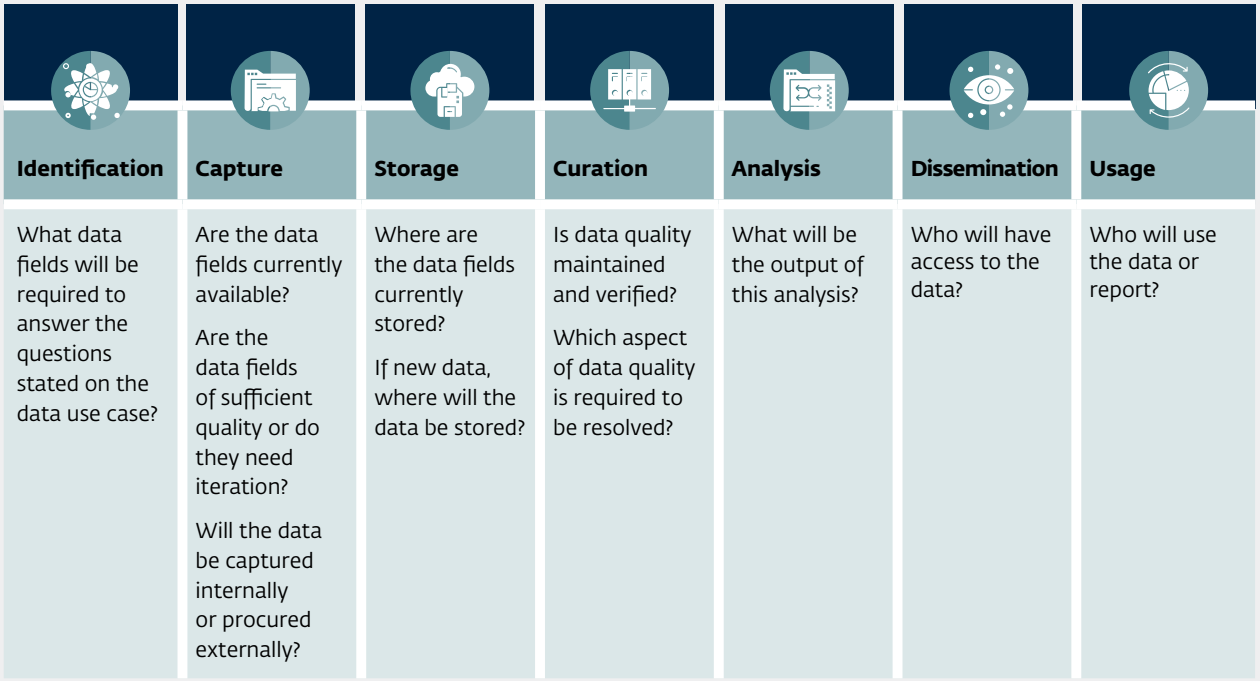
> Ensure that the decision-making structures, roles, processes, and policies for guiding the use of data for business needs are aligned with the organization's needs and external compliance requirements.

> Ensure that the organization is positioned to meet data regulations and that appropriate controls are implemented to stay compliant.

The data value chain describes the process of data creation and usage across the data lifecycle. It is the sequence of activities involved in creating and transforming raw data into valuable insights and outcomes, and encompasses the entire process from identifying what data should be collected, to how and where the data should be stored, as well as how to process the data for usage, analysis, and dissemination. Many of these steps should have been addressed when an organization defines its data strategy, architecture, or governance framework, but for clarity the key areas for consideration are shown in Table 2.2.

[36] Oxford Policy Management, Accion, Master Data Management, 2019, Data Management and Analytic Capability (DMAC) toolkit.

[37] Ibid.



| Identification | Capture | Storage | Curation | Analysis | Dissemination | Usage |
|---|---|---|---|---|---|---|
| What data fields will be required to answer the questions stated on the data use case? | Are the data fields currently available?<br>Are the data fields of sufficient quality or do they need iteration?<br>Will the data be captured internally or procured externally? | Where are the data fields currently stored?<br>If new data, where will the data be stored? | Is data quality maintained and verified?<br>Which aspect of data quality is required to be resolved? | What will be the output of this analysis? | Who will have access to the data? | Who will use the data or report? |

*Table 2.2. Key Considerations in the Data Value Chain*

## Apply Analytics and Leverage Insights

Data analytics is a core function across the entire MSME customer journey in an MSME finance business adapted to a digitalized context; data analytics can offer insights on, for example, customer needs, cross-selling options, and the likely future financial capacity of clients, depending on the level of analytical sophistication. This handbook does not offer detailed guidance on building data analytics capabilities in FIs; however, information on the topic is available in IFC's *Data Analytics and Digital Financial Services Handbook*.[38]

The Data Science Analytical Framework in Figure 2.4, page 42, offers a high-level description of analytical methods, classified by their operational use and relative sophistication: descriptive, diagnostic, predictive, and prescriptive. The least complex methodologies are often descriptive in nature, providing historical profiles of institutional performance, aggregated figures, and summary statistics. They are also least likely to offer a competitive advantage but are nevertheless critical for operational performance monitoring and regulatory compliance.

Conversely, the most innovative and complex analytics are prescriptive, optimized for decision-making, and offer insights into future expectations. Key MSME finance innovations, such as automated credit scoring and predictive modeling, fall into the latter category.

**Descriptive Analytics –** uses high-level aggregate reports of historical records and answers questions about what occurred; KPIs fall within this category. The analysis can help present and report analytics on the past and present state of MSMEs. This is a starting point for gaining deeper insights into MSME needs and building the capabilities of data usage into the decision-making process, critical for performance monitoring of existing MSME relationships.

**Diagnostic Analytics –** involves finding key drivers or understanding changing data patterns. This type of analysis asks why something happened, determining, for example, why transaction patterns changed and examining both correlation and causation. Diagnostic analysis usually requires more sophisticated methods and research designs, such as segmentation,

[38] IFC and The MasterCard Foundation, 2017, Data Analytics and Digital Financial Services Handbook: https://www.ifc.org/en/insights-reports/2017/dfs-data-analytics

A/B testing (statistical method where two or more variants of an experiment are shown to users at random to determine which performs better for a given conversion goal), regression (enables multivariable analysis to estimate relationships for a dependent variable, usually a metric of business interest), and geospatial analysis (groups data according to their location on a map, or in relationship to place and proximity). Diagnostic analyses can provide a deeper understanding of MSMEs' behaviors and needs, helping to develop and implement focused campaigns, and can specifically lead to enhanced decision-making.

**Predictive analytics –** enables forward-looking decision-making and data-driven strategies. From a business perspective, predictive models can deliver operational efficiencies by identifying high propensity MSME customer segments and expanding reach at lower costs via targeted marketing campaigns. This is critical for targeting MSMEs, traditionally a high-cost segment to target and acquire. Predictive analytics can also help enhance customer support by proactively anticipating the service needs of MSMEs and offering the solution when most needed by the MSME client. This requires investments in machine learning and advanced modeling techniques.

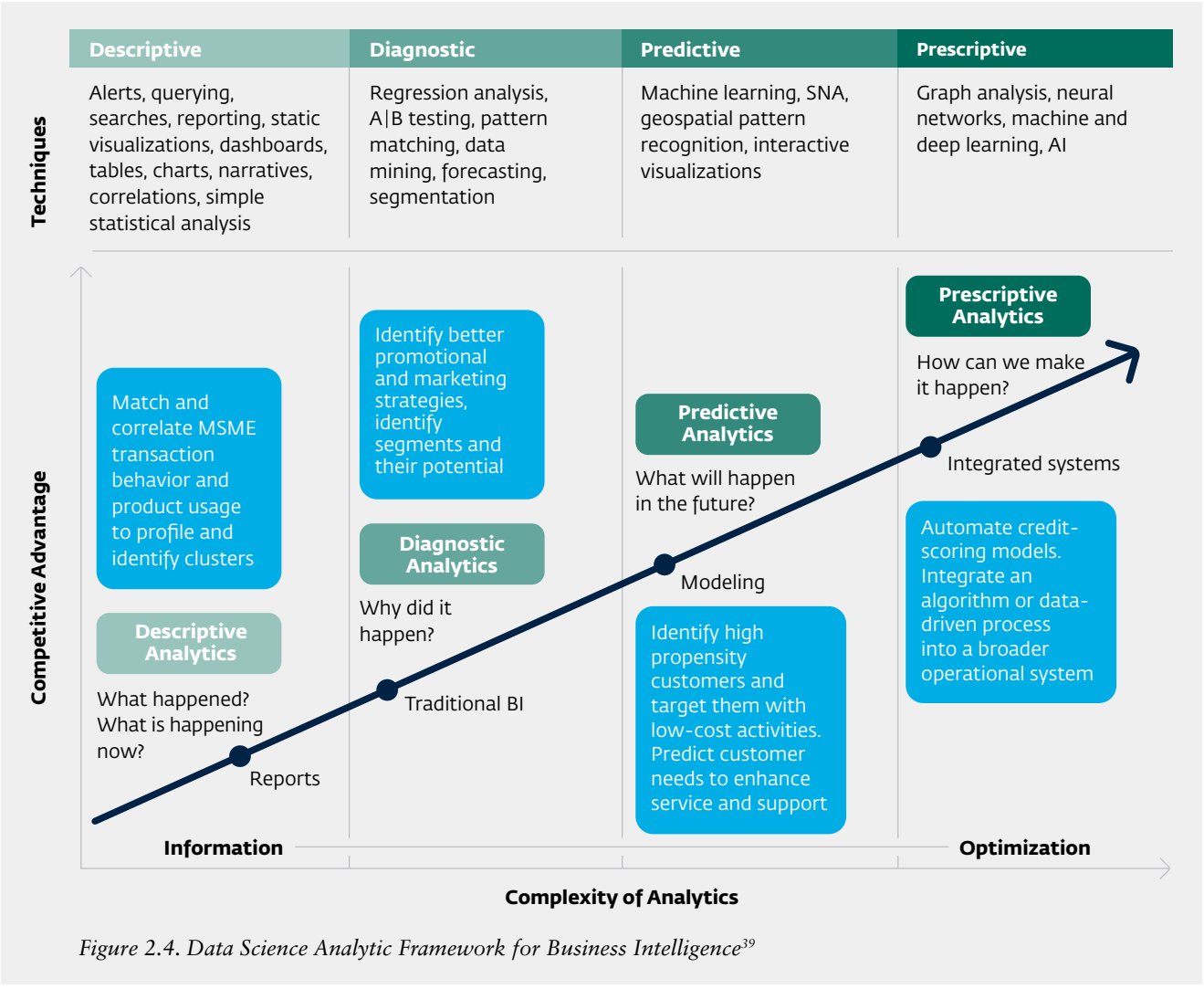



*Figure 2.4. Data Science Analytic Framework for Business Intelligence*[39]

[39] Adapted from IFC's Data Analytics and Digital Financial Services Handbook.

*©Nyani Quarmyne/IFC*

**Prescriptive analytics –** methods in this category tend to be categorized by predicting or classifying behavioral aspects in complex relationships and include an advanced set of tools such as AI and deep learning.

## Optimize Data Infrastructure and Technology Tools

The organization's systems and infrastructure need to be optimized to ensure efficiency, accuracy, and security. Several approaches and appropriate technology tools or systems can be layered on the data architecture to support collection and storage. Research conducted among industry actors for this handbook highlights some examples of approaches to optimization (see Table 2.3).

Ensuring a cybersecure environment is a critical component of the process, requiring particular attention, especially as data protection laws are increasingly enacted across Africa (Box 1, page 46). Security breaches and cybercrimes are becoming more sophisticated and the ability of an FSP to secure its customer data warrants special attention. Therefore, FIs should consider adopting a comprehensive cybersecurity plan that covers the five elements outlined by the National Institute of Standards and Technology (NIST),[40] a United States Agency that promotes global standards around science and technology. Figure 2.5, page 45, illustrates specific activities from the NIST Cybersecurity Framework, demonstrating how FIs can use these elements to design and implement an effective high-level cybersecurity risk management strategy.

**Identify:** This initial and important step covers classification of the physical and software assets, assessment of the business environment, listing of the cybersecurity assets and the inherent asset vulnerabilities, and defining the risk management strategy.

**Protect:** Implement proactive identity management (safeguards) and asset controls, conduct awareness training, and establish data security protection consistent with the organization's risk strategy and appetite. FIs can further reactively implement protection processes and procedures (countermeasures), protect resources through maintenance, and use technology solutions to ensure the security and resilience of systems and assets.

**Detect:** Implement policies and processes to ensure that anomalies and events are detected, and their impact and probability are well understood. FIs will also need to design and implement continuous monitoring and interactive capabilities, as well as drive continuous maintenance of detection processes.

**Respond:** FIs can introduce and institutionalize response planning processes that are executed during and after an incident. This should include supervision of the communications and channels, conducting post-incident analysis, documenting and assessing the impact of incidents, outlining the mitigating steps and activities, and incorporating lessons learned to drive continuous improvements and compliance (if required).

**Recover:** This involves the design and implementation of the recovery planning processes and procedures to restore systems, applications, and assets of the FSP after a cybersecurity incident. Organizations will need to document and implement continuous improvements and deploy internal and external stakeholder communications during and after recovery from the incident.

## *Data Regulation: An Evolving Environment*

As FIs build their data governance framework, they must adhere to applicable laws and regulations governing data management. In Africa, 36 out of 54 countries have strengthened their legal and regulatory data protection frameworks, while 21 countries have signed the African Union Convention on Cyber Security and Personal Data Protection, adopted June 27, 2014 (as of July 2024[41]). Countries such as Nigeria, South Africa, Tanzania, and Uganda stand out as best practice for the region in the implementation of legal frameworks for data protection. A few examples of the data privacy regulations and initiatives that these countries have adopted are highlighted in Box 1, page 46.

### Regulating digital lending applications

With the increase in digital lending platforms, central banks are issuing their own regulations to strengthen oversight and controls over digital lending to restrict unethical practices, particularly in microlending. After the launch of mobile money services in 2012, Kenya experienced exponential growth in non-deposit-taking lending apps that remained relatively unsupervised. In 2020, the Central Bank of Kenya issued the Central Bank of Kenya Amendment Bill 2020, barring unregulated digital lenders with predatory practices.[42]

[40] NIST, 2018, Framework for Improving Critical Infrastructure Cybersecurity: https://nvlpubs.nist.gov/nistpubs/CSWP/NIST.CSWP.04162018.pdf

[41] African Union, List of Countries Which have Signed, Ratified/Aceded to the African Union Convention on Cyber Security and Personal Data Protection, 08.07.2024: https://au.int/en/treaties/african-union-convention-cyber-security-and-personal-data-protection

[42] Strathmore University, 2020, The Central Bank of Kenya Amendment Bill (2020): A reflection on the public discussion on unlocking regulation of digital lenders: https://cipit.strathmore.edu/the-central-bank-of-kenya-cbk-amendment-bill-2020-a-reflection-on-the-public-discussion-on-unlocking-regulation-of-digital-lenders/

| Data process | Potential approach to optimize the process | Examples of tools or systems that can be used | Applicable data architecture layer |
|---|---|---|---|
| **Data collection** | • Digitalize field operations and data capture<br>• Improve KYC data capturing processes through automation | • DFAs<br>• API integration to third parties<br>• Biometrics<br>• Geolocation | • Data sources<br>• Data integration |
| **Data storage** | • Modernize 'legacy systems' and leverage new banking system capabilities | • Master data<br>• Relational Database Management System<br>• Cloud computing and infrastructure | • Data sources<br>• Data management<br>• Analytical platform |
| **Data security** | • Build a cybersecure environment | • Two-factor authentication<br>• Data encryption<br>• Data masking<br>• Business continuity plan | • Security and accessibility |

*Table 2.3. Data Infrastructure Optimization: Approaches and Tools*

| IDENTIFY | PROTECT | DETECT | RESPOND | RECOVER |
|---|---|---|---|---|
| • Asset Management<br>• Business Environment<br>• Governance<br>• Risk Assessment | • Asset Control<br>• Awareness Training<br>• Data Security<br>• Information Protection<br>• Processes and Procedures<br>• Protective Technology | • Anomalies and Events<br>• Security Continuous Monitoring<br>• Detection Process<br>• Penetration Testing<br>• Ethical Hacking | • Resource planning<br>• Communications<br>• Analysis<br>• Mitigation<br>• Improvements | • Recovery Planning<br>• Improvements<br>• Testing<br>• Communication<br>• Documentation |

*Figure 2.5. U.S. National Institute of Standards and Technology Cybersecurity Framework*

# *Box 1.*
# *Data Protection Regulations in Africa*

**Nigeria:** *The Nigeria Data Protection Regulation 2019[43] is the principal privacy and data protection legislation in the country, supported by an implementation framework released by the National Information Technology Agency in 2020.[44] In February 2022, the Nigeria Data Protection Bureau was established to oversee data protection regulations and enforcement, aiming to strengthen data privacy measures and safeguard personal information.*

*Within the Regulation, FIs can lawfully process data, but are under obligation to obtain consent from the data subject. Where data are obtained from or transferred to a third party, FIs must have written consent from consumers before sharing any personal data with a third party or use it for promotional offers. For third-party processing, a written contract must be established between the third party and the data controller before transferring any data for processing. Furthermore, organizations are required to develop the necessary security measures such as policies for handling data and implementing technology solutions, e.g., firewalls, data encryption, and cybersecurity measures.[45]*

**South Africa:** *The Protection of Personal Information Act, 2013,[46] was promulgated on November 26, 2013, following the President's signature. It became fully enforceable on July 1, 2021, except for one section, which was staggered until February 1, 2022, before it became enforceable.[47] The purpose of the law is to ensure all South African institutions conduct themselves in a responsible manner when collecting, processing, storing, and sharing another entity's personal information. The law "promotes the protection of personal information processed by public and private bodies, introduces minimum requirements for the processing of personal information, outlines the rights of data subjects, regulates the cross-border flow of personal information, introduces mandatory obligations to report and notify data breach incidents, and imposes statutory penalties for violations of the law."[48]*

*As a direct result of these laws, FIs need to appoint an Information Officer and a Deputy Information Officer to ensure compliance and deal with data subject requests and complaints. Institutions also need to develop and implement a data protection and privacy compliance framework, maintain documentation of all processing, conduct regular internal training sessions on the requirements of the law, and secure the integrity and confidentiality of personal information in their possession against loss, destruction, or unlawful access.[49]*

**Tanzania:** *The Personal Data Protection Act, 2022,[50] was passed into law by the President of Tanzania on November 27, 2022. It covers general data processing principles, including lawfulness, fairness, transparency, purpose limitation, data minimization, accuracy, storage limitation, integrity, and confidentiality. The Tanzanian Data Protection Act provides for the following data subject rights: (i) the right to access personal data; (ii) the right to object to processing carried out for commercial advertising purposes; (iii) the right not to be subject to automated decision-making in certain circumstances; and (iv) the right to corrections, blocking, and erasure of personal data.[51] Similar to other countries, FIs in Tanzania must obtain consent, ensure personal data are lawfully collected for a legitimate purpose, and secure data against unauthorized processing.[52]*

43 NITDA, 2019: https://nitda.gov.ng/wp-content/uploads/2020/11/NigeriaDataProtectionRegulation11.pdf

44 Baker McKenzie, 2021, Africa Data Security and Privacy Guide: https://www.bakermckenzie.com/-/media/files/insight/guides/2022/africa-data-privacy.pdf?hash=28FB5D9D701F5E4592625750A6F79A32&sc_lang=en

45 DataGuidance, 2022, Nigeria: Data Protection in the Financial Sector.

46 South African Government, 2013, Protection of Personal Information Act 4 of 2013: https://www.gov.za/documents/protection-personal-information-act

47 https://www.gov.za/sites/default/files/gcis_document/201409/3706726-11act4of2013protectionofpersonalinforcorrect.pdf

48 Africa Data Security and Privacy Guide (Baker McKenzie, 2021): https://www.bakermckenzie.com/-/media/files/insight/guides/2022/africa-data-privacy.pdf?hash=28FB5D9D701F5E4592625750A6F79A32&sc_lang=en

49 Baker McKenzie, 2021, Key Data Privacy and Cybersecurity Laws.

50 The United Republic of Tanzania, 2022, The Personal Data Protection Act: https://www.pdpc.go.tz/media/media/THE_PERSONAL_DATA_PROTECTION_ACT.pdf

51 Lexology, 2023, Recent developments in African data protection laws – Outlook for 2023: https://www.lexology.com/library/detail.aspx?g=baef72ee-10bd-4eb9-a614-a990c236bb45

52 DataGuidance, 2024, Tanzania - Data Protection Overview: https://www.dataguidance.com/notes/tanzania-data-protection-overview

Subsequently, in March 2022, The Central Bank of Kenya announced the publication, by Legal Notice No. 46 of March 18, 2022, of Digital Credit Providers Regulations. These regulations provide for the licensing and oversight of previously unregulated digital-credit providers, and they seek to address concerns about predatory practices, particularly excessive cost, unethical debt collection practices, and the abuse of personal information. The regulations also provide for consumer protection, credit information sharing, and outline the Anti-Money Laundering and Combating the Financing of Terrorism (AML/CFT) obligations of digital credit providers.[53]

## *Partnerships to Support Digital MSME Banking*

Partnerships with external organizations can offer FSPs the opportunity to expand their outreach and grow their MSME portfolios by accessing a broader range of segments. External partnerships, such as with MNOs and e-market platforms, are particularly useful as sources for data and information that can help gain increased insights into the target MSME segment's needs and characteristics. Partnerships enable synergies between institutions, enhancing product performance, transaction patterns, and customer characteristics. Partners can collaborate on a value proposition that positions a previously unavailable product or service as suitable and worth considering for a particular segment of the population.

For partnerships to work, there needs to be a clear win-win business case for all parties involved, with clear agreements on customer data ownership, revenue distribution, and cost sharing. Forming effective partnerships also requires consideration of the relevant regulations and legal frameworks which govern access to client data as these can pose reputational and regulatory risk. At the minimum, FSPs should consider the following checklist to mitigate this type of risk and ensure synergy:

**Conduct internal and external due diligence.** Is there alignment between both parties in terms of vision, values, and broad goals? Is the fintech ready to make a long-term commitment to the bank and its customers? What is their knowledge of compliance obligations to country and regional regulations? Do they have the risk capabilities required? Is the bank adequately positioned to deal with a new partnership?

**Decide who owns the relationship.** What is the role of each party? What are the parameters around internal accountabilities and reporting lines? Does the ownership determine revenue share and cost contributions?

**Set the ground rules.** How should risk be shared? What are the framework and protocols within which the partnership will operate? What is the split in revenue and costs, and what factors will determine this split?

**Monitor the relationship closely.** What is the appropriate monitoring approach? What are the key risks in the partnership and how should these be assessed and monitored on an ongoing basis?

**Ensure risk management is robust.** What risk management processes should be in place to ensure that the outcomes of the partnership are in alignment with existing compliance and regulatory requirements?[54]

Successful partnerships require strategic alignment between the partners. All parties must identify, agree to, and work toward mutually beneficial objectives for a partnership to function effectively and achieve the stated goals. Insights from interviews and research for this handbook indicate that effective partnerships are created by FSPs that have clearly outlined a strategy and objectives when exploring partnership opportunities and selecting partners. Successful partnerships should ensure that there is clarity around:

> What each partner brings to the table in terms of organizational capabilities, and how these capabilities are deployed to serve MSMEs and grow each partner's business.

> Client ownership and customer management responsibility—who owns the MSME client portfolio and manages specific aspects of the client relationship?

> Ownership and use of client data, both existing and generated by the partnership activities.

> The products and services to be offered, and each partner's role in the service delivery process.

> Resources to be contributed by each partner—financial, technological, and human.

> The model outlining cost and revenue sharing, especially as the partnership grows and is scaled up.

> Responsibilities for regulatory compliance and reporting by each partner, especially with the new legal frameworks governing use of individual data.

Successful partnerships leverage the strengths of each partner to deliver innovative products for the MSME segment, as exemplified in the case study of Orange Bank Africa and telco partner Orange Money.

[53] Central Bank of Kenya Press Release 2119450187, 2022, Publication of Regulations for Digital Credit Providers and Commencement of their Supervision.

[54] Plante Moran, 2020, Fintech partnership risk: A checklist for financial institutions: https://www.plantemoran.com/explore-our-thinking/insight/2020/05/fintech-partnership-risk-a-checklist-for-financial-institutions

**CASE STUDY**

# *Orange Bank Africa and Orange Money, Côte d'Ivoire – a Partnership for Digital Micro Credit*

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MNOs have played a central part in driving financial inclusion in Africa by extending access to mobile money wallets to millions of people. Partnerships between traditional FSPs and MNOs can offer diversified financial services to customers, adding new revenue streams, and strengthening customer loyalty for both partners in competitive markets.

In Côte d'Ivoire, Orange Bank Africa (OBA), a fully licensed, digital-only bank, jointly created in 2020 by the Orange and NSIA groups, partnered with Orange Money (OM), a mobile money operator. OBA provides loans and savings products to financially underserved individuals and micro, small, and medium entrepreneurs, particularly in the creative industries value chain. The market for MSME loans is estimated to be worth upwards of $2.4 billion in Côte d'Ivoire.

Between 2020 and 2023, OBA distributed over 2.4 million digital microcredits ("Tik Tak" loans) and banked over one million OM customers. This was facilitated by a seamless, simple, and end-to-end digital customer journey: registration and all transactions with the bank are carried out via the OM wallet, and loan repayments are made through OM agents into OM wallets, and then to the customer's OBA bank account. The credit-scoring model is based on machine learning, drawing on OM and Orange telecom data with customers' consent. The loan decision is made in an average of 10 seconds, without the need for collateral.

Across Africa, successful implementations of MNO-bank partnerships are challenged by the complexity of balancing competencies, responsibilities, and risk appetites. IFC's experience in supporting such partnerships across the continent shows that MNOs and FSPs looking to build successful partnerships benefit from the following considerations:

*Risk/profit proportional commercial model, keeping a healthy balance between risk- and profit-sharing.*

*Each party to focus on their core business, while leaning into their competencies.*

*Agreements on who owns the customer, consumer protection (such as data privacy), and responsible finance.*

*Well-defined roles and responsibilities embedded in the partnership contract.*

# 3

# Understanding the *New* MSME Market

*The needs of MSME banking clients are evolving, shaped by the changing demands of their customers, competitive pressures, infrastructure, regulation, and the local and international business environment. Developing a customer-centric business model and strategy to serve MSMEs first requires an understanding of the segment characteristics, behaviors, and business and banking needs.*

*This chapter focuses on providing insights into how MSMEs have changed with digitalization, and how FIs can leverage technology and data to better understand MSME customers. Historically, FSPs have rarely gone beyond basic estimates of revenue and number of employees to classify MSME clients. With the increasing availability of a range of data, FIs can gain a much more granular understanding of MSME segments for tailored solutions.*

## *MSMEs in Africa*

Though MSMEs differ across markets and industries, the majority in Africa tend to be micro businesses operating informally. These are not captured in the often-cited overall estimate of 44 million formal small and medium enterprises on the continent.[55] IFC research shows that while there are about 1.24 million formal MSMEs in Nigeria, a majority of which are small and medium enterprises, there are a further 38.4 million informal businesses, of which over 96 percent are micro businesses. In Uganda, the MSME sector is also dominated by micro entrepreneurs (94%), and the MSME sector as a whole is largely informal (70%).[56] Even in South Africa, IFC estimates that only 14 percent of the MSME sector is formalized.[57]

While there are similarities across markets, there are also local nuances. In Tanzania, for example, the majority of MSMEs are microenterprises owned by men, have been operating between two and 10 years, and are highly concentrated in the manufacturing, wholesale, and retail trade sectors.[58] In Nigeria, most MSMEs are growing rapidly, have been in business for more than five years, and are engaged in agriculture, wholesale and retail trades, other services, or manufacturing.[59]

## MSME Market Size and Target Share

In developing the business case for an MSME offering, FIs should consider the overall size of the MSME market, the share of the market to be targeted, and which sub-segments to target. The size of the market is often measured in terms of both the revenue generated by the MSMEs' business activities, as well as the number of MSMEs. The microenterprises that make up the largest segment of African MSMEs are mainly sole proprietorships with less than ten employees and annual sales of less than $100,000.[60]

While informal microenterprises represent the majority of MSMEs, the segment's total revenue is significantly lower than that of small and medium enterprises, as shown in Table 3.1 on page 52. As a result, FSPs have historically developed their MSME strategies around medium enterprises with higher revenue share.[61] However, such strategies can result in FSPs missing a sizeable market opportunity. In Nigeria, for example, IFC estimates that the highest demand for credit is in sectors such as agriculture and retail trade, which are often populated by informal microenterprises.[62] With digitalization, such market segments are becoming increasingly viable to serve.

[55] SME Finance Forum, Small and Medium Enterprises (SMEs) Finance: https://www.worldbank.org/en/topic/smefinance

[56] IFC, 2022, Market Bite Nigeria: https://www.ifc.org/en/insights-reports/2022/market-bite-nigeria-innovation-offers-key-to-the-broader-msme-finance-market, and IFC, 2021, Market Bite Uganda: https://www.ifc.org/en/insights-reports/2021/ifc-market-bite-uganda-challenges-and-opportunities-for-msme-finance-in-the-time-of-covid-19

[57] IFC, 2020, The MSME Voice: Growing South Africa's Small Business Sector: https://www.ifc.org/en/insights-reports/2020/202002-south-africa-msme-voice

[58] IFC, Financing Micro Small and Medium Enterprises (MSMEs) in Tanzania Market Study, authored by A2F Consulting, February 2020. Unpublished.

[59] IFC, 2022, Market Bite Nigeria: https://www.ifc.org/en/insights-reports/2022/market-bite-nigeria-innovation-offers-key-to-the-broader-msme-finance-market

[60] CGAP, 2022; IFC, 2021, 2022, Market Bites, Ibid.

[61] Accion, 2023, Estimates from field observations.

[62] IFC, 2022, Market Bite Nigeria: https://www.ifc.org/en/insights-reports/2022/market-bite-nigeria-innovation-offers-key-to-the-broader-msme-finance-market

| Segments | Microenterprise | Small Enterprise | Medium Enterprise |
|---|---|---|---|
| Market share in numbers[63] | 80-95% | 5-15% | 3-5% |
| Market share in revenue[64] | 10-20% | 20-40% | 50-70% |

*Table 3.1. Estimated Ranges of MSME Market Share Distribution per Segment in Africa*

## Defining MSMEs for a Given Market

To acquire a better understanding of MSMEs and their characteristics, it is important that they are clearly defined for a given market. Note that definitions vary across countries and regions, and that different actors in a market often use different definitions. Most MSME definitions use a combination of two or more of the following parameters: (i) number of employees; (ii) annual sales turnover; (iii) investment capital; and (iv) value of business assets. These definitions are primarily driven by the banking environment and the size and state of development of the country or region. Table 3.2 shows some examples of definitions.

When defining MSMEs for a particular market or strategy, it may be helpful to consider IFC's definition, as well as national definitions, as basic starting points. To be classified as an MSME by IFC's definition,[68] firms must meet two of three maximum requirements for employees, assets, or annual sales, as shown in Table 3.3. Additionally, for client reporting purposes, IFC's Financial Institutions Group also uses loan size as a proxy when firm size variables are nonexistent. Unless otherwise stated, this handbook uses the IFC MSME classification in Table 3.3.

After MSMEs are defined, further segmentation is needed to help understand the specific needs and behaviors arising from the diverse and varied nature of MSME businesses: size, sophistication, and industry sector that result in differences in both banking needs and how the MSMEs engage with FSPs. Segmentation is the classification of groups of businesses into sub-segments, based on common behavior patterns or specific characteristics of the business.

### *MSME Segmentation*

Customer segmentation is a crucial aspect of becoming a customer-centric organization, allowing a financial institution to identify profitable segments and better understand customer needs, and to offer relevant products, services, and enhanced customer experiences. A deeper understanding of the businesses, the owners, and their needs and preferences is required for developing a comprehensive MSME strategy and business case. In turn, this helps in (i) personalizing and optimizing financial services and products to improve customer acquisition and retention, (ii) designing appropriate channels, marketing, and sales initiatives, and (iii) managing the different risks that these segments present.[69] With increased access to a varied range of data and data analytics tools through digitalization, MSME segmentation can now be more refined and purpose-driven than before.

[63] CGAP, 2022, https://www.cgap.org/sites/default/files/publications/2022_07_FocusNote_MSE_NoSmallBusiness.pdf; IFC, 2021, 2022, Market Bites.

[64] Accion, 2023, Estimates from field observations.

[65] IFC, 2021, 2022, Market Bites, Uganda, Nigeria; Banking Association South Africa data. IFC, Financing Micro Small and Medium Enterprises (MSMEs) in Tanzania Market Study, authored by A2F Consulting, February 2020. Unpublished.

[66] USD equivalents (Dec. 2024) approximately $5,600 (Micro), $279,000 (Small), and $559,000 (Medium).

[67] USD equivalents (Dec. 2024) approximately $11,200 (Micro), $1.8 million (Small), and $3.6 million (Medium).

[68] IFC, n.d., IFC's Definitions of Targeted Sectors: https://www.ifc.org/en/what-we-do/sector-expertise/financial-institutions/definitions-of-targeted-sectors

[69] CGAP, 2022, No Small Business: A Segmented Approach to Better Finance for Micro and Small Enterprises: https://www.cgap.org/research/publication/no-small-business-segmented-approach-to-better-finance-for-micro-and-small

| Country | Indicator | Micro | Small | Medium |
|---|---|---|---|---|
| **UGANDA** | Annual turnover ($) | < 3,000 | 3,000 – 27,000 | 27,000 – 97,000 |
| | No. of employees | 1 – 4 | 5 – 49 | 50 – 99 |
| **NIGERIA** | Assets value ($) | < 12,000 | 12,000 – 243,000 | 245,000 – 1.2 million |
| | Annual turnover ($) | =< 49,000 | =< 243,000 | =< 1.2 million |
| | No. of employees | < 10 | 10 – 49 | 50 – 199 |
| **SOUTH AFRICA (Wholesale/ Retail Trade)** | Assets value[66] (South African rand [ZAR]) | 0.1 million | 5 million | 10 million |
| | Annual turnover[67] (ZAR) | 0.2 million | 32 million | 64 million |
| | No. of employees | 5 | 50 | 200 |
| **TANZANIA** | Capital investment ($) | up to ~2,000 | ~2,000 – 90,000 | ~90,000 – 350,000 |
| | No of employees | 1 – 4 | 5 – 49 | 50 – 99 |

*Table 3.2. MSME Definitions in Uganda, Nigeria, South Africa, and Tanzania*[65]

| Segments | Micro | Small | Medium |
|---|---|---|---|
| **Indicator** | | | |
| No. of employees | Less than 10 | 10 – 49 | 50 – 300 |
| Total assets, range ($) | < 100,000 | 100,000 to < 3 million | 3 million to < 15 million |
| Annual sales, range ($) | < 100,000 | 100,000 to < 3 million | 3 million to < 15 million |
| Loan size proxy, range ($) | < 10,000 | 10,000 to < 100,000 | 100,000 to 1 or 2 million |

*Table 3.3. IFC's Global Definition of Micro, Small, and Medium Enterprises*

Before embarking on segmentation, it is important to remember the following:[70]

› The criteria on which the segmentation is based are actionable, in that they can be used to define attractive and well-differentiated offerings.

› Classification is easy with currently available data—a client segment membership can be identified with data available in the bank's system, as well as data from public sources and research reports. For instance, running a new complex survey and obtaining segments that cannot be effectively integrated into day-to-day banking operations would not be useful.

› Where available, a combination of data points from multiple dimensions, such as client value, product usage, digital or financial sophistication, and industry sector of the client, can be used. This approach helps identify and group sub-clusters within the broader MSME segment and develop a more relevant product offering.

› The segmentation criteria highlight strong value elements, identifying clusters of both very valuable clients and low-value ones so that the high-value clients are given priority.

› The segments are used extensively across the operations of the FSP, not only for reporting purposes but also to develop specific segment offerings and to differentiate services, service levels, and communications. Restricting use to limited areas will significantly reduce the benefits of segmentation.

› The segmentation has a foundation based on statistical methods such as clustering, using information from surveys and focus groups. The surveys are large scale (typically with more than 500 respondents) and their results, due to the high number of responses, can be used to reliably quantify economic opportunities. For instance, a survey can support estimating the number of MSMEs, their total turnover, and the economic potential of a segment.

## The Role of Data in Segmentation

FIs can now mine, analyze, and manage multiple data points to gain better insights into MSME segments and build relevant value propositions and solutions. In the case of MSMEs, given the generally limited financial records available, data from institutional and external sources play a critical role in understanding the sub-groups, their needs, and behaviors.

Segmentation strategies that make use of multiple sources of data are most successful in accurately describing customer groups. Thus, the process to develop customer segmentation must incorporate this approach, as it allows service providers to segment exactly by the variables that play a role in driving use and uptake. Table 3.4 outlines the various sources and reliability of data available to FIs that can be used for segmentation of MSME clients:[71]

[70] IFC, 2012, Customer Management in SME Banking – A Best-in-Class Guide: https://documents1.worldbank.org/curated/en/571071468328218299/pdf/948320WP00Box30Practice0Guide0Final.pdf

[71] CGAP, 2019, Data-driven segmentation in financial inclusion – Technical Guide: https://www.cgap.org/sites/default/files/publications/2019_07_Technical_Guide_Data_Driven_Segmentation_0.pdf

| Type of data | Reliability | |
|---|---|---|
| Transactional | High | These data refer to financial transactions by existing borrowing and non-borrowing clients stored on the systems of the FSP. This valuable source of data on MSME clients can help determine their cashflows and financial behaviors. If stored consistently, transactional data (e.g., account deposits and withdrawals, loan payments, bill payments) are usually very reliable. This type of data presents a historic and objective record of a customer's actual behavior or economic activity. |
| Documentary | High | Identity and basic demographic data are often taken from (or verified by copies of) official documents (e.g., national ID cards). |
| Collected from devices | High | Device information (e.g., mobile banking applications that provide access to handset information such as call detail records and Global System for Mobile Communication (GSM) calls or SMS texts) is now an important alternative source of information on MSMEs and can be used to analyze behavior. Device data can be as reliable as financial transaction data. For services providers other than MNOs, this may require establishing partnerships. |
| Psychometric | Above average | Requires additional survey-based research to collect data, through digital applications. There are different techniques in psychometric tests to validate candidates' answers (e.g., using slightly similar questions in different sections of the test). With limited credit history available on unbanked MSMEs, this type of data can be useful in assessing potential credit and business behavior of MSME owners. However, the data gathered can be sensitive to the quality of the tests and how they are administered. |
| Collected by staff | Average | These data are from client-facing staff, gathered through client engagements as part of routine activities or through ad hoc campaigns. The data may, however, be influenced by the judgment, work style, or experience of the person collecting it. |
| Self-reported | Below average | Data reported by a customer (e.g., on an application or survey) can be less accurate because people have different styles of sharing information. Customers may tailor responses for different purposes. |

*Table 3.4. Data Sources for MSME Segmentation*

## CGAP's toolkit for MSME Customer Segmentation

The CGAP Customer Segmentation Toolkit[72,73] provides a comprehensive step-by-step process for segmenting MSMEs, involving up to eleven steps, some of which may be skipped, depending on whether a comprehensive or simpler segmentation is required (Figure 3.1).[74]

The following critical aspects should be borne in mind when embarking on the segmentation process:

- Segmentation is not necessarily a linear process, with each step following in order. In most cases, some previous steps may need to be revisited to validate assumptions.
- The process involves multiple functions and stakeholders in the organization, and it is important that all relevant functions/roles are engaged in the process.
- Segmentation is an ongoing exercise; institutions need to continuously refine data collection and review their segmentation hypotheses, tracking, and measuring performance of existing segments to enhance MSME customer understanding and value creation.


*Figure 3.1. CGAP's Customer Segmentation Process*

[72] CGAP, 2016, Customer Segmentation Toolkit: https://www.cgap.org/research/publication/customer-segmentation-toolkit

[73] CGAP, 2019, Data-Driven Segmentation in Financial Inclusion: https://www.cgap.org/research/publication/data-driven-segmentation-in-financial-inclusion

[74] CGAP, Customer Segmentation Worksheet: https://www.cgap.org/research/publication/customer-segmentation-toolkit

While the detailed toolkit material can be accessed on the CGAP website, a brief overview of each step in the process (see Figure 3.1) is provided:

**Define your objective.** Determine the business objectives to be achieved for the MSME segment and the challenges to be addressed with the segmentation exercise. To arrive at this goal, the FSP should answer several framing questions such as:

Should the exercise focus on answering strategic or tactical questions?

What assumptions have been made about the MSMEs, especially their behaviors and needs?

What are the challenges and opportunities to be addressed in serving the MSMEs by the segmentation exercise?

**Pick your population.** Based on the business goal, select the MSME market to analyze, including both current and potential customers. Which customer segments should be a focus—specific groups or a wider population?

**Brainstorm.** To ensure experiences and input from relevant stakeholders are considered, involve the right people from across the organization and conduct brainstorming sessions. These can be around the following topics:

Review of segmentation variables based on relevant MSME characteristics.

A day in the life of your MSME customer—for example, their personal and business activities, preferences, use of banking products and services.

Mapping out the customer buying process—how do the MSMEs identify which financial product meets their needs, and how is the product acquired and used to meet these needs?

Developing digital maturity profiles of the targeted MSME segments, covering the use of digital banking, digital tools for business, and levels of digital literacy.

**Informal qualitative research.** Once a basic hypothesis is formed, it is good practice to test the concepts via informal qualitative research. This can either be done through the field force at meetings with select groups of MSMEs, or through mystery shopping campaigns.

**Dig into existing data.** Enhanced availability and access to multiple types of data through alternative sources has had the most significant impact on the FSPs' ability to understand the MSME segment. In this step, the institution must gather data to build and support its segmentation analysis, starting with a review of the data available on the MSME segments, internally and externally.

**Develop hypothesis.** The research can then be used to build a hypothesis for meaningful MSME segmentation. For example, segmentation could be based on use cases, customer behavior, or values drivers. This step may require several iterations of additional qualitative and quantitative research, including formal market research, to collect more information, test, and refine the segmentation hypothesis before finalization and dissemination within the organization.

**Conduct additional research.** In the case that detailed market research on MSMEs has not been conducted previously, and there is limited public research available, the institution can undertake additional research if resources are available.

**Refine and finalize segmentation.** At this step, key inputs for segmentation are in place and can be now used to analyze and develop a strong segmentation hypothesis on sub-groups within the overall MSME segment.

**Showcase results.** Share segmentation results with stakeholders across the organization for buy-in. During this step, it can be helpful to develop persona profiles for each segment to personalize the presentation within the bank and facilitate understanding of the segments and their characteristics.

**Apply findings.** Identify and prioritize which MSME customer group to serve based on the potential value proposition to the customer and its contribution to the provider's profitability.

**Track and measure.** Finally, apply the segmentation findings in revising the MSME segments' customer journeys and value propositions. During this step, new market opportunities may emerge from the analysis that require the development of new products or services. In other cases, the analysis can be used to adjust existing products and services as well as channels and communications.

The segmentation process can be used to create clusters or further sub-segments of MSMEs with similar characteristics, across multiple variables. The framework presented in Table 3. 5 illustrates how different types of segmentation can be developed for MSMEs, based on the strategy and business objectives.

| Type of Segmentation | Examples | Data Needs | Advantages | Disadvantages | When to use |
|---|---|---|---|---|---|
| **Demographic**  | • Urban vs. rural<br>• Women-owned vs. male-owned<br>• Business size/ assets<br>• Technology ownership<br>• Wallet size<br>• Literacy/skills | • Registration<br>• KYC information | • Simple<br>• Easy to target.<br>• Data often readily available | • Does not predict segment behavior<br>• May lack uniformity within the group | Best for simple targeting. Very helpful to combine with other variables |
| **Behavioral**  | • Product type usage—loans, transactions<br>• Transaction behaviors<br>• Technology usage | • Banking relationship profile<br>• Transactional database | • Strong insight into current segment behavior<br>• Does not predict future behavior | • Data can be difficult to find.<br>• Groups could have overlaps | Use when trying to understand customer preferences. Best when combined with attitudinal variables |
| **Attitudinal**  | • Growth oriented<br>• Desire to learn and adopt new business practices<br>• Technology adopter | • Primary research<br>• Long-term historic transactional database | • Identifies underlying drivers<br>• Provides insights for marketing | • Data can be difficult to find<br>• May not predict behavior | Use when trying to understand rationale for behaviors. Very powerful for communication. Best when combined with behavioral variables |

*Table 3. 5. Data Usage for Type of Segmentation*[75]

[75] Adapted from CGAP, Customer segmentation toolkit, https://www.cgap.org/sites/default/files/researches/documents/Customer-Segmentation-Toolkit.pdf; and IFC and The MasterCard Foundation, 2017, Data Analytics and Digital Financial Services Handbook: https://www.ifc.org/en/insights-reports/2017/dfs-data-analytics

The completed segmentation serves as the basis for a targeted MSME strategy. Understanding segment economics and identifying the best customers is key in effective segmentation. To ensure effective use of segmentation, FIs need to:[76]

**Estimate both current and potential value of the segments.** This starts with determining the size of the segment, i.e., the number of enterprises that comprise the segment, and is followed by calculating the current value using existing product holdings. Potential value is estimated by defining a target product portfolio based on the analysis of needs at the segment level.

**Determine priority target segments.** FIs may be able to serve some segments of the MSME sector more profitably than others, based on the nature of the opportunity, the competitive landscape, and their own strengths and weaknesses. Analysis of the current mix of clients can also help decide which segments to serve.

**Understand banking needs of the segment.** MSMEs have diverse needs, depending on their size, sector, financial sophistication, digitalization, and maturity. To develop the right product offering, FIs need to clearly understand the banking needs of the target segment. When assessing the needs, it is critical to think beyond lending-only options and consider the wide range of financial and nonfinancial services that could be relevant to the segment.

**Allocate operating costs to each segment.** This requires a clear understanding of the costs generated by each product and service, and a clear activity-based costing framework in place to estimate the different costs in order to provide different levels of service. This knowledge is the foundation of effective service models, allowing clients to receive maximum satisfaction while the FSP achieves maximum profitability for each product offered.

**Allocate risk and capital costs.** Risk costs should be calculated for each segment based on the product mix and customer risk profiles; economic capital is also factored into the value equation. The in-depth understanding gained from this analysis helps prioritize customer segments, allowing tailor-made products to be offered that align with their specific value.

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[76] Customer Management in SME Banking A Best-in-Class Guide, IFC, 2012, https://documents.worldbank.org/en/publication/documents-reports/documentdetail/571071468328218299/customer-management-in-sme-banking-a-best-in-class-guide

**CASE STUDY**

# *Aye Finance, India – Cluster-based Segmentation*

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Aye Finance is a nonbanking financial company in India that provides business loans to microenterprises. The company was founded in 2014 with the aim of improving financial inclusion and providing access to credit for grassroots businesses in manufacturing, retail, and agribusiness. Aye Finance specializes in lending to MSMEs that typically struggle to obtain financing from traditional banks due to their lack of formal documentation, credit history, or collateral. The company uses a targeted segmentation model based on proprietary data, innovative credit assessment methods, and technology-driven processes to evaluate the creditworthiness of such businesses and provide them with customized loan products.

Aye's network spans 400 branches across 21 states in India, with more than 6,500 employees who serve over 400,000 MSME clients. The company offers a range of loan products including working capital loans, term loans, and asset loans. Besides this, the company also provides nonfinancial support to MSMEs in product development, market development, skilling, and capacity building through its not-for-profit Foundation for Advancement of Micro Enterprises.[77]

Aye Finance uses a cluster-based segmentation approach to develop and refine its MSME lending products. It selects a set of customers in each sector within a certain location and conducts a detailed study on them for a period. The aim of this approach is to develop a deep understanding of the sector, the market, and the cluster to profile customers and set up a heuristic underwriting model. The company started its cluster approach with 50–100 potential customers in several cities using field surveys, observing customer patterns, and speaking with buyers and suppliers. This enabled the company to create personas of the customers and profiles of business profit margins, skillset, and income patterns.

Aye builds an initial expert assessment for the cluster using a combination of customer KYC data, demographic information, and self-reported data such as income and expenses, and over 500 additional data points gathered through stakeholder interviews, industry analysis, and market research. Starting with a small cohort, Aye starts to offer credit products to customers in the cluster, refining the expert assessment as more data become available on individual customers. For instance, Aye discovered through its clustering analysis that the key predictors of risk and uptake for grocery stores were the size of the store, type of inventory sold, and the density of inventory. Aye refined its assessment methodology over time to focus on these statistically significant parameters, making assessment and underwriting of the store easier; this enabled Aye to rapidly increase a store's loan limit and value proposition.

Aye has been able to apply this methodology across over 180 clusters or segments, including woodworking, eateries, jewelry shops, tailoring, and pottery businesses, among others. As of early 2024, Aye had been able to disburse over 100 billion Indian rupees ($1.2 billion) to more than 800,000 customers.

[77] https://advancemsme.org/

# *Box 2.*
# *Francis the Farmer: Sample Customer Profile Based on Multiple Variables*

*By analyzing the information and data gathered against relevant indicators, institutions can better define customer segments and build specific profiles, such as Francis the Farmer profile below*[78]

| **Profiles** | ***Francis the Farmer*** |
|---|---|
| **Industry** | *Agriculture* |
| **Sociodemographic**<br>*(age, gender, geography, education level, marital status)* | *Male*<br>*30-45 years*<br>*Married with family*<br>*Rural area*<br>*Basic education* |
| **Business type**<br>*(industry, age of business, no. of employees, annual revenue, monthly costs)* | *Monthly income >$5,000*<br>*Agricultural land*<br>*10 years of operation*<br>*2–4 daily wage laborers*<br>*Has land ownership proof* |
| **Behavioral**<br>*Tech literacy (phone, internet, social media usage)*<br>*Financial literacy (minimal knowledge, basic awareness, actively managing)*<br>*Savings habits (savings account, basic access, active usage)* | *Low-medium technology literacy*<br>*Basic financial literacy*<br>*Basic savings account* |
| **Attitudinal**<br>*(emotional state, external reliance, empowerment)* | *Pressure from market*<br>*Optimistic about future (would like to diversify into dairy)* |
| **Top three priorities/needs**<br>*What does the customer gain by engaging with the FSP? (e.g., easy access, competitive rates, flexible payment schedule)* | *Flexible repayment plan*<br>*Crop insurance*<br>*Access to training programs on farming best practices* |

[78] Accion, 2018, Customer Acquisition Toolkit for Service Providers: https://www.accion.org/wp-content/uploads/2018/09/Customer-Acquisition-Module-Workbook.pdf


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## Understanding the MSME Segment's Digital Maturity

Critical to the success of digitalized SME finance is the digitalization of MSME clients. Although MSMEs are becoming increasingly digitalized, not all of them have the same needs or practices in technology usage. Therefore, when segmenting the MSME market, it is important to understand the target MSME clients' level of digital maturity, essential for ensuring a segment-relevant value proposition and the adoption of products and services.

With regard to financial transactions, customer confidence in digital channels depends on multiple factors, including channel type, transaction value, perceived risks associated with the transaction, and trust in the institution's infrastructure. This requires FSPs to look beyond usage data, focusing on the capabilities and enablers that influence MSME customers to use digital channels. These indicators may be more difficult to measure but are more meaningful predictors of digital uptake.

The Digital Maturity Framework developed by Accion can be used to assess the digital capabilities of MSME segments and enhance customer segment profiles. The framework looks at four key drivers of digital maturity, encompassing seven endogenous ("capabilities") and seven exogenous ("enablers") (Figure 3.2).[79]

An FSP can use a combination of field survey and internal system data on channel interactions and transactions by the targeted MSME client segment to understand the extent of technology adoption and use. The framework can be used to group MSMEs into four different categories of digital maturity: nascent, experimenter, emerger, and enabled. Each category is based on their level of access to, usage of, and perceptions toward digital tools (mobile phones, laptops, tablets) and digital financial services. Figure 3.3 (page 64) defines each digital maturity category against a total of fourteen criteria that comprise the four key drivers of digital maturity, creating archetypes of the digital MSME customer.[80]

By considering customers' digital maturity along with other relevant segmentation indicators, FSPs can better predict their propensity to use digital products and tools and increase their uptake. For example, studies show that customers who use technology frequently (multiple times per day) are twice as confident in their ability to do things online and are more willing to try new digital tools.[81]

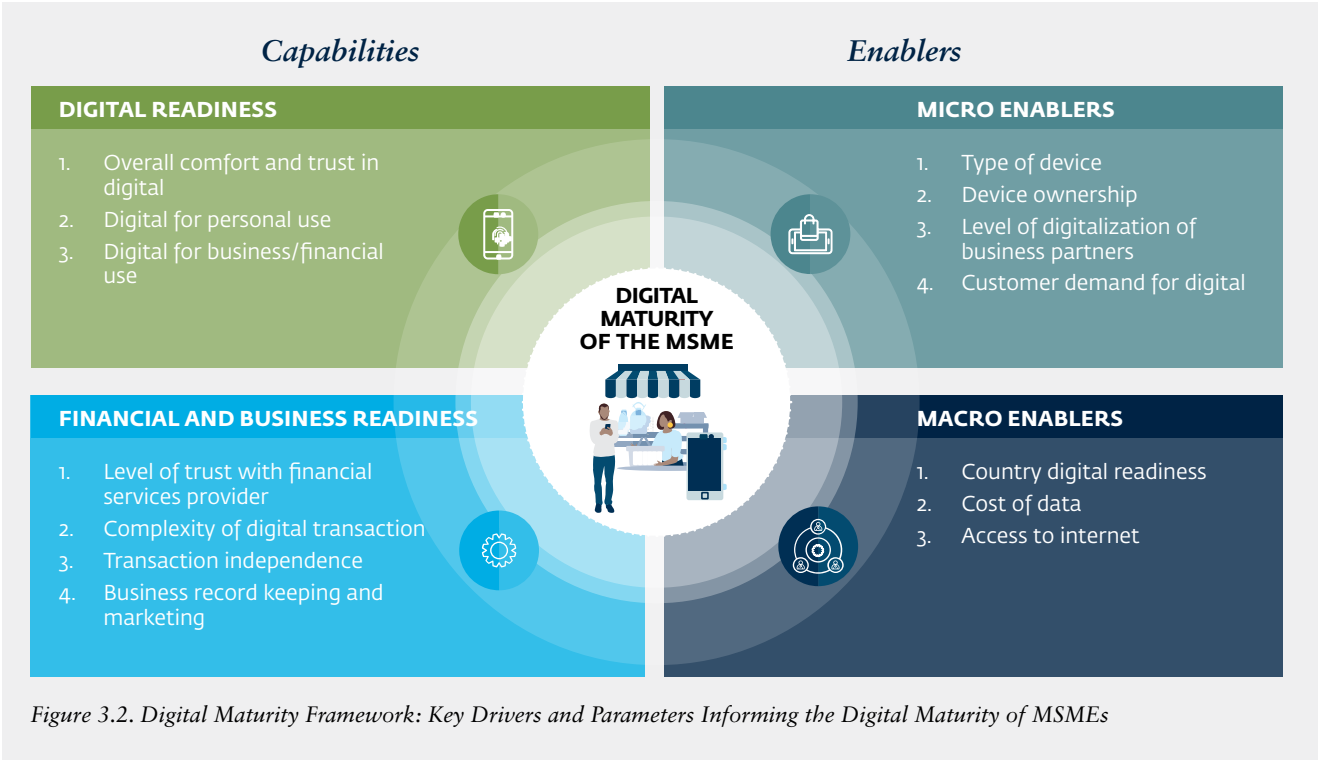


*Figure 3.2. Digital Maturity Framework: Key Drivers and Parameters Informing the Digital Maturity of MSMEs*

[79] Accion, October 2020, The Micro, Small, and Medium Enterprise (MSME) Digital Maturity Assessment: https://www.accion.org/msme-digital-maturity-assessment

[80] Ibid.

[81] Ibid.

## *MSME Digital Maturity Framework*

| DIGITAL READINESS | Nascent | Experimenting | Emerging | Enabled |
|---|---|---|---|---|
| 1. Overall comfort and trust in digital | Low confidence/ trust in digital tools | Some confidence/ trust in digital tools for certain purposes | High level of confidence with digital tools for certain purposes | High level of confidence with digital tools and willingness to try new solutions |
| 2. Digital for personal use | Not currently using; may have plans to use in the future | Current usage includes social media only | Current usage includes social media and other simple apps | Demonstrated ability to use a variety of digital tools confidently |
| 3. Digital for business/financial use | No current use but may be willingness to use in the future | May be using simple digital tools with confidence; use is ad hoc | Uses some complex digital tools | Confidence in the use of multiple tools for different business purposes |
| **FINANCIAL AND BUSINESS READINESS** | | | | |
| 1. Level of trust with financial service provider | Low | | | High |
| 2. Complexity of digital transactions | None; all transactions happen face-to-face | Simple information transactions only (push notifications enabled) | Complex informational transactions (push/ pull) and simple financial transactions | Complex informational transactions (push/ pull) and complex financial transactions |
| 3. Transaction independence | Human touch required for all types of transactions | Willingness to engage in an assisted model | Assisted for complex transactions, self-service for simple transactions | Self-service for all transactions |
| 4. Business record keeping and marketing | Mental accounting, no digital marketing | Paper-based record keeping, no digital marketing | Mix of paper-based and some digital record-keeping; marketing through Facebook, WhatsApp | Fully digital record-keeping; marketing through Facebook, WhatsApp |

MSME Capabilities

| MICRO ENABLERS | | | | |
|---|---|---|---|---|
| 1. Type of device | Feature phone | Feature phone or basic smartphone | Smartphone and one or more additional devices (laptop, etc.) | |
| 2. Device ownership | Shared | | Personal | |
| 3. Level of digitalization of business partners | Low | Low/Medium | Medium | High |
| 4. Customer demand for digital | Low | Low/Medium | Medium | High |
| **MACRO ENABLERS** | | | | |
| 1. Country digital readiness | Low | Medium | | High |
| 2. Cost of data | Low | | High | |
| 3. Mobile connectivity | Low | Medium | | High |

Enablers

*Figure 3.3. Digital Maturity Framework: Digital Customer Archetypes*

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**CASE STUDY**

# *AMfB, Nigeria - Applying Digital Maturity Assessment to Sharpen Product Sales*

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Accion Microfinance Bank (AMfB) in Nigeria used Accion's Digital Maturity Framework to align its digital channels with the digital capabilities, adoption of digital technology, and use of digital channels by the targeted MSME segment to increase adoption and use of digital products and services.

AMfB primarily serves microbusinesses operating in the trade (wholesale and retail) and services sectors. In addition to its 80 branches and over 2,500 agents, the institution's main channels include a contact center, mobile app, online banking platform, and Unstructured Supplementary Service Data (USSD) codes that enable certain self-serve functions through a mobile device, such as checking an account balance or requesting a loan.[82] AMfB aims to normalize digital operations within the institution and grow digital channel use among its customers, ultimately working toward providing an omnichannel experience.

As part of this effort, the institution worked on a program with Accion to digitally reimagine and scale "SaveBrighta," its flagship savings product, and develop "BrightaLoan," a new end-to-end digital credit product envisioned to be more efficient and scalable than the bank's traditional credit products. SaveBrighta was initially a traditional entry-level product with basic savings features and accounts opened manually in branches. The institution conducted market and customer research, tested concepts, and collected and evaluated feedback. The new BrightaLoan now features instant account opening by USSD, by mobile app or AMfB's website, or by account officers using digital field applications. It also features a bundled insurance product and referral and cashback rewards.

Although there were relatively few digital users at the start, they were high-frequency users classified under the Emerging/Enabled archetype in Accion's Digital Maturity Framework. To encourage more of these user types to adopt its products, AMfB launched campaigns that incentivized frequent use, targeted at Emerging/Enabled users. For example, the SaveBrighta campaigns emphasized the product's reward benefits, which rewarded customers based on the frequency of deposits and amounts saved: the more saved, the more rewards earned. Account officers were also dispatched to pitch the products directly to customers. As a result, the institution's transaction volumes from digital channels increased tenfold from 2.02 billion Nigerian naira (NGN) ($2.5 million) in 2019 to NGN 20.99 billion ($27 million) in 2021.

[82] Accion Microfinance Bank, n.d., retrieved September 2023 from https://www.accionmfb.com

## Understanding MSME Needs

To develop a relevant customer value proposition, FIs need to gain strong insights into the needs and preferences of the MSME target segments. Successful value propositions rely on multiple sources of information and data analysis to determine these needs and behaviors, using both internal and external information sources. Some of the most commonly used data sources are:

- Profiles of existing client relationships across the product portfolio.
- Transaction histories and credit behaviors of existing clients, including reports from field staff.
- Planned research and insight surveys of MSMEs and their industry sectors, and publicly available reports.
- Through partnerships with other institutional players such as e-commerce platforms and MNOs.

MSMEs have a broad range of banking needs that go beyond credit and access to finance. The primary need of nearly every MSME is the ability to conduct financial transactions in a cost effective, efficient, and secure manner for their day-to-day business activities. Offering payments and transaction services is an effective financial entry point for MSMEs, formalizing their business transactions and creating financial records that can help in evaluating business creditworthiness and qualification for future credit product offerings. It is important, therefore, to take a holistic view of MSME businesses and consider the complete range of financial and nonfinancial services that their business operations require.

Table 3.6. summarizes the financial and nonfinancial needs of the MSMEs, and the relevant business drivers.

These financial and nonfinancial needs of the MSMEs, while present across the broader segment, can vary in intensity based on the industry sector, size, and overall maturity of the business. Successful FIs assess the specific needs of their targeted priority segments to design and deliver relevant products and service propositions, as summarized in Figure 3.4, page 69.

| Services | | Business needs |
|---|---|---|
| Financial Services | Credit | Financing for business operations and expansion, assets purchase |
| | Payments | Transaction services to make payments to suppliers and for receiving payments from buyers in an efficient and low-cost manner |
| | Saving/ Investment | Products to support savings and investment needs of the MSMEs |
| | Protection | Insurance for inventory and equipment, health and life |
| Nonfinancial Services | Financial management | Managing business records, bookkeeping, financial planning and dealing with FIs |
| | Marketing and sales | Effective use of marketing and sales techniques, especially for marketing through digital media; customer relationship management |
| | Digital skills | Capability to identify and implement digital tools across business operations |
| | Market linkages | Connecting with potential buyers and suppliers to enhance outreach and grow business |
| | Regulatory compliance | Advice on business registration, legal, licensing, and taxation |

*Table 3.6: Financial and Nonfinancial Needs of MSMEs*


*Figure 3.4. MSME Financial Solutions*

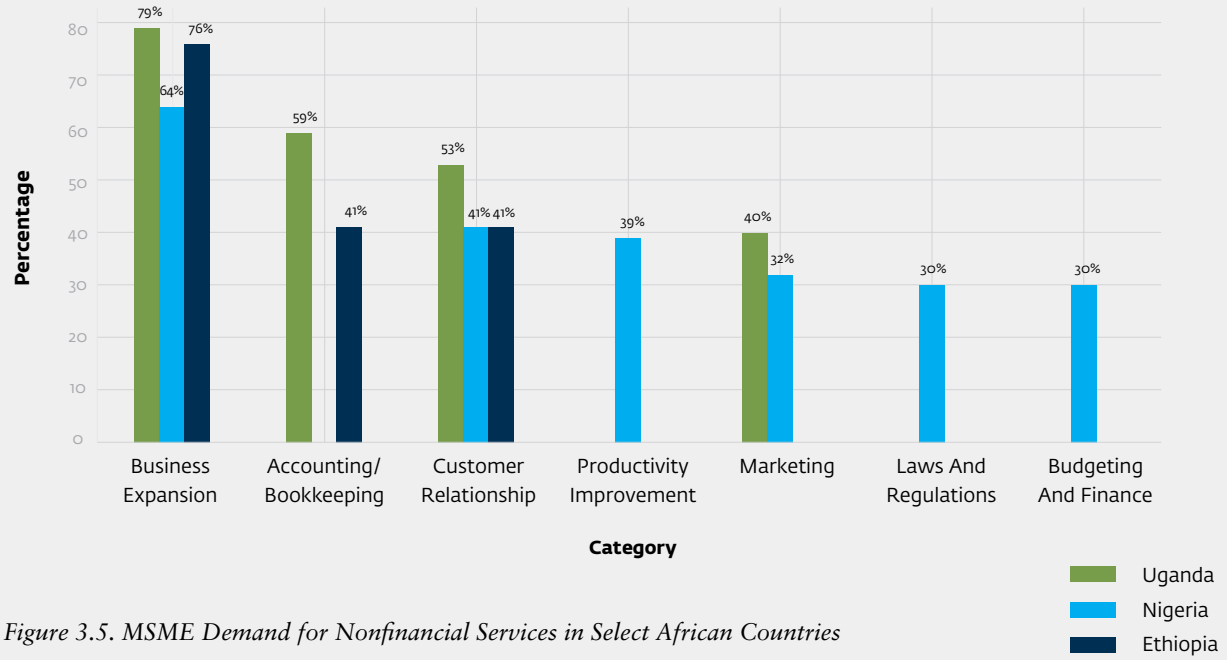


*Figure 3.5. MSME Demand for Nonfinancial Services in Select African Countries*

## Payment Services

While cash remains the preferred form of payment for MSMEs in Africa and their customers, digital payments for making a purchase from an MSME are gradually being adopted among African consumers. IFC's survey of MSMEs in Nigeria[83] shows that the use of digital channels is increasing—forty-four percent of MSME respondents were using mobile banking for payments, and 16 percent internet banking. The percentage of consumers in Sub-Saharan Africa that used a mobile phone or the internet to make a purchase online increased from 3.6 percent in 2017 to 6.7 percent in 2021.[84] In 2021, this type of digital payment to make an online purchase reached 16.3 percent in Kenya and 16.8 percent in Tunisia,[85] providing evidence that investment in the ecosystem for digital payments is working.

As cash remains the dominant form of making and receiving payments, there is a significant opportunity for FIs to provide digital solutions to move payments away from cash. This requires propositions that incorporate a wider range of MSME business needs, as well as offering efficient, low-cost digital payment services. For example, IFC research estimates that affordable transactional accounts and digital payment solutions could serve 302,000 formal sole proprietors and 195,000 MSMEs in Tunisia, generating a total of 77 million Tunisian dinars ($24 million) in revenue.[86]

## Access to Credit

Access to formal, affordable finance is critical, and one of the most cited needs and challenges for MSMEs, impacting their capability to sustain, expand and grow the business. With a lack of formal financing options, MSMEs have traditionally had a high reliance on personal savings, family and friends, and high-cost informal lending sources to set up and finance their business operations.

While many FIs are developing a broader range of products for MSMEs, many offerings remain basic, and lending is often geared toward medium enterprises. Historically, this has been constrained due to limited availability of documented financial records of MSMEs and their high reliance on cash transactions. However, with the increasing digitalization of payment services and the availability of data on MSME business activities, this issue can now be addressed. The growing number of digital channels and adoption of digital financial services means that banks can build better profiles of the MSME segments, developing relevant products and data-based credit models to service MSMEs.

## Nonfinancial Services

Capacity building and mentoring opportunities are highly valued by MSMEs, as many owners understand that better managed enterprises have greater opportunities to access financial services. MSME business performance can be limited by the management skills and the digital and financial literacy of owners; training in budgeting, expenditure management, bookkeeping, and cashflow management can help MSMEs improve their knowledge of effective business practices, thereby enhancing the potential and sustainability of their businesses. Recent IFC surveys of MSMEs in some African countries show a significant demand for provision of nonfinancial services (Figure 3.5, page 70).[87]

Provision of nonfinancial services by FIs to their MSME clients can strengthen MSME value propositions and help attract clients, improve reach, and increase cross-selling. The digitalization of communication channels has reduced the cost of delivering nonfinancial services and significantly enhanced outreach capabilities. FIs can now offer nonfinancial services through their own channels or in partnership with digital service providers, as described in the next chapter.

[83] IFC, 2022, Market Bite Nigeria: https://www.ifc.org/en/insights-reports/2022/market-bite-nigeria-innovation-offers-key-to-the-broader-msme-finance-market

[84] Findex, 2021, The Global Findex Database 2021: https://openknowledge.worldbank.org/entities/publication/b74e1909-3ecf-5009-b51c-8527fc4eefeb

[85] Ibid.

[86] Inclusion Financière en Tunisie État des lieux et opportunités, IFC, 2022, https://www.ifc.org/fr/insights-reports/2022/inclusion-financiere-en-tunisie

[87] IFC, 2022, Market Bite Nigeria: https://www.ifc.org/en/insights-reports/2022/market-bite-nigeria-innovation-offers-key-to-the-broader-msme-finance-market; IFC, 2021, Market Bite Uganda: https://www.ifc.org/en/insights-reports/2021/ifc-market-bite-uganda-challenges-and-opportunities-for-msme-finance-in-the-time-of-covid-19; IFC Market Bite Ethiopia – unpublished, IFC internal source.

**CASE STUDY**

# *PayShap, South Africa – Leveraging Payments to Digitalize MSME Customers*

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PayShap is a nascent instant payments solution for low-value, real-time payments that is owned and operated by BankservAfrica, South Africa's National Payments Switch. PayShap was launched in July 2023, driven largely by the South African Reserve Bank's Vision 2025,[88] which aims to increase financial access.

While South Africa has a relatively highly banked population, most account holders, including 19 million social grant recipients, simply withdraw cash from their accounts every month and then transact in cash. For MSMEs, cash is immediate but introduces risks such as theft and fraud.

To reduce cash use and attract the adoption of bank accounts, BankservAfrica developed PayShap for person-to-person payments as well as small business payments. In late 2024, PayShap launched a request-to-pay feature[89], enabling MSMEs to issue customers a request to pay. The customer receives the request from their bank app or via text message prompts and approves or rejects the debit request instantly. This solution empowers the merchant or small business owner to encourage more customers to pay digitally. It can also, potentially, replace point of sale terminals which are more expensive and require cards—something customers may not have. The PayShap solution also enables immediate settlement into the merchant's bank account.

From its launch in March 2023 to end of May 2024, the number of transactions processed on PayShap had reached 30 million to a total value of about 19.5 billion South African rand.[90]

[88] South African Reserve Bank, 2018, The National Payment System Framework and Strategy - Vision 2025: Action Plan: https://www.resbank.co.za/content/dam/sarb/what-we-do/payments-and-settlements/Vision%202025%20-%20Action%20Plan.pdf

[89] Introducing PayShap Request - send and receive payment requests, Discovery bank website, 16 January 2025: https://www.discovery.co.za/bank/news-introducing-payshap-request-in-your-app

[90] PayShap transactions push through 30-million mark, BusinessDay, 30 May 2024: https://www.businesslive.co.za/bd/companies/financial-services/2024-05-30-payshap-transactions-push-through-30-million-mark/

# 4

# Meeting the *Banking Needs* of MSMEs

*There is a tendency to focus on credit requirements when determining the banking needs of MSMEs. As highlighted in the previous chapter however, MSME needs extend beyond credit and include a whole range of financial and nonfinancial services for managing and growing their businesses. Therefore, FSPs need to take a more holistic approach to service offerings, which should include nonlending products, such as deposit and transactional products.*

*Integrating a wide range of financial and nonfinancial services such as technical advisory, training, and market linkages into bank offerings ensures sustainable growth of MSME clients and creates opportunities for FIs to cross-sell and upsell additional products, acquiring more business from existing and new clients. The product mix should aim to address common MSME challenges such as capacity constraints, lack of formalization, and poor access to markets.*

*Digitalization offers opportunities for FSPs to develop tailored products to the specific needs of MSMEs, and to deliver such products through a broader range of channels (see Figure 3.5 in the previous chapter).*

## Customer Centricity to Succeed

FSPs that are successful in serving MSMEs are customer centric, i.e., they put the MSME customer at the center of their business. Customer Centricity is much more than customer service. It is a commitment from all employees across the organization that the client comes first and foremost. Every decision made across the bank has to take into account the impact on the customer experience. A common complaint from MSME clients is that they do not go to the bank for a loan because the process is too cumbersome, requires too much documentation, takes too long, or is too complicated. The new data-driven digital context allows banks to address these issues.

The MSME customer value proposition builds on four core elements:

**Advisory.** The quality of the financial advisory delivered by the Relationship Managers; MSME clients want to be supported.

**Products.** The financial solutions; the features and benefits for all four product categories: transactional, loans, deposits, and insurance.

**Processes.** The method by which financial solutions are delivered to MSMEs must be customer friendly and cost effective.

**Customer Service.** How are the interactions between the FSP and its clients? Do they always provide a positive customer experience?

IFC experience has shown that the MSME customer is generally looking for:

- Qualified bankers to provide advice and guidance; MSMEs have a desire to be trusted and supported.
- Flexible and affordable financial solutions to support growth, especially "lighter" collateral requirements.
- Speed—requests and branch visits should only take a reasonable amount of time.
- Multi-channel service delivery, including digital banking for convenience.
- Protection for their assets and business.
- Networking opportunities and other nonfinancial services.

Products are more likely to succeed if they are tailored to the specific needs of particular sub-segments. Micro and small enterprise clients, for example, are better served with simple, standardized, fixed-price products that are delivered quickly through mass delivery mechanisms, while medium enterprise clients generally expect customized and comprehensive products that are flexible and come at a negotiated price.

Successful products will address the specific needs of different MSME clients, have competitive features and benefits that are clearly marketed to the target customer segment, and be sold at a price that reflects risk. They should also be simple to explain for bank staff and simple to understand for the client. From a business perspective, they must be profitable, and should be constantly improved.


*Figure 4.1. Example of a Generic Product Development Process*

## The Product Development Process

The product development process encompasses all steps needed to take a product from concept to market availability. This includes identifying a market need, researching the competitive landscape, conceptualizing a solution, developing a product roadmap, and building a minimum viable product, as illustrated in Figure 4.1. While dedicated product management staff typically drive the product development process from a strategic standpoint, the process is a much broader exercise requiring the work and input of many units across a business.

There are four basic product categories for MSME customers: Day-to-Day (transactional), Savings (deposits), Loans (credit), and Insurance, as illustrated in Figure 4.2, page 77. NFS (nonfinancial services) can be considered a fifth category and are not only of significant value for MSMEs, but also a useful differentiator for FSPs that provide nonfinancial services. They can be integrated into the product family within credit and advisory packages. Alternative financing products (see Figure 4.3, page 78) are becoming increasingly viable and available on the back of digitalization.

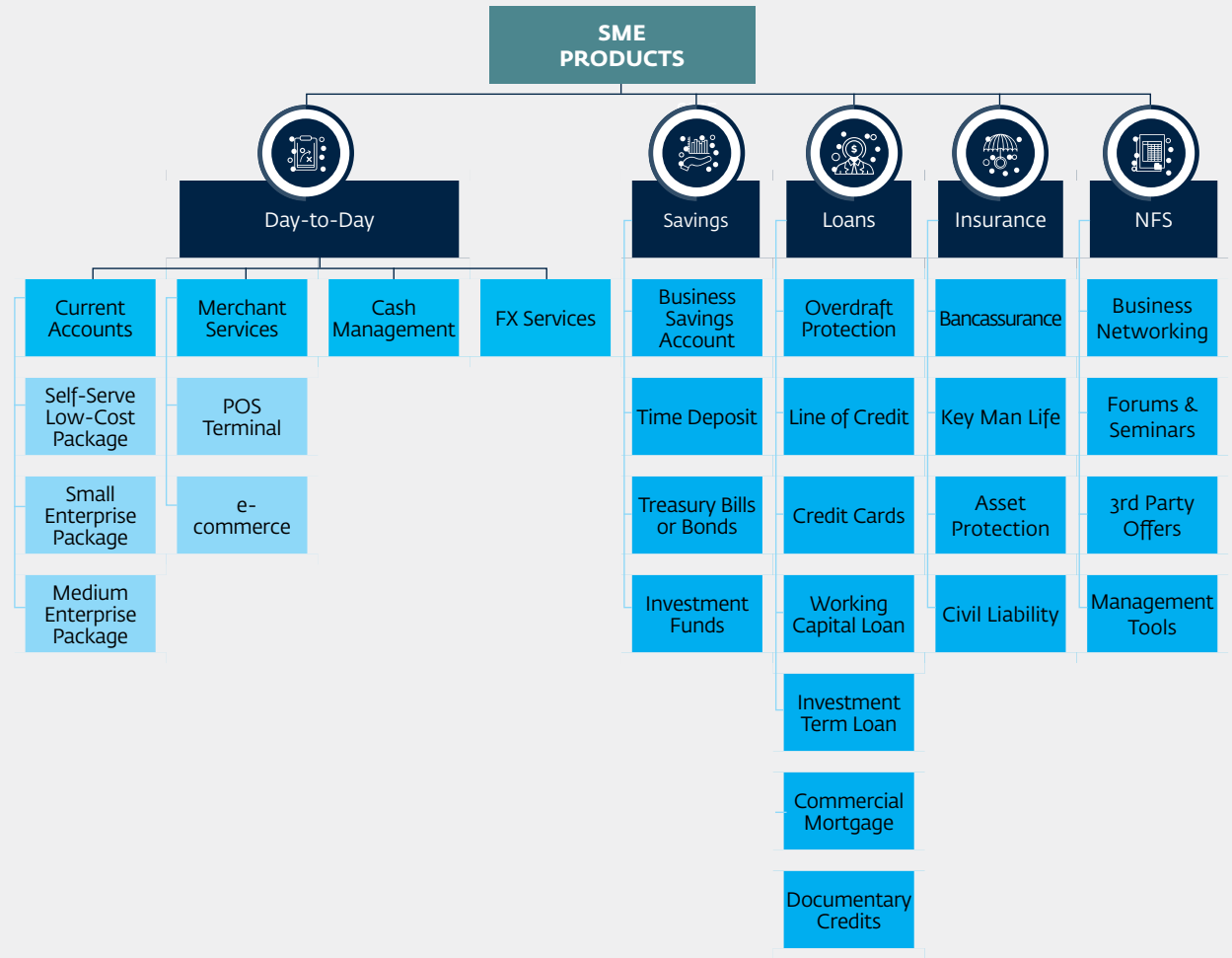


*Figure 4.2. MSME Core Product Menu*

## *An Agile Approach to Product Development for MSMEs*

Digitalization and the increasing availability of data have transformed product development methodologies. The process is now more collaborative, enabling easier interactions with target MSMEs and better use of data; this supports a more customer-centric approach and results in products more relevant to MSME needs. Some of the key aspects to consider when developing products for MSMEs are:

**Interactions** between the product development team and the customer should start early in the process, from defining the problem, ideating, and designing the solutions, including channels and user interfaces, to the rollout of the product iterations. It is important to ensure that product development processes include mechanisms for collecting, analyzing, and incorporating customer input at each step. Customer input can be in various forms, such as observations of customer routines during the product ideation or design phase, or in the form of client data collected from existing relationship profiles, financial transactions, and interactions with channels such as mobile apps or websites.

**Product development** is a collaborative process and must actively engage all related functions within the organization and business and technical teams, as well as operations and risk management. The process should have efficient communications and alignment across the various functional teams in the organization.

**Data** should play a key role in the product development process; product development teams should use internal and external data as an integral part of the process to design, build, pilot, launch and improve the product.[91] This use of customer and industry data allows the provider to address real issues of customer targeting, product delivery, and bottom-line sustainability to ultimately improve the product offering.

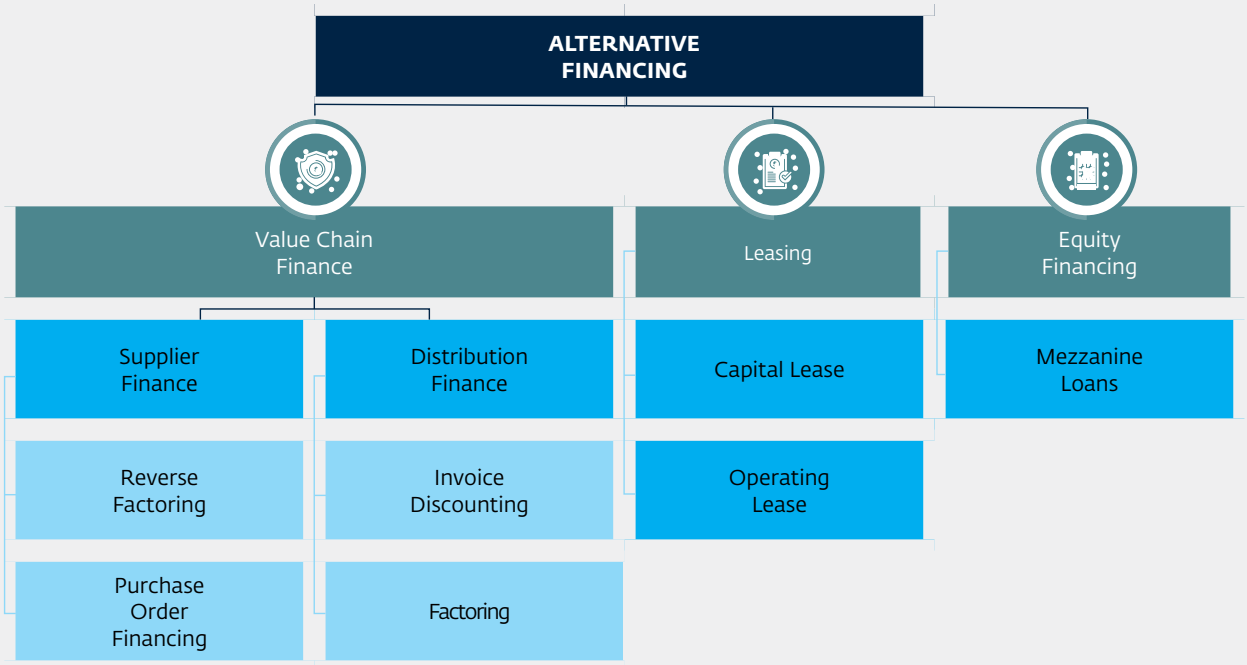


*Figure 4.3. Alternative Financing Products*

[91] DMAC Toolkit, 2022: Unleashing the power of data to transform your business: https://www.accion.org/wp-content/uploads/2020/02/DMAC-methodological-toolkit_MASTER.pdf

In a customer-facing service industry such as finance, all data ultimately derives from customer interactions with products and services.

FSPs are increasingly turning to approaches that offer more flexibility, collaboration, and adaptability. One of the most popular of these is 'agile development', a set of practices based on twelve principles centered around client-centricity, close collaboration between business and developer teams, and frequent deliveries of quality, working software.[92] This section provides an overview of an agile product development methodology designed by Accion specifically for FSPs that adopts a data-driven and customer-centric approach.[93] This approach, summarized in Figure 4.4, page 80, incorporates the following key principles:[94]

**Use data** to diagnose and validate the needs and aspirations of MSMEs, challenging existing bank strategies and products. Quantitative analysis of the behaviors of these segments is an important starting point.

**Adopt** a diversified approach to obtaining customer insights. Conduct quantitative and qualitative research with MSMEs and bank staff who interact with MSMEs regularly. Be open to other sources of customer insight data such as studies and research by third parties.

**Understand** the range of products and services with the capacity to solve business challenges, aligning customer research accordingly. This helps narrow the focus of market research and identify which products can address customers' needs and aspirations.

**Use** the business case to drive decision-making at every stage of product development. MSMEs represent a significant market opportunity and the financial projections for a product must confirm this. In certain critical cases, a particular product or service may function as a loss leader, requiring the business case to be assessed as part of its bundling with other products and services.


[92] Agile Alliance, What is Agile: https://www.agilealliance.org/agile101/; 12 Principles behind the Agile Manifesto: https://www.agilealliance.org/agile101/12-principles-behind-the-agile-manifesto/

[93] DMAC Toolkit, 2022: Ibid.

[94] Accion, 2022, Product Development Methodology (internal document).Mazzuma.

The approach to product development for MSMEs is divided into four distinct phases.[95] The overall aim is to develop products that are desirable to the target MSME users, commercially viable for the institution and partners, and feasible to deliver, leveraging both internal and third-party capabilities where applicable.

As indicated by the arrows in Figure 4.4, the stages in the product development process should be iterative, and the entire process is nonlinear. The use of data enables the product development process to be more agile, with quicker feedback loops.

## Phase 1: Define the Problem

It is important to first understand the business challenges that needs to be solved for the target MSME segment and the reasons behind them. This phase may use outputs from the customer segmentation analysis described in the previous chapter. Initial analysis can use existing institutional data and/or external research to assess how products and services currently available in the market can address this need, and if there is an opportunity at all for a new or adjusted product to better meet the MSME segment's business challenges.

During the first phase, key goals and drivers for the initial high-level business case should be defined using available internal and external data. It is important to examine the data to understand the current trajectory of the bank's MSME business, as well as the MSMEs' behaviors through analysis of their transactions and interaction with digital channels and platforms. The key challenges faced by the MSME segment should be outlined and validated through data analytics and internal commercial teams that engage with the segment on business goals. Some examples of the commercial goals could include increasing revenue, customer lifetime value, MSME unit profitability, accessing new MSME customers with different profiles, and enhancing customer growth and retention.

These data-driven segment insights, and the key commercial goals, should guide decision-making throughout the product development process.

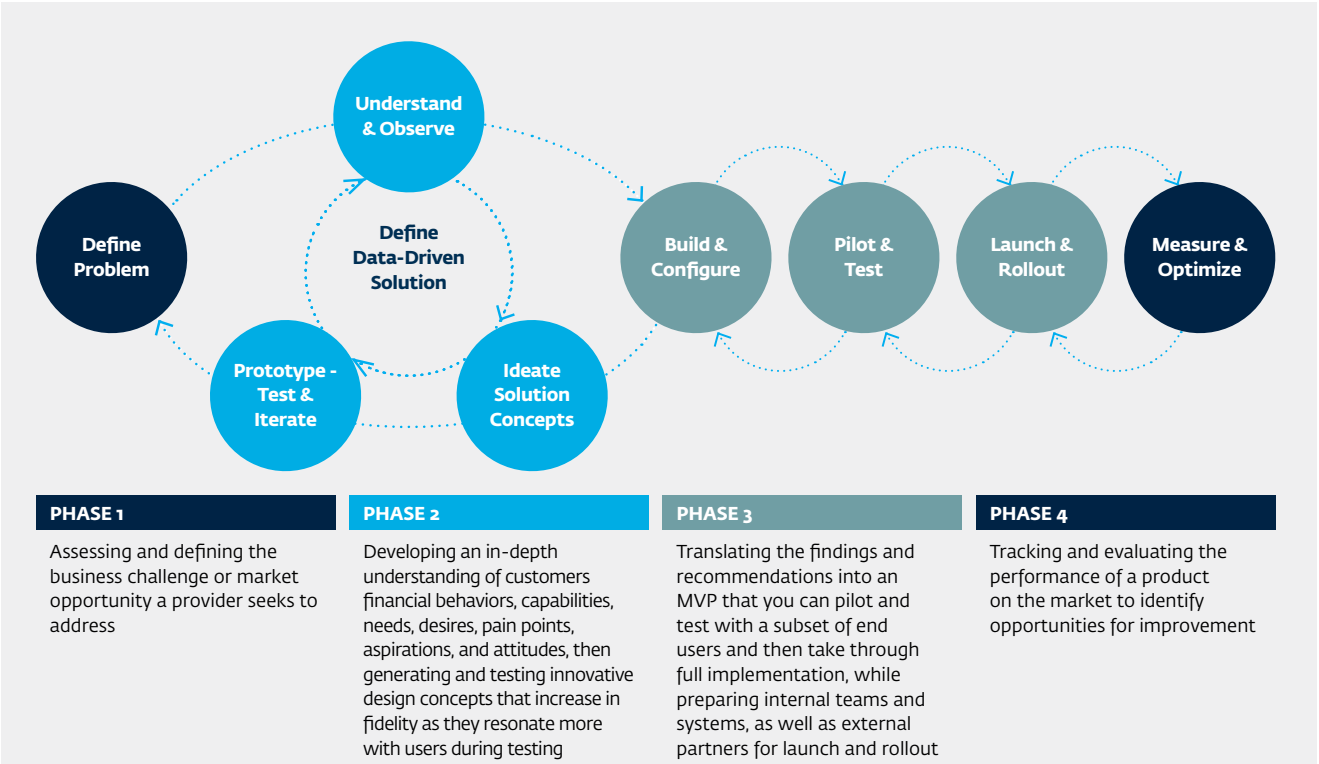


*Figure 4.4. A Methodology for Data-Driven Product Development*[96]

[95] Ibid.

[96] Ibid.

## Phase 2: Define the Solution

After gaining knowledge of the behaviors, capabilities, and needs of the target MSME segment, it is important to develop an understanding of the client experience for the proposed solution, validating the assumptions and testing the value propositions to ensure they fully respond to the MSMEs' needs. Human-centered design approaches enhance deep customer understanding and empathy, and can catalyze innovative designs. These approaches include:

**Primary research.** Conduct research to (i) gain deeper insights into the targeted MSME segments using immersive and participatory interview tools such as income and expense maps, card sorting to rank concepts, and journey mapping and storytelling; and (ii) allow for more in-depth conversation and engage the customer interviewees in the design process.

**Understand the customer.** Monitor customers' day-to-day operations by collating and analyzing segment data, focusing on their interactions with similar products or services, identifying inefficiencies, and addressing both implicit and explicit pain points in the customer journey. For example, if a digital payment service is being considered, the bank should examine the merchant's current cash processes. This allows the product development team to understand the standards the product must meet to improve the customer experience.

**Build the customer value proposition.** Develop a customer value proposition (CVP) that clearly defines the elements most valuable and necessary to the MSME and identifies any pain points the customer may experience with the existing proposition, minimizing these in future iterations. The CVP outlines the benefits the product offers to the customer and describes the problems it solves. This is an iterative process that requires collaboration and alignment between design, product development, and business teams.

**Map the customer journey.** Analyze data across all touchpoints in the customer journey to understand how a customer progresses from becoming aware of a new offer to signing up, using the product for the first time and then regularly, and ultimately becoming a loyal client. The customer journey map captures the various points at which customer engagement and communication occur. This is an important product design tool, as low product usage among nontraditional users often results from disconnects along the journey. In addition, it provides an important visual representation of how customer data flows in and out of the institution.

**Prototype and test the product concept.** Pilot the product with the target MSME customers to verify its capability to deliver and manage product performance, and to validate ideas and refine product concepts. This involves reviewing internal process performance indicators and gaining customer feedback on an idea or key part of the product concept, obtaining new data to inform the development process, and allowing exploration of multiple product concepts quickly and cheaply before investing in detailed design and development.

The output of this phase includes capturing the standards that a product needs to meet to deliver value to the business and its customers, along with validating the commercial viability of the solutions at a high level.

## Phase 3: Build and Configure

While technology and digitalization of products and delivery channels have had a general positive impact on lowering costs of serving MSMEs, FSPs should ensure that the organization has the capability to deliver the value proposition efficiently. The product should therefore be pilot tested before full rollout to ensure it not only meets the MSME segment's needs but can also deliver on the provider's financial goals. This is particularly critical when deploying digital processes and tools to acquire and service MSMEs, ensuring that any glitches in the technology are removed to eliminate transaction errors and downtime, thereby meeting customer expectations.

When the potential product concepts have been identified and core dependencies assessed, the product development team should focus on the following steps for piloting the product before final rollout and launch:

**Organizational capability.** Developing and delivering the product in line with MSME segment needs, behaviors, and preferences is critical to ensure product acceptance and uptake. Before rollout, the FSP should determine whether it has the technical capability, operational capacity, resources, partnerships, infrastructure, skills, willingness, and appetite to execute. This can be done by prioritizing concepts based on the feasibility of implementation and the strategic value the solution brings to all stakeholders (including partner organizations, the bank, and customers).

**Product profitability.** Develop a business case specific to the product with financial projections to articulate cost-benefit analysis. This includes identifying the main cost and revenue drivers, testing assumptions and sensitivities, and establishing key performance indicators and long-term ROI for the product.

**Risk assessment.** Conduct a risk assessment for the product, based on the organization's risk governance framework, risk appetite, and regulatory requirements in operations. With increasing adoption of technologies, availability of client data, and an evolving regulatory environment, it is critical to be aware of compliance requirements, in addition to credit risk. The product design and its delivery framework should be incorporated in the design and feasibility of the product.

**Product structure (product program) document.** This document should clearly define the offering and expectations from the product, identifying the target segment and including a problem statement, the solution offered, the communications and delivery channels, and financial projections. It should also map out the processes, technology, and systems that underlie all aspects of the customer journey, including awareness, acquisition, approval, usage, complaint resolution, and customer engagement. The product program enables the documentation of product requirements, data, and technology needs, helping to align these requirements across the organization and drive the product's operationalization.

When a product has reached an advanced development stage it is advisable to pilot the product on a limited scale and coverage area, targeting an MSME sub-segment that can be effectively managed. An assessment of the product should be completed from the perspective of both the target MSME clients (including adoption and usage of the product) and the operational and system performance of the provider. Depending on the feedback received and data captured during the pilot, tweaks can be made to the product to make sure it delivers the intended value proposition to the target MSMEs and meets the provider's business objectives. Once the product achieves satisfactory pilot expectations—with multiple iterations if needed—it can move to a scaled-up public launch.

To support the product rollout, a go-to-market plan should be developed for creating and implementing the activities, processes, functions, and systems necessary to deploy and operate the product and engage the target MSMEs. This includes filling all gaps in the provider's capacity to launch and operate the product, and client engagement plans to support end customers and address any capacity needs required for using the solution. This is a critical final step in the product development process, as the best-made products can, at times, perform below expectations with a weak go-to-market plan. It is important to ensure all key internal and segment-engagement aspects have been covered in the plan: sales and customer management strategy, staff training and KPIs across all customer touchpoints, a marketing and communications plan, and relevant data dashboards for monitoring performance indicators at the staff and product level.

## Phase 4: Post Launch Monitoring and Improvements

After a product launch, it is important to continuously assess how the product is performing against the KPIs, business case, and data points determined earlier in the product development process. The FSP needs to ensure that the right systems, processes, and staff skills are available to collect, analyze, and report the required data.

The data from the new product should be analyzed regularly, and tweaks made to the product based on any insights gained. Product performance data should include transactional data and digitized inputs from reports on business performance, as well as customer survey data. KPIs that can provide insights for use in adjusting the product and improving performance include:

**Business growth**—number of new customers, value of new business generated, cross-sell and upsell.

**Product adoption** and usage rates—number of transactions and value of transactions, average loan and savings balances.

**Revenue growth**—interest income and fees, commissions.

**Customer relationship**—retention rates, Net Promoter Score, customer satisfaction levels.

**Efficiency**—reduced customer acquisition cost, sales conversions rates, turnaround times, approval rates.

**Portfolio performance**—renewal rates, reduction in portfolio at risk.

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**CASE STUDY**

# *NBC, Tanzania – Leveraging Data or Product Development*

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National Bank of Commerce (NBC) is one of the largest and oldest banking institutions in Tanzania. It is majority-owned by pan-African financial services group Absa,[97] with remaining stakes held by the government of Tanzania and IFC. NBC offers a range of retail, business, corporate and institutional banking, treasury, and capital markets solutions distributed through 52 branches, more than 9,500 banking agents, and an extensive network of ATMs and online banking platforms supported by 984 staff across the country (as of 2022 financial year-end).

NBC focused on corporate banking until 2016, when the bank recognized the untapped potential of the "missing middle"—enterprises larger than micro but smaller than corporate that remained underserved. The bank expanded its business banking division to target such small and medium enterprises (SMEs), which it defines as firms with an annual turnover of between 300 million Tanzania shillings (TZS) and TZS 7.5 billion ($120,000 and $3 million, respectively). NBC further expanded its reach among underserved segments in 2018 to include microenterprises with an annual turnover of up to TZS 300 million ($120,000) in its retail banking division. By 2019, the bank had strategically identified the full range of SME segments as its utmost priority, investing heavily in research to create solutions that align with their needs.

To develop new, data-driven solutions for the SME segments and execute its SME strategy, NBC developed an in-house customer relationship management (CRM) system that tracks sales activities, monitors progress against goals and targets, and provides a dashboard view for management. Ultimately, the CRM helps determine actions or adjustments needed to optimize the bank's products, internal sales processes, and performance. The tool is complemented by the bank's use of data analytics, continued exploration of emerging technologies, and established systems and processes. Together, these resources bolster the bank's relatively small MSME team to drive initiatives and inform product and service development.

NBC's SME segmentation strategy is grounded in gaining a deep understanding of the customer and developing solutions to address their unique needs. Following a "test-and-learn" approach, NBC leverages internal data from its CRM tool as well as other sources to develop targeted CVPs.

One of NBC's SME-focused solutions is a value chain financing product for distributors and suppliers, launched in 2021. Market data showed significant transaction volumes between large manufacturers and their smaller distributors, presenting an opportunity to engage with these manufacturers and create a product to help their small distributors grow. NBC partnered with leading corporate entities, such as major energy companies Oryx Energies, Taifa Gas, Puma Energy, and others, to offer their distributors collateral-free financing of up to TZS 400 million ($160,000). NBC used a data-driven model to design the product and informed its development by consulting each corporate partner on ways to enhance cash flow, and on disbursement mechanisms, conditions, and other relevant aspects. NBC has designed closed-loop structured loans that are forward-looking and based on cash flow to make sure that SMEs do not diversify the funds, and the distributors benefit from more flexible application requirements. The loan decision for smaller distributors is based on a field check of the business and an assessment of a 12-month bank statement and past-purchase track record of the distributors.

NBC's SME product development is led and championed by a business banking team member who works across legal, credit, and IT departments, as well as teams in the field. Cross-functional team members work together to identify and research new opportunities, refine value propositions, and design, implement, and iterate solutions for each SME segment.

The distributor loan forms a significant part of the bank's overall business banking portfolio, which grew 18% year-over-year in profit before tax and 38% year-over-year in customer loans, in 2022. The suppliers' loan has shown significant growth, with disbursements reaching TZS 132 billion ($51 million) in 2023, from TZS 2.6 billion ($1 million) in 2021, and income increasing from TZS 0.4 billion ($155,000) in 2021 to TZS 4.08 billion ($1.6 million) in 2023.

The distributor loan has gone through more iterations as the bank sought to improve the product. NBC used the learnings from its initial launch to modify how it communicated product information. For example, it presented a daily interest rate of 0.5% for distributors and a monthly rate of 1.5% for suppliers, instead of an annualized rate of 18%. Additionally, it reframed the cost of financing in actual terms and/or monthly rates, enabling MSMEs to more easily compare costs against their daily or weekly margins and better understand the offering.

[97] Absa Group Limited, a multinational banking and financial services conglomerate based in South Africa: https://www.absa.africa/

## *Digital Innovation and New Lending Models*

During the past decade, MSME lending models have dramatically evolved, driven by new technology, payment digitalization, and partnerships between traditional and new players. Before mobile banking services and mobile money became ubiquitous, MSME lending was primarily driven by nonbanking FIs. These institutions deployed front-line staff to manage all aspects of the lending journey—from origination to assessments and delinquency management. Customer profiling and underwriting data were limited to what the institution's agents could collect and assess.

Today, MSME lending models have evolved to obtain and use a wider range of data for quicker, automated, and remote credit decisions. Many lenders have incorporated alternative data sources as well as advanced algorithms and analytics into their credit-scoring methodologies. Alternative data sources may include call data records, digital transactions such as utility and rent payments, supplier payments, e-commerce records, mobile money transactions, and social media information to better understand the business owner's behavior. The algorithms can predict the capacity and willingness to repay using reiterative machine-learning techniques that improve their analysis over time. They assess creditworthiness based on a broader range of data points beyond traditional credit history, enabling lenders to evaluate small businesses and individual entrepreneurs with limited or no credit history. The use of these technologies and the subsequent learnings by lenders have led to improvements in MSME loan decision turnaround time and the customer experience.[98]

Once a loan is approved, lenders increasingly disburse loans and collect repayments through mobile money wallets or bank accounts that MSMEs can access and manage on their mobile phones. These digital channels reduce the need for branch networks and can leverage agent networks run by third parties such as MNOs and specialized payment providers. They can also enable MSMEs to access the funds faster, through their wallets or through agents who may be closer to the business location, and thus more efficiently take advantage of investment opportunities.[99]

Repayments are increasingly collected through automatic debits from the same mobile money wallet or bank account. Mobile money operators are also offering loan repayments as an option in their digital bill payment menu for wallets. As loan repayments become digital transactions, borrower behavior data can be scored more readily by lenders to decide which collection strategies and tactics should be deployed in engaging with MSMEs that do not repay on time.[100]

As MSMEs increasingly use digital platforms to procure and sell goods, the platforms are starting to play a central role in determining how FIs source, evaluate, and lend to customers. FSPs can now leverage MSMEs' digital footprints and new data types to reimagine and customize traditional lending models such as Buy-Now-Pay-Later (short-term financing usually offered by the seller at the point of sale), embedded finance (integration of a financial service into a nonfinancial channel), and supply chain finance (short-term working capital enabled by transaction flows between actors in a value chain).

[98] Accion, 2018, Demystifying Digital Lending: https://www.accion.org/wp-content/uploads/2018/09/1123_Digital-Lending_R10_Print_Ready-2.pdf

[99] Ibid.

[100] Ibid.

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**CASE STUDY**

# *MTN, South Africa - Deepening MSME Lending Through Strategic Collaborations*

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MTN Group is a pan-African telecommunications company headquartered in South Africa, with a presence in 19 markets across Africa and the Middle East. The company provides a range of services including voice, data, fintech, digital and API services. As of 30 June 2024, it served over 288 million mobile subscribers, 150 million active data subscribers, and 66 million active users of MTN's mobile money service, MoMo.[101]

In its operating markets, MTN has observed that MSMEs want solutions that help them to pay, get paid, or make money. A detailed value proposition, targeting five core MSME segments has therefore been developed at group level to help MSMEs meet these needs. MTN has since focused on building a fintech platform ecosystem through its MoMo4Business service and expanding its proposition to include lending, payments, and other platform-as-a-service offerings to MSMEs. To do this effectively, strategic partnerships are critical.

In 2022, a partnership between MTN Zambia, JUMO,[102] and Absa Bank launched a pilot product to enable MSMEs access longer-term loans, termed 'installment loans.' Operationally, MTN acts as the loan originator and "introducer" to the fintech, subject to the customer accepting the terms and conditions. MTN provides JUMO with over 100 data sets covering KYC, telecom data, and mobile money transactions. Through its credit decisioning algorithms developed and refined over 10 years of training machine learning models, JUMO uses the data points to draw out MSME performance trends and growth rates, scores the customers, and assigns limits for the installment loans. JUMO also manages Absa's capital investment by incorporating the analysis into its own credit underwriting methodology and, subject to agreed mandates with Absa, disburses the loan to the customer via the mobile money.

MTN's monetization strategy includes a service fee model and a revenue share model. In the service fee model, a percentage is earned when a loan is disbursed. When the MSME repays the loan, MTN receives another percentage. In the revenue share model, MTN receives a share of the revenue when the customer repays the loan.

Each partner's role in the partnership reflects its respective advantages:

MTN provides:

**customer data**, such as mobile money transaction history.

**access** to its mobile money platform through open APIs.

**support** as the entry and exit point for the customer journey.

JUMO provides:

**customer registration** according to the KYC guidelines.

**development and management** of the lending platform, including credit scoring and loan account management.

**resolution of incidents** as per agreed service level agreements.

Absa Bank Zambia provides:

**regulatory approvals** and compliance management.

**credit underwriting** and provision of balance sheet funds for lending.

**resolution of incidents** as per agreed service level agreements.

To accelerate the growth of financial services and encourage product innovation, MTN has also created the MoMo Developer, an open API platform that provides developers complimentary access to its mobile money proprietary software platform and enables them to access data to create innovative financial products. Developers, from other organizations such as fintechs and banks, can use the APIs to build different products or solutions. Currently, the APIs enable collections, disbursements, payment gateways (for e-commerce), cash-in/cash-out, and remittances, as well as services such as "KYC as a service," "Authentication as a service" and "Channel as a service."

Through the open API, several experimental products and innovative use cases have been launched. For example, Lusuku (Uganda), an e-commerce and hailing platform, used the collection API to automate payment for transactions on its web app for orders in real-time. This allowed customers to make immediate payment and resulted in higher conversion rates and fewer losses from delivery partners.

The MoMo developer portal has become one of the leading open API platforms in Africa, growing from five APIs in 2018, to 30 APIs in 2022, and is available in 12 countries. In 2022, 23,961 developers experimented on the sandbox and 1,656 partners went live with various products and solutions, processing over 330 million financial transactions. The APIs are monetized through a service charge, mostly a percentage.

[101] MTN Group investor website, 16 January 2025: https://mtn-investor.com/reporting/interims-2024/index.php

[102] A mobile financial services platform, headquartered in South Africa: https://jumo.world/

## *Embedded Finance*

Embedded Finance involves integrating financial services within nonfinancial platforms or applications, to expand access to financial products and services for MSMEs.[103] Embedded finance providers, which include real sector companies, leverage digitalization to integrate financial services into their existing offerings and include companies from the mobility, agriculture, manufacturing, services, supply chain, and e-commerce sectors. Embedded finance providers use transaction-data-driven business intelligence to offer financial services of particular benefit to MSMEs. Embedded finance also creates efficiency and convenience for MSMEs as they can access financial services as required, without the need to log into another digital application or website to make a bank transfer or complete a loan application.

The key drivers for growth of embedded finance are[104] (i) the digitalization of commerce through business-to-business (B2B) and business-to-customer (B2C) e-commerce platforms, and increased acceptance of digital technologies post COVID-19 pandemic; (ii) fintech infrastructure with financial APIs offering the secure exchange of banking data; and (iii) lower digital customer acquisition costs versus the traditional bank application process. This growth also offers benefits for the end customers, the MSMEs, and the service providers.

*For the MSMEs:*

› Enhanced user experience and convenience by removing unnecessary steps and friction in the purchasing journey.

› New purchasing opportunities through Buy-Now-Pay-Later or point-of-service loans, creating an affordable payment plan in just a few clicks.

› Access to streamlined financial services by eliminating the need to shop around for a provider to get the required service.

*For the service providers:*

› Diversifies revenue streams by integrating financial services into the core product and service offerings, without incurring the overheads associated with operating a banking or payment business. Moreover, increased customer loyalty and more frequent interaction generate additional revenue streams.

› Leverages advanced customer insights to increase brand loyalty and offer a more compelling user experience. Understanding customers better within multiple touchpoints can also help businesses innovate.

› Unlocks growth opportunities by reaching out to previously untapped markets such as the unbanked. Creates a platform for fintechs, banks, and lenders to offer more tools and resources to users lacking access to traditional banking. According to a report from Plaid and Accenture, 85 percent of businesses surveyed said that embedded finance helps acquire new customers.[105]

With the developments in technology, new digital entrants, and a favorable regulatory environment, embedded finance offers a significant growth opportunity. According to Accenture, the global embedded finance industry is projected to reach a value of over $7 trillion within the next decade, with estimates that MSME banking revenue from embedded finance solutions could reach up to $92 billion by 2025.[106] In Africa and the Middle East, the embedded finance industry is expected to grow from $10.3 billion in 2022, to nearly $40 billion by 2029.[107]

Note that it is important for service providers to be mindful of the potential risks involved in embedded finance. The regulatory environment around embedded finance and data protection is still evolving and barely keeping pace with technology development, thus FIs need to be constantly abreast of relevant regulations to ensure compliance. Financial fraud is another risk area, and FIs offering embedded finance services need to implement robust data privacy and security measures to protect user information. Additionally, ensuring accurate credit information reporting is crucial to avoid over-indebtedness.[108]

[103] GPFI (SME Finance Forum, IFC), 2023, Innovations for financial services for Micro, Small and Medium-Sized Enterprises.

[104] Credolab, 2023, A Beginner's Guide to EmFi: Part 1 Introduction to Embedded Finance: https://www.credolab.com/blog/a-beginners-guide-to-emfi-part-1-introduction-to-embedded-finance

[105] Plaid, Accenture, 2021, Embedded Finance: Financial services whenever and wherever customers need them.

[106] GPFI (SME Finance Forum, IFC), 2023, Ibid.

[107] TechCabal (Sultan Quadri, author), April 2022, The next wave: What can embedded finance do for African Businesses: https://techcabal.com/2022/04/04/the-next-wave-what-can-embedded-finance-do-for-african-businesses/

[108] GPFI (SME Finance Forum, IFC), 2023, Ibid.

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## The Embedded Finance Value Chain

Providing embedded finance requires developing partnerships between key players in the ecosystem, including banks, microfinance institutions, mobile money operators, commercial distributors, and fintechs, each with a role in the efficient provision of embedded finance services. With technology advances and market development, players are reaching across the value chain to grow their business offerings and increase revenues. Figure 4.5 provides an overview of the role of each player in embedded finance.[109]

**Providers:** These are banking and nonbanking FIs and start-ups that provide financial services such as payments, lending, and insurance. They manage regulatory, credit, and compliance risks, and offer access to loans, payments, and insurance products.

**Enablers:** This refers to companies that build applications to enable and support embedders and providers in activities such as credit scoring, payments, data security, connectivity, and insights. In some cases, enablers can also provide financial services directly to the embedder.

**Embedders:** Nonfinancial businesses that own the website, mobile app, and other customer-facing digital platforms that intend to embed finance offerings in their platforms and marketplaces.

Many embedded finance providers initially focus on digital commerce or payments facilitation and later expand into lending. For instance, e-logistics companies offer owner-drivers vehicle finance or insurance, while agtech and e-commerce platforms provide e-money wallets and working capital loans to farmers and merchants. POS payment service providers offer loans to merchants based on transaction volumes. Practice management software also serves as an entry point, enabling loan underwriting through the MSME data collected by software companies.[110] Some examples of how embedded finance providers are extending financial services to MSMEs are highlighted in Box 3.

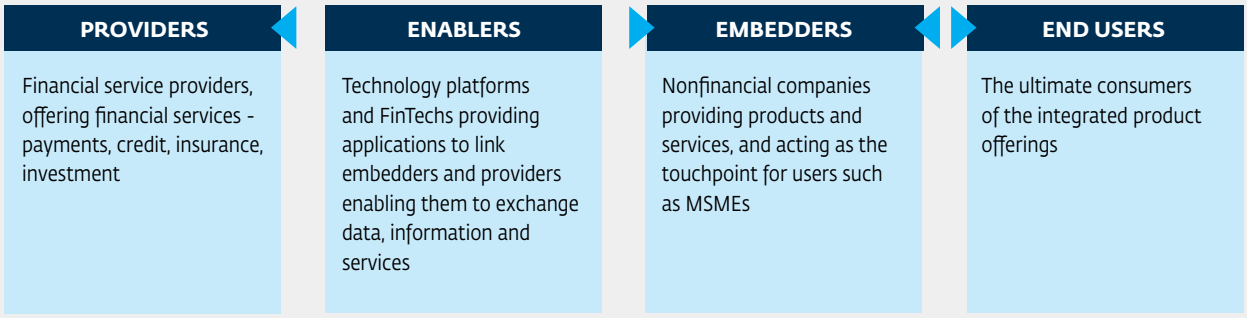


*Figure 4.5. The Embedded Finance Value Chain*

[109] Credolab, 2023, Ibid.

[110] GPFI (SME Finance Forum, IFC), 2023, Ibid.

# *Box 3.*
# *Examples of Embedded Finance Offerings*

*Gozem, a ride-hailing technology platform in West Africa with more than a million users, is an embedded finance provider that has developed a vehicle-financing program for its drivers. By integrating financial services into its ride-hailing platform, Gozem addresses the specific needs of its driver partners, providing them with a pathway to vehicle ownership and economic empowerment. The innovative aspect of Gozem's approach lies in its ability to leverage transaction data and business intelligence to offer tailored financial services that are directly linked to the drivers' income-generating activities. This model demonstrates the potential for embedded finance to extend financial access and support income-generating opportunities in the gig economy. Gozem's approach demonstrates the effectiveness of allowing and supporting the integration of financial services into nonfinancial platforms, fostering partnerships between technology companies and FIs, and tailoring financial products to the specific needs of gig workers and MSMEs.*[111]

*Mozare3 is an innovative agtech firm dedicated to optimizing the value chain around Egyptian farmers by providing input financing, buying their crops, and increasing their access to crop storage and processing as well as financial services. The company has incorporated embedded finance into its business model, granting its farmers efficient access to credit for a multitude of purposes, with the goal of enhancing the output of farms and improving the livelihoods of farm owners. Along with input financing and digital wallets that help farmers build a credit score, Mozare3's embedded finance offering also includes crop insurance and agricultural equipment leasing, all of which help boost farmers' productivity and resilience in the face of climate change and economic uncertainties. The offering even features agronomy support, through which Mozare3's agronomists advise farmers on what to plant (and when), improving outcomes throughout the entire value chain.*[112]

[111] GPFI (SME Finance Forum, IFC), 2023, Ibid.

[112] Nextbillion (Basil Moftah, author), November 2023, The Rise of Embedded Finance in Africa: Three Fintech Innovators Highlight its Potential to Boost Financial Inclusion and Business Growth on the Continent: https://nextbillion.net/embedded-finance-africa-three-fintech-innovators-highlight-potential-boost-financial-inclusion-business-growth/

**CASE STUDY**

# *Kuunda – Embedded Finance to Address Liquidity Constraints of MSMEs*

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Kuunda is a fintech that aims to provide liquidity services to agents, micro-merchants, and consumers through its digital lending-as-a-service platform. Initially launched in Tanzania in 2018, Kuunda has since rolled out operations in Malawi, Pakistan, and Uganda.

People in underserved communities rely on micro-merchants for basic financial services such as cash-in and cash-out payments, airtime top-ups for mobile phones, and bill payments. However, up to 20 percent of these transactions fail due to a lack of electronic float. This poses a high risk of failure for both parties; merchants face liquidity gaps, limiting their ability to extend financial services to communities, and customers are left without an immediate liquidity option.

To address this issue, Kuunda provides tailored, white-labeled digital lending products to its partners, specifically designed to reduce the risk of over-indebtedness often seen in emerging economies, while meeting its partners' strategic objectives. Partnership is a core element of Kuunda's business model in its efforts to provide financing to MSMEs. The company collaborates with strategic partners, including distributors, mobile money operators, microfinance institutions, and banks, to understand the liquidity challenges MSMEs face and design solutions based on the ecosystem's specific conditions.

Kuunda provides the product design capability, digital lending infrastructure (loan management systems, data analytics, behavior-based credit scoring), all reporting and automated reconciliations, and product growth support, identifying and partnering with FSPs to deliver credit or financing to MSMEs and consumers.

Kuunda's APIs simplify access to capital by allowing agents and merchants to top up their e-float with exact amounts needed for specific transactions, seamlessly performed with a single click within the apps they already use to manage their businesses. Its technology can also predict when an end user will need additional liquidity and pre-determine their ability to repay or transact based on the merchant's credit score. Strategic partners (mostly mobile money operators) and other FSPs can quickly and efficiently embed this facility into their offering, reducing the need for their own new product development. In turn, with access to these services, the retention of consumers on their digital platforms is improved and their activity on the platform grows.

As an embedded finance provider, Kuunda works with partners such as Copia (an e-commerce platform with over 50,000 digital-enabled agents across Kenya), M-Pesa, Airtel Money, and FINCA (a microfinance deposit-taking institution in Malawi, Tanzania and Uganda). Customer ownership stays with the strategic partner. All user flows are integrated within the strategic partners' platform, ensuring that users remain within the platform throughout the transaction, allowing instantaneous and frictionless access to liquidity. The product is white labeled for the strategic partner.

Kuunda earns revenue through a risk-reward mechanism linked to revenue generated from its loan products. As of early 2025, it had disbursed over 190 million loans to a total value of more than $1 billion to 6.1 million registered users.[113] Kuunda's model is 'capital-lite' as FSPs provide the balance sheet, and 'license-lite' as strategic partners hold the e-money licenses, while the FSPs hold the lending licenses.

[113] Kuunda website, 16 January 2025: https://www.kuunda.com/

## *Supply Chain Finance*

Another form of embedded finance is supply chain finance: short-term working capital enabled by transaction flows between actors in a value chain. MSMEs have a pivotal role in supply chains, and FIs can capitalize on a significant market opportunity in this space by focusing on this segment. The digital integration of actors in the value chain—including MSMEs, suppliers, manufacturers, and retailers/wholesalers—and the resulting availability of transaction data now provides an opportunity to meet their working capital needs.

MSMEs are present in many value chains across the African continent and, as such, are important suppliers and distributors for larger corporations and bank clients. In the cotton value chain in Ethiopia, for example, MSMEs are growers of cotton, yarn-spinners, weavers and knitters, designers and tailors, and retail clothes sellers.[114] In Tunisia, the world's fifth largest olive oil exporter, the value chain is underpinned by small-scale olive farmers and micro, small, and medium oil mills and exporters.

According to IFC research, the estimated market value of supply chain finance is $24.8 billion in Kenya,[115] $6.6 billion in Nigeria,[116] and $5 billion in Côte d'Ivoire,[117] with MSMEs representing the largest part. In Kenya, MSMEs account for $19.3 billion of the supply chain finance market; in Nigeria they account for $3.5 billion, and in Côte d'Ivoire for $2.4 billion.

Unlocking the potential of supply chain finance requires mapping all actors and their roles across the value chain. While this may vary across different value chains, Figure 4.6 shows the primary actors along supply chains.[118]

While the size and nature of businesses can vary significantly for each role, for the purposes of this handbook, the anchor is classified as a corporate buyer/seller. Suppliers and sub-suppliers can come from a diverse range of micro and SME businesses, producing raw materials, manufactured components, or providing some form of processing to the anchor buyers, similar to the role of distributors and retailers.

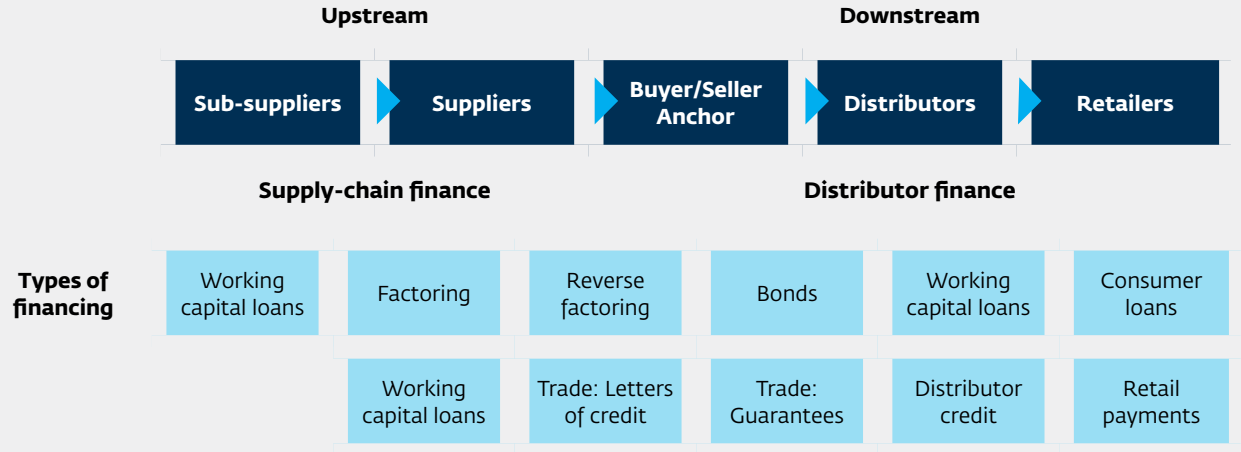


*Figure 4.6. Supply Chain Actors*

[114] https://www.ifc.org/en/insights-reports/2022/supply-chain-finance-market-assessment-kenya

[115] IFC, October 2022, Supply Chain Finance, Market Assessment, Kenya: https://www.ifc.org/en/insights-reports/2022/supply-chain-finance-market-assessment-kenya

[116] IFC, December 2022, Supply Chain Finance, Market Assessment, Nigeria: https://www.ifc.org/en/insights-reports/2022/supply-chain-finance-market-assessment-nigeria

[117] IFC, September 2022, Supply Chain Finance, Market Assessment, Cote d'Ivoire: https://www.ifc.org/en/insights-reports/2022/ifc-scf-market-assessment-cdi-2022

[118] IFC, 2020, Technology and digitization in supply chain finance handbook: https://documents1.worldbank.org/curated/en/310261613738371600/pdf/Technology-and-Digitization-in-Supply-Chain-Finance-Handbook.pdf

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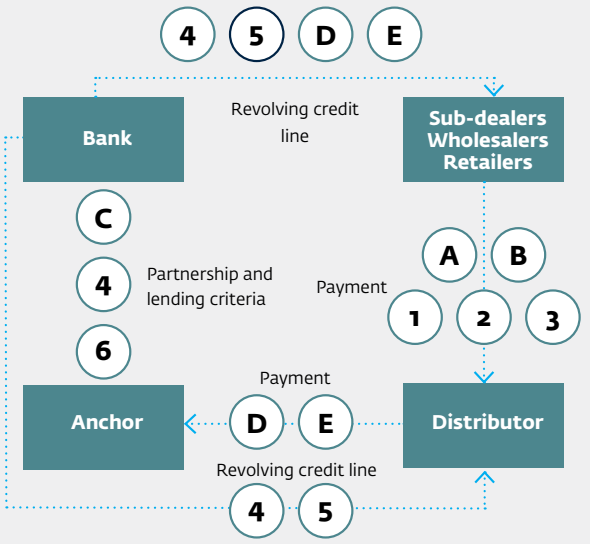


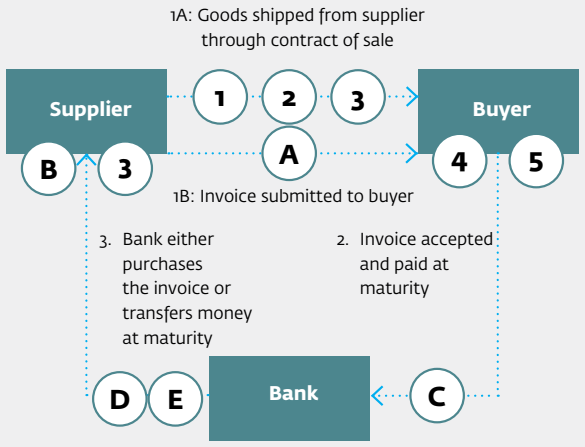

**Technology and Digitalization Solution**

A. E-invoicing — 3, 4
B. Mobile banking — 1, 2
C. SCF platforms — 4, 5, 6
D. AI and digital scorecard — 5, 6
E. Blockchain solution — 2, 3, 4

**Challenges**

1. Outreach
2. KYC
3. Fraud
4. Efficiency
5. Credit risk
6. Performance risk

*Figure 4.7. Financial Flows in Distributor Finance*

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5. Credit risk
6. Performance risk

*Figure 4.8. Supply Chain Finance Transaction Flows*

Historically, supply chain actors have relied on paper-based invoicing with limited transactional data; this has resulted in multiple risks and challenges across the flow of funds between actors in the chain. Developments in technology and digitalization now allow FSPs to transition to electronic invoicing and use transactional data to assess creditworthiness.[119] This offers the opportunity to address several challenges while increasing access to credit for MSMEs, as illustrated in Figures 4.7 and 4.8 for upstream supplier finance and downstream distributor finance.[120]

The transaction flows resulting from supply chain finance solutions should be supported by real-time information flows that can be integrated within existing processes and systems, achieving straight-through-processing and digitalization of transactions. Digitalization improves processing efficiency and enables FIs to optimize controls and measures in countering noncredit risks. For example, e-invoicing helps minimize fraud and money laundering risks, while mobile banking wallets provide a solution for loan payments to counterparties, addressing outreach challenges for supply chain partners located far from branches.

Supply chain finance solutions can take on various formats to address different challenges. Two new supply chain finance models are emerging (Figure 4.9 on page 100): platform-led and bank-led.[121] These are enabled by digital platforms that facilitate interactions

[119] Encompass (IFC), June 2017, Technology-Enabled Supply Chain Finance for Small and Medium Enterprises is a Major Growth Opportunity for Banks: https://documents1.worldbank.org/curated/en/104991502947116592/pdf/118730-BRI-EMCompass-Note-39-Supply-Chain-Financing-PUBLIC.pdf

[120] IFC, 2020, Technology and digitalization in supply chain finance handbook, Ibid.

[121] Accion, July 2022, Strategies to optimize MSME-centered supply chain finance solutions: A study of Ghana, Ethiopia, and Nigeria: https://www.accion.org/strategies-to-optimize-msme-centered-supply-chain-finance-solutions-report

between MSMEs and other actors, such as manufacturers or FIs, often providing additional value-added services.[122]

In the platform-led model (A in Figure 4.9), the platform provider finances stock on its own balance sheet rather than sharing the credit risk with a bank. The platform also typically acts as aggregator and sub-distributor by (i) aggregating MSME orders, (ii) purchasing goods in bulk from the manufacturer, and (iii) reselling to merchants on the platform. In addition to standard sales order management and distribution services, the platform also engages with the MSME, conducts underwriting, analyzes merchant data to generate a credit score, and ultimately makes the loan decision. Platform providers typically start with this model and later collaborate with partner FSPs when the demand for credit exceeds their balance sheet capacity. Examples of players using this model are Boost in Ghana, and TradeDepot and Omnibiz in Nigeria.[123]

In the bank-led model (B in Figure 4.9), the bank provides credit directly to the MSMEs to purchase stock. The platform uses the merchant's data to generate a pre-score and communicates this information to the lender. It actively manages onboarding and KYC verification, and has agents deployed to manage customer relationships and resolve issues. Examples include Jaza Duka, a partnership between Kenya Commercial Bank (KCB), Mastercard, and Fast Moving Consumer Goods (FMCG) companies such as Unilever, and Nomanini, a South African-based fintech that connects retail merchants to FIs and FMCG companies.

Although there is a clear business case for banks to explore supply chain finance solutions for MSMEs, the informality of many MSMEs continues to be a challenge in scaling solutions for the segment. Approaches such as supply chain finance that leverage existing data and relationships in value chains can be a powerful way for FIs to offer last-mile financial and other solutions to informal or hard-to-reach MSMEs. Banks looking to capitalize on this model will need to address several factors; these include well-structured partnerships, a comprehensive technical environment, and tailored value propositions:

*The technical environment* across all service providers must support a simple and efficient user experience for merchant onboarding, ideally via multiple assisted and self-service channels. It should include strong data management and analytics capabilities to support data acquisition, management, and analysis; it should also provide visibility across different parts of the value chain to partners, as needed.

*In selecting an appropriate model* and partners for the solution, FIs must select platform providers based on current capabilities, scalability of the business model, and ability to deliver on the identified value proposition for the target MSME segment. FIs may need to partner with multiple entities to deliver the capabilities required.

*Actors* must focus on addressing additional pain points such as logistics, inventory management support, and market intelligence for MSME retailers, alongside finance needs, to improve uptake and long-term adoption of the solution.

*The customer experience* must be simple and seamless; MSMEs must be shielded from the complexity of the operational integrations and orchestration required to support the integrated solution. All partners must clearly define each party's roles, responsibilities, and rules of engagement including guidelines for customer engagement and support.

*To deliver* an efficient, commercially viable model, banks and other actors must continuously assess and refine the model to find ways to reduce customer acquisition costs (e.g., by introducing MSME training and incentives for self-service, rather than assisted inventory ordering) and increase revenue per merchant (e.g., through shorter, more frequent credit cycles and bundled services).

[122] Ibid.
[123] Ibid.

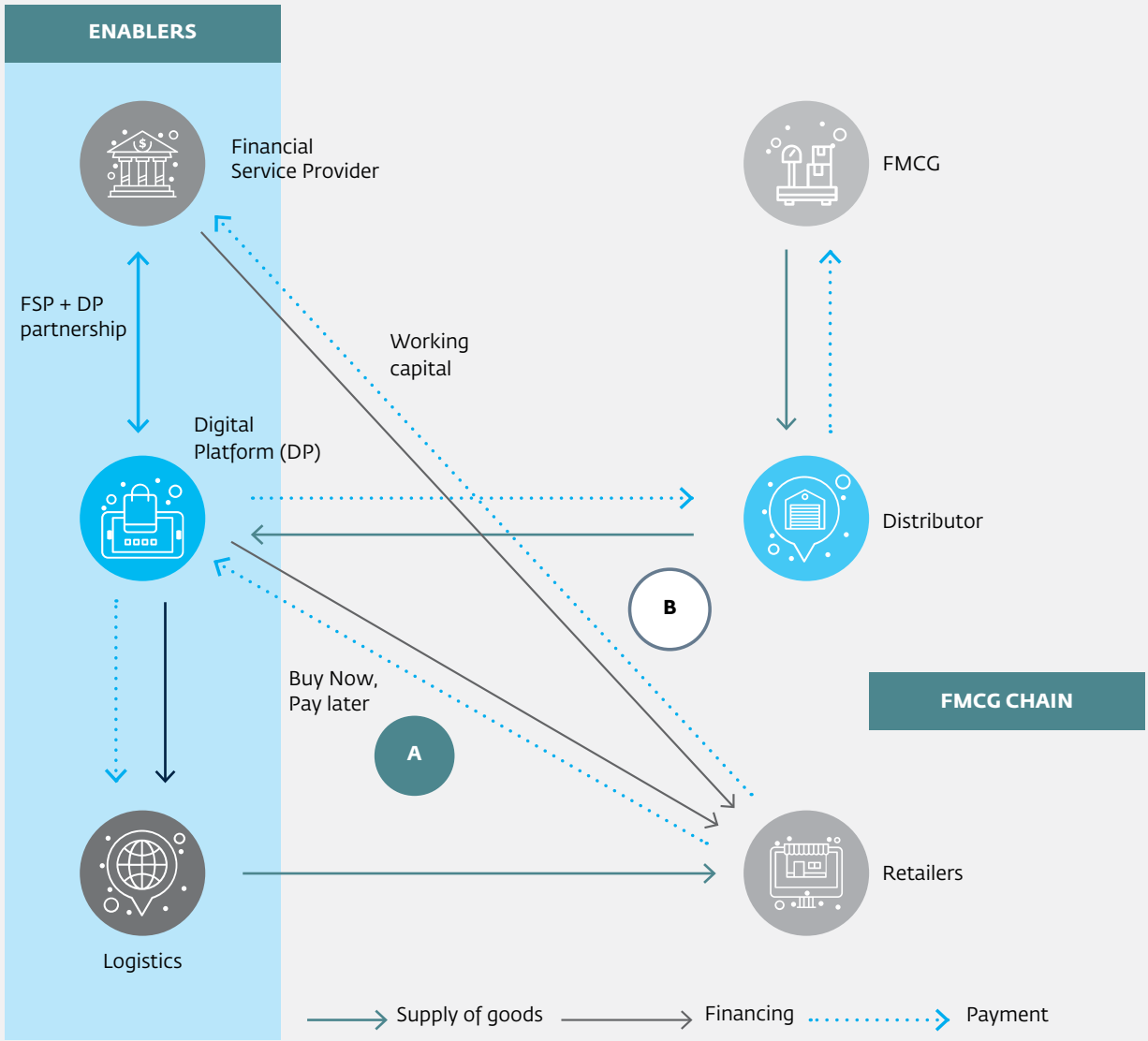


*Figure 4.9. Example of Supply Chain Finance in Fast Moving Consumer Goods Context (Source: Accion)*

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**CASE STUDY**

# *FCMB, Nigeria – Supply Chain Finance Solutions to Reach Agri-MSMEs*

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First City Monument Bank (FCMB) Limited is a member of FCMB Group Plc, which is one of the leading financial services institutions in Nigeria. Smallholder farmers represent more than 80 percent of all farming activities in Nigeria, however, they lack critical inputs that can enable them to unlock productivity and income, both of which can lead to economic and social development gains. Furthermore, land fragmentation, disrupted value chains, limited access to financial resources, and inadequate cash flow, often make smallholder production unprofitable.

FIs generally prefer not to serve this segment as it is seen as high risk because smallholders frequently lack the collateral needed to secure credit. The small size of these businesses and the cost to serve them are added challenges. FCMB collaborated with various funding partners, including IFC, African Development Bank, Mastercard Foundation, Oikocredit, USAID, and others, to expand its lending activities to this segment and scale up customized products and services.

FCMB established an aggregator model, partnering with aggregators and off-takers who already work with farmer groups. Aggregators purchase agricultural inputs in bulk and deliver them to farmers, helping to reduce input costs. They also provide storage support and offer to purchase the yields at the end of the season. By leveraging aggregators as anchor partners within the value chain, FCMB can onboard farmers in groups, engage with them effectively, and design and offer targeted credit and other financial solutions.

Through these types of partnerships, FCMB has launched targeted solutions such as its agro-commodity finance loan product and a fully digital loan product that enables farmers to apply for and get credit within minutes. FCMB has also deployed digital channels to support payment and collections to customers through agri-agents using POS terminals and USSD channels, and banking-as-a-service (BaaS) through third-party operators.

FCMB intervention programs in agribusiness financing include areas of digitalization and agtech to provide better access to finance, research, and manpower development. Through FCMB's agent banking and BaaS platform, farmers can access the agri value-chain platform, which is designed to analyze the seasonality of incomes and address the seasonal financial needs of farmers.

FCMB provides nonfinancial services in collaboration with local community-based organizations, farmer cooperatives, and government agencies. This includes capacity building for smallholder farmers in technical, business management, financial, and digital literacy skills. The bank is also actively promoting women's participation in the value chain through gender-focused initiatives, promoting savings, improving female financial literacy, and reducing dependency.

This enables farmers access to credit facilities and agricultural loans, as well as high-quality inputs, equipment, and markets, and empowers them to improve the yield and quality of the produce through hands-on training from the aggregators.

By 2023, the agri sector, including MSMEs, accounted for up to 15.7 percent of the bank's entire portfolio, with a nonperforming loan (NPL) rate of 1.1 percent and an average annual growth rate of 37 percent. Under the Mastercard program, FCMB has reached over 31,000 farmers, 69 percent of whom are female and 64 percent youth. The capacity-building support provided by FCMB has resulted in a significant increase in the farmers' productivity and profitability, with results 2 to 2.5 times higher than the national average.

Some of the key learnings include:

> Credit guarantee and risk-sharing schemes can catalyze partnerships and solutions for critical sectors, such as agriculture.

> FIs must improve their segmentation strategies, identify key value propositions, and design appropriate business models to effectively leverage credit guarantees and development funds for portfolio growth and positive outcomes.

> Digitally enabled propositions can help lower risk and provide financial services to small businesses in a cost-effective manner.

> Bundled nonfinancial services are effective in building MSMEs' capacity, making them profitable to serve.

## *Bundling for Growth*

FSPs in Africa are realizing that to grow their MSME portfolios in a profitable and sustainable manner, they must strengthen the capabilities of their MSME clients to address the challenges that restrict access to financial services. Increasingly, FSPs are exploring ways to bundle products and services based on the overall business case for the suite, and to meet a range of MSME needs, such as merchant payments and nonfinancial services.[124]

Payment services meet a core need of MSMEs, while also creating financial transaction records that FSPs can use for credit risk assessments. Additionally, a range of nonfinancial services, which aim to support MSME clients build their business management skills and digitalize their businesses, helps improve business efficiencies, growth, and access to finance. The growth of digital communications channels has led to a significant reduction in the cost of providing nonfinancial services to a larger number of MSMEs, with the added convenience of availability of content as and when required by the MSME.

### Digital Merchant Payments: Key Gateway to Bundling Services

While digital payments for online purchases are increasing, cash remains the dominant form of making and receiving payments for 80–90 percent of transactions across Africa. In some cases, this is due to a lack of confidence and trust in digital payments, which can fail due to liquidity or connectivity issues. The growth in digital payments, however, is predicted to accelerate, especially among MSMEs. From a relatively low base, revenues from digital payments in Africa are expected to grow at an annual rate of 20 percent, reaching $40 billion in 2025,[125] with 25 percent of MSMEs expected to have an online presence by then.[126] This growth will likely be concentrated in certain markets such as Egypt, Ghana, Kenya, Nigeria, and South Africa, where digital infrastructure investment and e-commerce marketplaces are advancing. The increase in digital payments is also likely to be led by e-commerce marketplaces, as well as by MNOs and fintechs offering e-wallets.[127]

The millions of MSMEs[128] in Sub-Saharan Africa that continue to transact in cash represent an important opportunity for innovative digital payment solutions. FSPs that develop payment innovations to support the shift by MSMEs to digital payment solutions will benefit from cross-selling a wider range of digital financial services to the MSME.[129] Although digital payments often serve as an entry point to more advanced digitalization and use of formal financial services, the process is not automatic. IFC research has found that almost two thirds of firms that adopt advanced digital payment systems in the region do not adopt a second digital technology to perform business functions. Moreover, widespread adoption of digital payments does not translate into its intensive use as the most frequent payment method; only 7 percent of firms report intensive use of the advanced digital payment methods they adopted.[130]

To compete with cash, FIs will need to develop digital payment services via mobile, internet, and POS machines for their MSME clients at prices that encourage a shift away from cash. This can involve creating independent infrastructure for POS networks, which requires significant upfront investment, or partnerships with existing network service providers and e-commerce platforms. Partnerships with digital payment service providers that already have established payment networks among MSMEs, such as mobile money operators, e-commerce marketplaces, and social media platforms, should be considered to expand a provider's market linkages to these digital payment networks.

Transaction fees for digital payments tend to undermine the value proposition for both merchants and consumers. Banks may need to provide MSMEs with additional incentives to make digital payments a more compelling proposition than cash.[131] FIs should take a long-term view of revenue prospects from digital payments and focus on creating wider MSME adoption by bundling value-added services with the payment product. These bundled services can include loyalty rewards, digital financial management tools for the MSMEs' business operations, and credit products.[132] The enhanced use of digital platforms for payments by MSMEs creates a data trail which can be used to provide a reliable basis for credit

[124] IFC, 2017, Alternative Data Transforming SME Finance: https://documents1.worldbank.org/curated/en/701331497329509915/pdf/116186-WP-AlternativeFinanceReportIowres-PUBLIC.pdf

[125] McKinsey, 2022, The future of payments in Africa: https://www.mckinsey.com/~/media/mckinsey/industries/financial%20services/our%20insights/the%20future%20of%20payments%20in%20africa/the-future-of-payments-in-africa.pdf

[126] Ibid.

[127] Ibid.

[128] SME Finance Forum, 2019, MSME Economic Indicators: https://www.smefinanceforum.org/data-sites/msme-country-indicators

[129] Findex, 2021, The Global Findex Database 2021: https://openknowledge.worldbank.org/entities/publication/b74e1909-3ecf-5009-b51c-8527fc4eefeb

[130] Digital Opportunities in African Businesses, IFC, 2024, https://openknowledge.worldbank.org/server/api/core/bitstreams/e6f2cc1b-ad12-460f-9f17-ff95b69cb378/content

[131] CGAP, 2019, Digitizing Merchant Payments: Why and How: https://www.cgap.org/research/publication/digitizing-merchant-payments-why-and-how

[132] Ibid.

scoring and provision of solutions, such as unsecured credit and inventory financing for merchants. Since many MSMEs regularly face the challenge of accessing finance, bundling credit options with the digital payment product is a strategy to assist the MSME in addressing multiple pain points.[133]

## Nonfinancial Services: MSME Capacity Building and Digitalization

Nonfinancial services are business development services offered by banks that complement core MSME financial services and enable MSMEs to grow into more bankable and more profitable clients by enhancing their knowledge, skills, and overall capacity. Customer-centric nonfinancial services can improve the bank's branding and differentiation in the market, increase the cross-sell and revenue from its overall suite of MSME products and services, enhance customer retention, and reduce its MSME loan portfolio at risk. For example, the report *Non-Financial Services: The Key to Unlocking the Growth Potential of Women-led SMEs for Banks*, published by IFC and FMO in 2020, found that banks with targeted nonfinancial services offerings for women showed lower NPL rates for women-led SMEs compared with the overall SME portfolio.[134]

It finds that the business case for nonfinancial services is more long-term compared to financial products and services, but still results in a positive ROI within one to two years. Banks that have been successful in deploying nonfinancial services to MSMEs, especially women-led MSMEs, have focused on four key performance indicators: (i) increasing interest income from loans; (ii) growing share of wallet, which includes cross-sell, deposit volume, and fee income, including fees charged for nonfinancial services participation; (iii) customer loyalty; and (iv) reduced MSME loan portfolio risk. In most cases, interest income from the loan portfolio is the largest contributor to overall profitability of the MSME product suite, but all four sources of revenue have been found to individually cover the cost of providing nonfinancial services.[135]

Effective capacity-building programs and initiatives engage customers and help drive sustained uptake of digitally enabled products and services. Key implementation considerations include:

- Conducting a thorough needs assessment to understand specific customer challenges and requirements according to the customer's level of digital maturity.
- Determining the mode of delivery: will the program be delivered in person, online, or in a hybrid format?
- Local context, including language requirements.
- Degree of customization of training materials.
- Access to content: will the program be available to customers only, or to the wider MSME community?
- Partner and stakeholder engagement to inform program design and implementation within the wider community, if applicable.
- Scalability and replicability of the program or initiative.
- Establishing feedback, monitoring, and evaluation mechanisms to assess the program or initiative's impact on MSMEs' digital capabilities and business growth.

Nonfinancial services can be grouped into the following five main categories:

**Distributing business-related information,** such as relevant updates to government policy or market research on key sectors. This information can be delivered to MSMEs via websites, text messages, social media channels, publications, relationship managers, and other front-line staff. Such information can inform business owners of market opportunities that they can take advantage of by investing in a timely manner. If the business lacks sufficient capital on hand for the opportunity, the owner may seek financing from the FSP based on this information, generating a business opportunity for the FSP.

[133] Ibid.

[134] FMO and IFC, 2020, Non-Financial Services: The Key to Unlocking the Growth Potential of Women-led SMEs for Banks: https://www.ifc.org/en/insights-reports/2020/ifc-fmo-nfs-gender

[135] Ibid.

# *Box 4.*
# *Examples of Digital Financial Management Solutions for MSMEs in Nigeria*

1. ***Accounting software:*** *Paga, a Nigerian fintech, offers MSMEs a tool to automate accounting tasks and generate their own financial statements. The platform enables MSMEs to accept digital payments, make disbursements and pay bills, while providing detailed accounting records. Paga also offers merchant service APIs, allowing institutions to access transaction details and reports generated through the product.*[136] *This structured alternative data includes transaction details and accounting information considered as credible financial statements and leveraged by banks and other lenders to develop more efficient, digital loan underwriting forms. By 2022, Paga had over 19 million unique users through its consumer channels and a network of 120,000 agents across Nigeria, and had processed over $10 billion in transactions.*[137]

2. ***Inventory management****: Sabi is a Nigerian B2B marketplace that provides enabling infrastructure to power the distribution of goods and services through its inventory/sales order management and payment reconciliation tool. MSMEs can track and manage stock in real time, manage orders and payments, plan supply purchasing, and generate reports for better decision-making.*[138] *This enables MSMEs to formalize their operations and increases the ability of banks and lenders to assess their businesses, providing the necessary information to develop more efficient, digital loan underwriting processes. By August 2024, Sabi said its platform had grown to serve more than 250,000 users and had generated a gross merchant value of $1 billion.*[139]

3. ***Digital marketing:*** *Flutterwave, a U.S.-based fintech operating in over 30 African countries, has partnered with Ecobank to offer digital business and banking solutions to support business growth. This includes opportunities for MSMEs to create online stores, access free digital training through Flutterwave's Grow My Business webinar series in partnership with Ecobank, automate and digitalize operations, and access banking solutions such as cash flow management, trade support, and advisory services from Ecobank for digital marketing and business growth.*[140]

[136] Paga Merchant Service API Documentation: https://developer-docs.paga.com/docs/merchant-service-api

[137] TechCabal (Michael Ajifowoke, author), April 2022, Tayo Oviosu on Paga's evolution after 13 years and $10bn in payments processed: https://techcabal.com/2022/04/04/how-paga-evolved-with-tayo-oviosu/

[138] Digital Commerce Infrastructure: https://www.sabi.am/

[139] iTWeb (author Samuel Mungadze, Africa editor), 23 August 2024, Nigeria's Sabi aims to be Africa's business backbone: https://itweb.africa/content/KzQenvjyLyZqZd2r

[140] Flutterwave, 2021, 5 Ways the Flutterwave and Ecobank Partnership Benefits Businesses in Africa: https://flutterwave.com/us/blog/flutterwave-and-ecobank-partnership

**Business and financial education,** designed to build the knowledge and capacity of MSMEs, plays an important role in supporting the MSMEs' growth and is often provided in the form of training workshops. By offering bundled education programs, FSPs are building the capacity of MSMEs to leverage digital technologies and tools to improve operations, expand their customer base, and access new markets. The skills imparted through these services can help MSMEs become more competitive, improve their resilience and financial stability, access and use financial services more effectively, and contribute to economic growth through the expansion of their businesses.

**Advice or one-on-one mentoring** for business owners through direct interaction (either in-person or online) with knowledgeable sources, such as business coaches, accountants, and legal experts, is another form of capacity building. Several FSPs have developed mentoring programs as a value-added service in their MSME suite of products to help build resilience, improve financial management, and access finance to grow their businesses. These programs provide a range of capacity-building services, including business planning, financial management, risk management, governance, and compliance. In some cases, the program may be structured through a partnership with a training institute, an NGO, an edtech, or an investor, with the inclusion of a risk-sharing facility that enables the bank to expand access to finance for MSMEs.

**Access to networking opportunities, tools, and markets,** enabling MSME owners to explore and generate their own insights and learnings from experiences such as in-person networking events, connecting with peers and role models, recognition programs (for example, award shows that spotlight successful entrepreneurs), and exposure visits to locations where clients may wish to trade. With FIs serving a broad range of sectors and businesses of varying scale and size, such activities can help MSMEs connect with other businesses in their value chains, including large anchor corporates, assisting growth and expansion. FIs also benefit by leveraging these interactions to deepen client engagement and provide insights for enhancing product development and uptake.

**Digital financial management solutions** for cashflow and inventory management, payroll, invoicing, and accounting offered to MSME clients as part of a product suite, bundled with payment or credit products. These services offer a significant opportunity for FSPs to enhance their value to MSMEs by streamlining and digitalizing more aspects of the MSME's operations. Although these initiatives are still relatively new and unproven, many FIs recognize their potential and are leveraging partnerships with niche players or extending the capabilities of their own bespoke platforms to deliver an increasing number of business support services to MSME clients.

Most FSPs that offer nonfinancial services rely on partnerships with a range of institutions including training institutes, NGOs, and edtechs for the delivery and implementation of nonfinancial services to their MSME customers. Nonfinancial services were often only delivered through traditional channels such as in-person, classroom-style training programs, which were limited in scale. With the introduction of new digital technologies that enable the delivery of training content through smartphones, and changes in attitude to learning online, many FSPs are now able to leverage digital platforms to create and deliver such services more efficiently and at a relatively larger scale. Alternative data, AI, and machine learning are also being used to tailor and personalize nonfinancial services to the specific needs of MSMEs. Mobile applications are used to deliver digital and financial literacy training, while some banks are partnering with fintechs and other players to offer customized training programs.[141] One such example is Arifu, a Kenyan edtech that delivers customized digital training and capacity-building solutions to underserved communities in Africa.[142] The platform offers a wide range of training materials, including financial literacy and business management skills, which are designed to be accessible and relevant to low-income individuals and MSMEs. The technology-enabled approach to capacity-building allows them to reach large numbers of people at a lower cost compared to traditional in-person training, while using data analytics to track learner progress and outcomes for continuous improvement and customization of the training content. Digitalization of traditional in-person training for agri-business tools by Arifu reduced the cost of delivery from $20 to $1 per farmer.[143] Arifu also partners with FIs, agribusinesses, and other providers to develop bespoke training content for MSMEs, consistently showing improvements in key indicators for Arifu learners.[144]

[141] FMO and IFC, 2020, Non-Financial Services: The Key to Unlocking the Growth Potential of Women-led SMEs for Banks: https://www.ifc.org/en/insights-reports/2020/ifc-fmo-nfs-gender

[142] Mercy Corps, Arifu: Reaching the world's least served via mobile phone: https://www.mercycorps.org/what-we-do/ventures/arifu

[143] ASAP, Arifu: https://climateasap.org/directory/arifu/

[144] Arifu, 2022, Key Research Reports Summary Document.

**CASE STUDY**

# *Ovante - Education Technology for MSME Capacity Building*

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Accion's Ovante is a global initiative[145] to provide innovative solutions for micro entrepreneurs to build their management, financial, and digital capacities by incentivizing actual behavioral change, helping them compete in the digital world. Ovante is an edtech platform that leverages Accion's experience in providing financial skills, training, and education in Latin America, India, and Nigeria, with the goal of equipping micro entrepreneurs with the information, knowledge, skills, and tools that will support their progress.

The solution is designed using a customer-centric approach to provide an in-depth understanding of the behavioral barriers that impede micro entrepreneurs from expanding their businesses and adopting digital financial services.

On the platform, MSME users can access several programs including:

› Ovante's core capacity-building program, which enables MSMEs to adopt and use digital and financial products to support their business and personal lives, enabling behavioral change by providing focused and practical content based on the needs of the MSME. Accion has worked with FSPs in Africa, Latin America, and Asia to reach MSME beneficiaries and empower them with business knowledge and skills.

› Lola Digital, a free digital capacity-building program for young women entrepreneurs who want to expand and build their online businesses.[146] Launched in Mexico, Ecuador, Colombia, Nigeria, and India, the program modules are available in Spanish, English, and Hindi.

› COVID-19 Recovery Toolkit, which is available in Spanish, English, and Hindi, and provides micro entrepreneurs with 10 free and relevant actionable plans to navigate the pandemic and any future crisis by making use of financial services, and to facilitate the transition to digital.

Where 85 percent of the cost of a traditional education program is typically spent on delivery, Ovante's solutions are scalable, focusing on content and engagement and using a data-driven approach to better understand its users. The platform also has the capability to create efficiencies and enable new levels of standardization, customization, and adaption to different markets. Its users obtain access to tools for improving their businesses by acquiring new managerial and digital skills. With these, MSME owners can gain confidence in accessing new digital financial services, potentially breaking free from traditional beliefs and habits, which can make room for positive behavioral change.

Today, Ovante's various capacity building programs above have been rolled out in collaboration with over 21 FIs and have reached over 200,000 micro entrepreneurs, 78 percent of whom are women. The platform has successfully improved users' adoption and utilization of financial services and other tools that enhance business performance. In terms of financial services, 61 percent of users opened a new savings account, and 79 percent acquired business insurance. With respect to digital tools, 90 percent of users started using the internet for their business needs, and 69 percent opened business social media accounts. To enhance business performance tracking, 89 percent of users began separating business and personal finances, and 74 percent began using the cash flow tool in their business operations.[147]

Key lessons include:

*Specialized players, such as edtechs and training institutes, are investing in digital platforms that deliver capacity-building content for MSMEs more efficiently than in-person events and courses.*

*The design of these platforms helps instill confidence in using new skills and in changing behaviors.*

[145] Accion, 2023, Interview with Liza Guzman, Vice President.

[146] https://loladigital.org

[147] Accion, 2023, Ovante Latin America performance summary.

# 5

# Managing the *MSME* Customer

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To profitably serve MSMEs, FSPs need to tailor their customer management approach to the specific and varying needs of the MSMEs. This requires the provider to acquire a strong understanding of the customer journey and to develop and offer products and services required at each critical point. FIs that adopt a best-in-class customer management approach are able to improve profitability and return on equity.[148]

Customer management, in this context, refers broadly to the strategies and activities through which the institution and its products and services become visible to MSMEs; and how the service provider acquires these customers and manages its relationship with them over time. Previous chapters in this handbook have shown how internal and external data can be used to gain insights into the financial and business needs of MSME segments, and how products and services can be developed to meet those needs. This chapter covers the next key steps: targeting, acquiring, and managing the MSME clients using tools and practices enhanced with digitalization and the use of internal and external data.

## *Mapping the Customer Journey*

A customer journey map reflects the customer experience as they interact with an FSP and move toward completing a product purchase and use of services. Mapping the journey for key customer segments allows FSPs to visualize the process from the customer's perspective, determine critical points of interaction, and enable decision-making that leads to client acquisition, retention, and growth. FSPs can use this opportunity to review the touchpoints that customers encounter when creating and maintaining this relationship, uncovering customer preferences, and identifying the best approaches for client interactions at each stage of the customer journey.

Figure 5.1, page 112 illustrates the typical journey for an MSME customer seeking a new product or service, and the relevant activities and actions by the FSP at critical points on this journey.

The customer journey has three typical steps:

**Awareness and enquiry.** The MSME becomes aware of the FIs that serve its segment, and the products and services offered. This process can be initiated either by the MSME or the FSP through various communications channels. Traditionally, physical branch channels and the field force have been the primary channels for acquiring information. However, with increasing digitalization, websites and social media platforms are now playing a larger role in marketing, increasing visibility and lowering costs for both FSPs and MSME clients. MSMEs can more conveniently review options and compare products and services across multiple FIs, while FSPs can amplify their marketing efforts across multiple channels, acquiring MSME clients more cost-effectively.

**Applying for the product.** After the MSME owner has reviewed the available options and selected both the FSP and the product, the next step is the application, approval, and onboarding process. With MSMEs' limited ability to provide documented information to meet product application and review criteria, this is the most critical stage in the customer journey, and it has been a key limitation in MSMEs' access to financial services. With technological developments, FIs can address this information asymmetry by using data from both internal and external sources to evaluate MSME applications. While internal data can help cross-sell and upsell to existing clients, as well as reactivate dormant MSME relationships, alternative data from external sources can assist with acquiring new clients. The improved availability of data, together with digital acquisition platforms, is enabling FSPs to address other challenges in serving MSMEs, thereby reducing turnaround times for acquisition, lowering acquisition costs per client, improving credit risk assessments, and growing and managing MSME portfolio relationships.

**Transact and engage.** With the acquisition and onboarding process completed, the MSME can now initiate transactions and use the product, e.g., drawdown on credit, make and receive payments to business partners, and make loan repayments. Additionally, the MSME will also engage with the FSP for nonfinancial needs including account information and usage statements, documentation services, and feedback or complaints related to services. Each of these interactions is an opportunity for the FSP to generate information and data on MSME client behavior and to strengthen the relationship by offering additional products and services to gain share of wallet. With options for multiple physical and digital channels available to clients, it is critical for FSPs to ensure a seamless and consistent customer experience across all touchpoints. Data integration sharing across the back-end systems is critical to ensure that any data captured are available for analysis to generate a 360° customer view. A comprehensive view provides usable information to develop and enhance product offerings, strengthen the client relationship, reduce portfolio risk, and ensure profitability.

[148] IFC, 2012, Customer Management in SME Banking - A Best-in-Class Guide: https://documents1.worldbank.org/curated/en/571071468328218299/pdf/948320WP00Box30Practice0Guide0Final.pdf; IFC, 2009, The SME Banking Knowledge Guide: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/571071468328218299/customer-management-in-sme-banking-a-best-in-class-guide

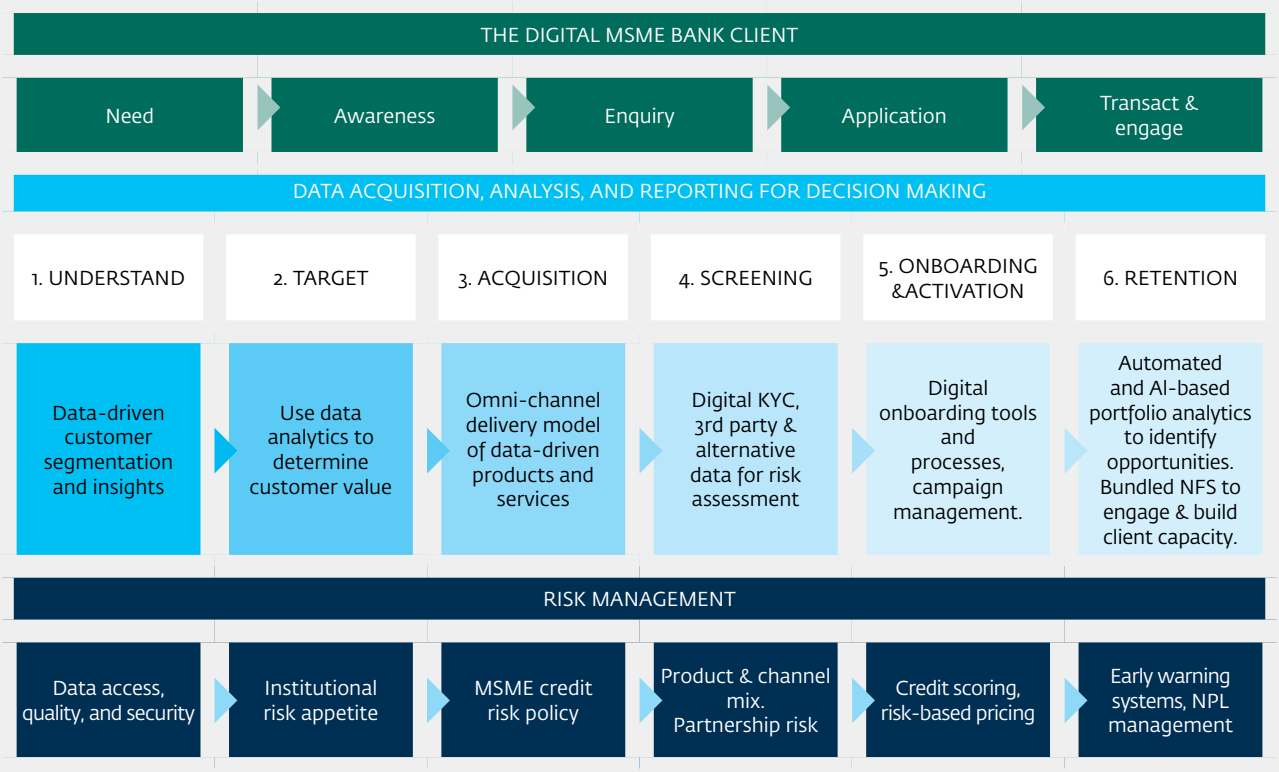


*Figure 5.1. Typical MSME Customer Journey*

# *MSME Customer Acquisition*

There are two main challenges that FSPs face in serving MSME clients: (i) cost-effective product marketing and client acquisition, and (ii) managing credit risk by effectively screening for profitable borrowers despite incomplete information.[149]

A good customer acquisition strategy should address these challenges, making more efficient use of resources by leveraging technology and data to acquire and retain MSME customers. Key focus areas include:[150]

- Targeting effectiveness
- Campaign management
- Optimize screening and onboarding

## Targeting Effectiveness

FSPs need to have a proactive approach to targeting MSMEs across all physical and digital channels, and through partnerships. Effective targeting requires a thorough understanding of the segment, its business value, and specific needs to cost-effectively reach out to prospects through the relevant channels and with the best combination of products and pricing. FSPs should prioritize outreach and acquisition activities based on client value and potential for product acceptance.

A value-model approach ensures optimal decision-making in segment and client selection, marketing strategies, credit approvals, and pricing by considering existing and future revenue potential, cost to serve, risk, and cost of capital. Effective FSPs integrate risk scoring into client and segment selection processes, improving conversion rates by reducing credit-based rejections. The increasing availability of data and new technologies to collate and analyze segment and individual MSME client data offer opportunities for FSPs to leverage this approach in building an MSME portfolio, cost-effectively targeting existing clients for cross-sell and upsell, reactivating dormant clients, and acquiring new clients.

Data analytics strengthen an FSP's capacity to realize these opportunities. For example, IFC has developed several proprietary data science tools to help FSPs leverage existing institutional data to identify and more effectively target high-potential MSME customers. These include:

**Wallet-sizing tool**—measures financial service and product needs of existing MSME customers.

**Sales-propensity tool**—estimates the probability of sales conversion and identifies high propensity leads.

**Behavioral credit scoring tool**—evaluates credit risk, based on live behavior of MSME customers.

The wallet-sizing tool draws on data collected by World Bank Enterprise Surveys[151] from more than 160,000 MSMEs in 140 countries. Using the Enterprise Survey data and institutional data on MSME customers' annual sales turnover, as well as on industry sector turnover, the model estimates the potential income, or wallet size, for each financial product and service for each customer.

The sales-propensity tool identifies which clients are likely to accept an offer of a new or additional loan, based on the idea that certain MSME profiles are more likely to engage with the FSP for specific products, and that it would be more efficient to target these customer profiles directly in sales and marketing efforts. The model uses existing customers' transaction and product data to create behavioral profiles. Using machine-learning algorithms, the model identifies the optimal combinations of these transactions and the profile precursors that most likely will lead to the customer's next product purchase.

In a pilot conducted with Kenya Commercial Bank (KCB), the wallet-sizing and sales-propensity models were used to score every MSME in the bank's portfolio for cross-sell and upsell potential. The resulting list of high-propensity customers was used to develop a targeted sales and marketing campaign to test the model outputs. To track performance, the MSME customer base was divided into four equal-size categories based on wallet share and sales propensity: very high, high, medium, and low. The pre-built models enhanced the available institutional data and generated a predictive model. By applying the tools, the bank was able to better screen and target high-potential customers and run a cost-efficient customer acquisition campaign, as described in the case study on KCB on page 116.

[149] IFC, 2009, The SME Banking Knowledge Guide: https://openknowledge.worldbank.org/entities/publication/a6a3fa0a-000b-54f4-92d9-210ca569a083

[150] Accion, 2018, Customer Acquisition Toolkit for Service Providers; IFC, 2012, Customer Management in SME Banking - A Best-in-Class Guide: https://documents1.worldbank.org/curated/en/571071468328218299/pdf/948320WP00B0x30PracticeoGuideoFinal.pdf

[151] https://www.enterprisesurveys.org/en/enterprisesurveys

**CASE STUDY**

# *Kinara – Blending Digital and Human Touch Along the Customer Journey*


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Kinara Capital is a fast-growing Indian MSME fintech company, formally qualified as a Non-Deposit-Taking Systemically Important Non-Bank Financial Company by the Reserve Bank of India. Headquartered in Bengaluru (formerly known as Bangalore), Kinara was established in 2011 and focuses on formal, registered, and banked MSMEs.

These MSMEs typically generate a monthly turnover ranging from $1,000 to $12,000 per month, have four to five employees, and operate in various sectors, including manufacturing, services, and trading. For its FY24 results, Kinara Capital reported that it had cumulatively disbursed more than 67 billion Indian rupees over 120,000 collateral-free business loans to MSMEs.[152]

Kinara offers collateral-free loans through an end-to-end digitalized process using a proprietary underwriting methodology that evaluates the creditworthiness of MSMEs based on their business performance, vintage, cash flows, and future growth potential. Its core products include:

> Working capital loans for MSMEs to cover regular business expenses such as salaries, inventory purchases, and other immediate financing needs.

> Asset finance loans to enable MSMEs, mainly in the manufacturing sector, to acquire equipment and other assets that will improve productivity and efficiency and help them service more orders.

> HerVikas business loans tailored to women entrepreneurs, featuring discounted processing fees and interest rates as well as flexible repayment options, with loan tenures of between 12–60 months. This product constitutes 11 percent of Kinara's portfolio and exemplifies the company's commitment to empowering and elevating women-owned businesses.

Kinara has been deliberate in its approach to digitalization. But unlike most fintechs that focus on digitalizing all aspects of the value chain, Kinara operates a "blended fintech" model that combines advanced technology ('high-tech') with personalized customer engagement ('high-touch') throughout the customer journey. The company combines its branch network and doorstep customer service with digital channels and capabilities, such as machine learning and AI-backed underwriting, and digital disbursements and collections. Kinara's omnichannel customer service model encompasses an in-house multilingual call center, toll-free phone lines, WhatsApp messaging, email, website, and a multilingual mobile app called myKinara.

Kinara's lending process seamlessly integrates digital channels with physical touchpoints, ensuring that every customer touchpoint, from inquiry, sales, and ongoing support through to loan closure, is with a Kinara representative. If, at any point after initiating an online loan application, the customer drops off in the process, a Kinara loan officer will call to follow up. The loan officer workflow is designed in parallel with the customer journey, ensuring that loan officers can pick up at points where customers drop off, assist as needed, and guide them back to a self-service journey. Applications that reach the credit-review stage (completed alone by the customer or with assistance from a loan officer) contain as much information as possible for analysis, streamlining the overall process and arriving at a credit decision within 24 hours. Kinara's credit-decision engine uses a proprietary underwriting methodology that ensures all processes are integrated with various tech providers, payment gateways, and credit bureaus.

Despite successfully digitalizing its underwriting process, Kinara still incorporates many high-touch aspects of the traditional microfinance model in its operations, such as in-person visits and dedicated support for customers with limited digital proficiency. Kinara's call center agents place a welcome call after a client has been onboarded and screened, and remain available to help guide customers through loan approvals and disbursements. Loan officers also conduct loan appraisal visits and periodic check-ins to review loan utilization and ESG compliance, emphasizing to customers that they are engaging with a supportive entity rather than a faceless organization. These visits and check-ins also provide opportunities for loan officers to seek and gain referrals, creating an additional source of high-quality leads to support customer acquisition efforts.

Kinara Capital's success at balancing high-tech with the human touch has contributed to its significant growth—from FY2022 to Q3-FY2024, Kinara Capital's assets under management scaled up by 150 percent. In fiscal year 2023, Kinara's profits marked a 182 percent year-over-year increase. In the first half of fiscal year 2024, the company's profitability stood at 91 percent of its annual profits for fiscal year 2023. By 2024, Kinara Capital had disbursed $900 million through 100,000 collateral-free business loans, supporting over 70,000 MSME entrepreneurs in India. Kinara will have cumulatively disbursed over $1 billion by year-end 2024, and aims to reach 500 percent growth by 2025.

Key lessons include:

*MSMEs still value personal interaction, along with speed and convenience. While access to collateral-free loans and fast turnaround times attract customers to the institution, the human touch helps retain them.*

*Close monitoring and documentation of interactions along the customer journey can provide real clues to friction points and opportunities for resolving these for a better customer experience.*

[152] Kinara press release, 15 May, 2024: https://kinaracapital.com/news/kinara-capital-releases-fy24-financial-year-results-records-9th-consecutive-year-of-profitability/

**CASE STUDY**

# *KCB – A Data-Driven Approach for Efficient Cross-sell and Upsell*

Founded in 1896, KCB Group is one of the largest and oldest FIs in East Africa, headquartered in Nairobi, Kenya. The banking group provides a wide range of banking and financial services to individuals, MSMEs, corporates, and government institutions. It serves over 38 million customers, and holds assets to a value of 2.2 trillion Kenya shillings (KES), customer deposits of KES 1.7 trillion, and a net loan portfolio totaling KES 1.1 trillion (as of full year 2023).[153]

In 2021, KCB piloted two of IFC's data science tools—wallet-sizing and sales-propensity—to improve the bank's ability to target existing and new MSME customers for new loans. The tools used KCB's internal core system data on customer profiles and transaction history to develop outcomes. At the start of the project, the bank had about 110,000 active MSME customers, with almost all having a transaction or deposit account; only about 10 percent, or fewer than 10,000 customers, had a loan. KCB intended to grow its MSME loan book significantly, by cross-selling and upselling to existing non-borrowing MSME clients. The aim was to expand the bank's MSME business to account for 50 percent of retail bank profitability, positioning KCB as "the number one business banking service provider in Kenya." The pilot study ran in branches over a four-month period, during which KCB also implemented capacity building programs to train its field force in using the analytical output for driving sales.

The sales campaigns supported by the tools resulted in 3,510 new and additional MSME loans to a total value of about $30 million over a period of four months. Importantly, the campaign produced a low uptake of offers to a low value in the low segment, and then progressively higher uptake and larger loans in the medium, high and very high segments.

Key learnings include:

*New data analytics tools and alternative data sources can help bridge MSME data gaps, even when using standard core system data and readily available third-party data.*

*CRM systems can be enhanced with data analytics tools that automatically personalize offers to clients, ensuring they are beneficial for both the institution and the client.*

*Smaller-scale pilots offer a low-risk option for FIs to test the efficacy of new tools and technologies.*

[153] KCB, Integrated Report and Financial Statements, 2023.

## Campaign Management

Acquiring new MSME clients requires a proactive and targeted campaign management strategy across multiple channels. This approach should focus on attracting new potential clients while also cross-selling and upselling to existing ones. Generally, MSMEs are not well appraised of the products and services available in the market, and how they can benefit from them. As a result of low awareness levels, they are also less likely to be actively seeking banking products and services, requiring FSPs to develop communications and outreach strategies to create awareness and acquire MSME clients.

Traditionally, FSPs have relied on direct selling through their field force and branch network to approach and acquire MSME clients, both of which are high-cost acquisition channels. To address this challenge, best-practice FSPs are increasingly using digital and self-service channels to engage MSME customers, globally and across Africa. These can include a mix of:

> Websites—digital hubs for comprehensive company and product information and Frequently Asked Questions (FAQ).

> Mobile apps—allow customers to transact on-the-go.

> AI-powered chatbots—offer immediate responses to customer inquiries and handle basic tasks.

> Live chat and instant messaging—allow customers to connect with support agents in real-time as an alternative to phone calls and emails.

> Social media platforms—to engage and service customers directly, including addressing inquiries and complaints.

> Interactive Voice Response (IVR) and voice assistants—provide an option for voice-activated interactions.

Integrating digital channels with traditional channels will generate more value for the customer and provider alike. Additionally, FSPs can now run targeted campaigns using a more optimal mix of channels to reduce the costs of acquisition. This includes digitalization of processes for field staff, use of digital marketing channels, and creating partnerships to access targeted MSME segments.

**By digitalizing the sales process** and providing field staff with mobile devices connected to the FSP's system, FIs can provide on-the-go access to customer information and institutional tools to process loan applications more quickly and easily. This allows the field force to become more effective, with enhanced productivity in terms of shorter turnaround times, and more MSME clients acquired per staff.

The MSME finance brand KRED,[154] launched by Banque nationale de l'industrie (BNI) Madagascar in 2019, sends portfolio officers into the field to meet and identify potential customers. These officers go directly to MSMEs in marketplaces nationwide, using a tablet to open accounts, collect data on the business and the owner, and use scoring tools to analyze applicants' capacity to repay. The portfolio officers' ability to efficiently collect data on customer prospects, with risk management parameters built into the system, has allowed the bank to price its MSME loans competitively. Leveraging a mobile salesforce, tablet applications, and an affordable product, BNI has expanded its MSME business to cover nearly all of Madagascar in just two and a half years.

**Digital marketing,** as a way of reaching MSMEs through social media platforms, is expected to grow in importance with increased mobile phone ownership by African MSMEs. A 2023 World Bank study found that 80 percent of MSMEs surveyed (70% of which were informal and over half self-employed) in Sub-Saharan Africa own mobile phones, and two out of five use their phones regularly to communicate with suppliers and customers, signaling an opportunity for forward-thinking providers to reach and engage even informal enterprises digitally.[155] A subset of African MSMEs have also actively adopted digital solutions since

[154] https://www.kred.mg/

[155] Atiyas & Dutz, 2023, Digital Technology Uses among Microenterprises: Why Is Productive Use So Low across Sub-Saharan Africa? (English). Policy Research working paper 10280, World Bank Group, Washington, D.C.:https://documents1.worldbank.org/curated/en/099553001242342863/pdf/IDU03cab9d8307d8f04f0c0a82e0c1ac48d75560.pdf

COVID-19. IFC's research on COVID-19's impact on MSMEs in Côte d'Ivoire, Gambia, Guinea, Kenya, Sierra Leone, and Uganda found that 53 percent turned to digital payments and marketing solutions in response to the challenges introduced by the pandemic.[156] As MSMEs continue to go digital and grow their online presence, especially on social media, FSPs need to deploy more digital marketing campaigns to reach them. While scale and scope vary, digital marketing campaigns can be a cost-effective way to reinforce brand messaging and support the business development efforts of field staff.

Commercial International Bank (CIB), one of Egypt's largest private sector banks, launched several digital campaigns for SME banking solutions in 2022. One of the most popular of these was a series of mini episodes on social media to position the bank's SME banking solutions, using humorous depictions of common frustrations experienced by small business owners. The bank reported significant increases in online leads: 206 percent for cards and 120 percent for loans. The quality of leads also improved, resulting in a 250 percent increase from the previous year. CIB estimates that online marketing campaigns also contributed to in-branch increases in sales of cards and loans.[157]

**Partnerships with external players** engaged with MSMEs in other sectors offer a critical opportunity for FSPs to expand their reach and improve the uptake of financial products and services by MSMEs. These partnerships can be structured formally, through an acquisition or investment, a joint venture mechanism, or short-term bilateral or multi-lateral agreements.

Institutions seeking to enhance their marketing and customer acquisition strategies can enter partnerships to:

**Acquire** a segment in which the partner has a distinct advantage.

**Extend** their reach or distribution footprint.

**Leverage** an innovation or proprietary product, technology, or data that will help them grow their business.

**Develop** complementary products and services that enhance existing offerings.

For FSPs expanding into the MSME segment, collaborating with strategic partners within the broader ecosystem around MSMEs can be an effective way to reach them. This can include partners such as:

- Mobile Network Operators
- Agent banking networks
- E-commerce platforms
- Supply chain distributors
- Payment businesses
- Retailers/FMCG companies

Partnerships with these entities can help institutions lower acquisition costs, access "pre-qualified" segments, digitize data, and improve the customer experience.

The ability to identify customers that best fit the institution's priorities and products is critical for achieving strong conversion rates and maximizing efficiencies in the sales process. FSPs should set basic application pre-screening criteria to screen out applicants that will likely not qualify for credit to avoid processing bottlenecks. FSPs need to look beyond traditional data sources to inform screening criteria, verify client data and generate prospect lists, and evaluate credit risk. They can use alternative data from a number of sources including data derived from mobile devices and social media usage, utility and other bill payments, and credit bureaus. This expanded dataset can help build a more holistic profile of MSME creditworthiness, improving client selection and achieving higher application approval rates, resulting in higher efficiency and lower costs of acquisition.

FSPs can use digital tools and data for conducting KYC processes, developing credit-scoring models to help optimize their client screening and build better-performing MSME credit portfolios.

[156] IFC, February 2022, Market Bite COVID-19: Impact on MSMEs in six African countries: https://documents1.worldbank.org/curated/en/099631006242236373/pdf/IDU0893d85690d61e040f20b2220cbe93ba5efbb.pdf

[157] CIB, 2022, Annual Report: https://www.cibeg.com/-/media/project/downloads/investor-relations/ir-library/annual-reports/2022/ar22.pdf

**CASE STUDY**

# *Tyme – Partnering to Strengthen Customer Acquisition*

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Tyme Group is a digital banking group with operations in South Africa, under the brand names TymeBank, which was launched in February 2019, and GoTyme in the Philippines, launched in October 2022. In late 2024, TymeBank reported that it had reached 10 million customers and disbursed more than $600 million in funding to over 80,000 small businesses in South Africa. It had another 4 million customers in the Philippines, and was in the early stages of entering the market in Vietnam.[158] TymeBank operations in South Africa broke even in December 2023.

Tyme Group's retail partnerships show how leveraging external partners' capabilities can strengthen customer acquisition and engagement. Tyme Group partners with retailers to engage customers at scale while keeping acquisition costs low, offering unsecured SME lending products at the point of sale, with enhanced client engagement, and aiming to build out a broader MSME proposition.

For this purpose, TymeBank has developed a fully digitalized, high-tech, "phygital" (blending digital and physical) banking operation that integrates human touch and partnerships with existing retail ecosystems to acquire and engage retail customers. For MSMEs, it aims to expand its white-label merchant cash advance solution through partnerships with payment processors, e-commerce platforms, other digital platforms, and even competitor banks.

As an example, TymeBank has created partnerships with well-known South African retail outlets, such as The Foschini Group (fashion retailer), and Pick n Pay (grocery chain), to strengthen outreach in the following ways:

- Network of 1,450 digital kiosks at retail stores, typically within easy walking distance for customers, making them highly accessible.
- Ambassadors placed at kiosks to provide customer service and relevant product information to customers.
- Loyalty programs with retail partners to benefit customers.

TymeBank has also introduced South Africa's first Large Language Model chatbot to provide access to business skills development and knowledge resources for MSMEs. To expand its merchant cash advance services, in December 2022, it acquired the largest MSME digital lender in South Africa, Retail Capital, and has since expanded the model in South Africa and deployed the product in the Philippines as GoTyme.

The phygital bank operation was first implemented in February 2019 in South Africa, with TymeBank kiosks in Pick n Pay, expanding to Foschini fashion stores in July 2022. As of early 2024, TymeBank had an acquisition cost of under $4, with 80 percent of new customers acquired through the kiosks.

Key lessons include:

*Existing ecosystems can be leveraged to create large distribution networks and drive digital customer acquisition.*

*FSPs can look to other sectors for mutually beneficial relationships to enhance customer engagement and support.*

*The strategy of acquiring Retail Capital has allowed TymeBank to move quickly into the MSME lending space and to expand its lending faster in the Philippines.*

*"People don't wake up one morning thinking 'I am going to get a bank account'. So, TymeBank 'manufactures' that interaction through retail partners."*

*Rachel Freeman, Chief Growth Officer, Tyme.*

[158] Fintech Africa, 2 October 2024, TymeBank Surpasses 10 Million Users, US$400 Million in Deposits Under 6 Years: https://fintechnews.africa/44320/fintech-south-africa/tymebank-10-million-use


*©Nyani Quarmyne/IFC*

## KYC Screening Approaches for MSMEs

KYC data are a key component of traditional data, and depending on regulatory requirements, most KYC processes for FIs involve customers providing basic identity information, business details, and financial statements. Data collection for KYC has traditionally relied on manual processes, with customers required to bring in physical copies of documents which required manually inputting the data; this made the process cumbersome, time consuming, and prone to errors, with the additional challenge of collating and analyzing data from multiple sources. With emerging digital identity and e-KYC solutions, FSPs are now able to perform KYC more effectively and at a lower cost, with significant reductions in data errors and ultimately an improved customer experience. Some key developments in this area are:

*Leveraging third-party KYC data.* API integrations with third-party providers can help streamline, automate, and improve digital access to verifiable KYC customer data, Politically Exposed Persons screening, and AML transaction monitoring during onboarding and ongoing KYC tracking. This reduces data input errors and allows FIs to detect and react to changes in client data in real time when they arise.

ThisIsMe,[159] a fintech headquartered in South Africa, conducts customer due diligence to verify business information, financial licenses, creditworthiness, and directors, and check these details against government-approved databases and both local and international watch lists. Through integration, the suite of due diligence services provided by ThisIsMe includes KYC checks, AML checks, remote onboarding, and several other data validation services that help FSPs improve customer onboarding data, effectively manage risk, and ensure regulatory compliance.

*Use of biometrics technology to verify customer identity.* FSPs are leveraging biometric identification to verify a customer's identity at the point of onboarding, and to verify transactions, by comparing the customer's biometric fingerprints to existing trusted databases. This allows FSPs to onboard new MSMEs while securing verifications for future transactions and product sales.

The implementation of online biometric verification, however, requires a centralized government database (or a similar verifiable and trusted database), as found, for example, in Kenya, Nigeria, and South Africa. Kenya's National Integrated Identity Management System is a comprehensive digital identification system that provides a single source of information about Kenyan citizens and foreign residents. Similarly, Nigeria's Bank Verification Number (BVN) is a unique identification number linked to a centralized bank verification system. Nigerian FSPs can use this BVN to identify and verify customers during onboarding.[160] In South Africa, FSPs can connect directly to the Department of Home Affairs, the government body warehousing the national identification database, to validate customer biometric features.

*Use of geolocation for MSMEs with unverifiable addresses.* FSPs are sometimes faced with the challenge of verifying the physical addresses of MSMEs, especially micro and small enterprises in rural and peri-urban areas. Traditionally, this would require field staff to physically find and verify the business location, a time consuming and costly process. With developments in technology infrastructure, providers can now use geolocation technology to identify the geographical location of customers in remote areas or those with unverifiable addresses. Geolocation collects various data such as IP (internet protocol) and wi-fi addresses, radio frequency identification, and GPS and GSM cell IDs. By triangulating the data, FSPs can guide MSME clients in providing a specific location and verify its accuracy.

OkHi is a smart address-verification system, headquartered in Kenya, which enables FIs and other service providers to collect addresses and verify them as accurate. The OkHi service uses data from the customers' phone, enabling FSPs to navigate to the location for services requiring in-person interaction. In addition, the solution can notify the FSP when a customer changes address, using smartphone data. In 2022, using OkHi, Stanbic IBTC Bank, Nigeria, ran a pilot program to verify customer addresses digitally, achieving a 29 percent improvement in accuracy, a fourfold increase in speed, and a 52 percent reduction in costs.[161]

[159] https://thisisme.com/

[160] Alliance for Financial Inclusion, 2019, KYC Innovations, Financial Inclusion and Integrity In Selected AFI Member Countries: https://www.afi-global.org/sites/default/files/publications/2019-03/KYC-Innovations-Financial-Inclusion-Integrity-Selected-AFI-Member-Countries.pdf

[161] Connecting Africa, 2022, OkHi brings digital address verification to Nigeria: https://www.connectingafrica.com/author.asp?section_id=761&doc_id=773823#close-modal

## *Screening for Credit Risk Assessment*

MSME lending is distinctly different from standard commercial lending: the approaches and concepts differ from each other in terms of the potential market, credit risk evaluation, resource management, and, most importantly, the varied profiles of MSME customers. The challenges faced by MSMEs are often closely linked to those encountered by lenders in financing them, creating a complex web of issues for both parties.

Data is a key enabler and driver of credit risk management success for FSPs. The ability to collect, analyze, and effectively leverage data across all stages of the customer journey is a prerequisite for innovative MSME risk management, as covered in detail in Chapter 6. FSPs can adopt the following sequential approach to screen MSMEs for credit products:

- Rethink analytical maturity and growth
- Optimize existing data
- Introduce alternative data

**Step 1: Rethink Analytical Maturity and Growth for Better Risk Management**

FSPs can achieve immediate improvements in credit-scoring models by implementing critical processes and digital interventions to progress along the risk maturity model. For example, assessing the credit-scoring model to understand where an FSP stands in the risk-maturity model should be part of the risk strategy process, as outlined in Chapter 6. FSPs can move from the ad hoc stage to the innovative stage, depending on their position in the model (Figure 5.2.).

Legacy core banking systems generally do not have the agility and dynamism required to utilize machine learning or AI to move to the higher levels of the risk maturity stage. FIs can overcome this challenge by creating partnerships with fintechs to build the necessary analytical tools and frameworks within existing regulatory requirements. Such partnerships can enable FSPs to progress along the maturity stages and reposition themselves to drive value realization.

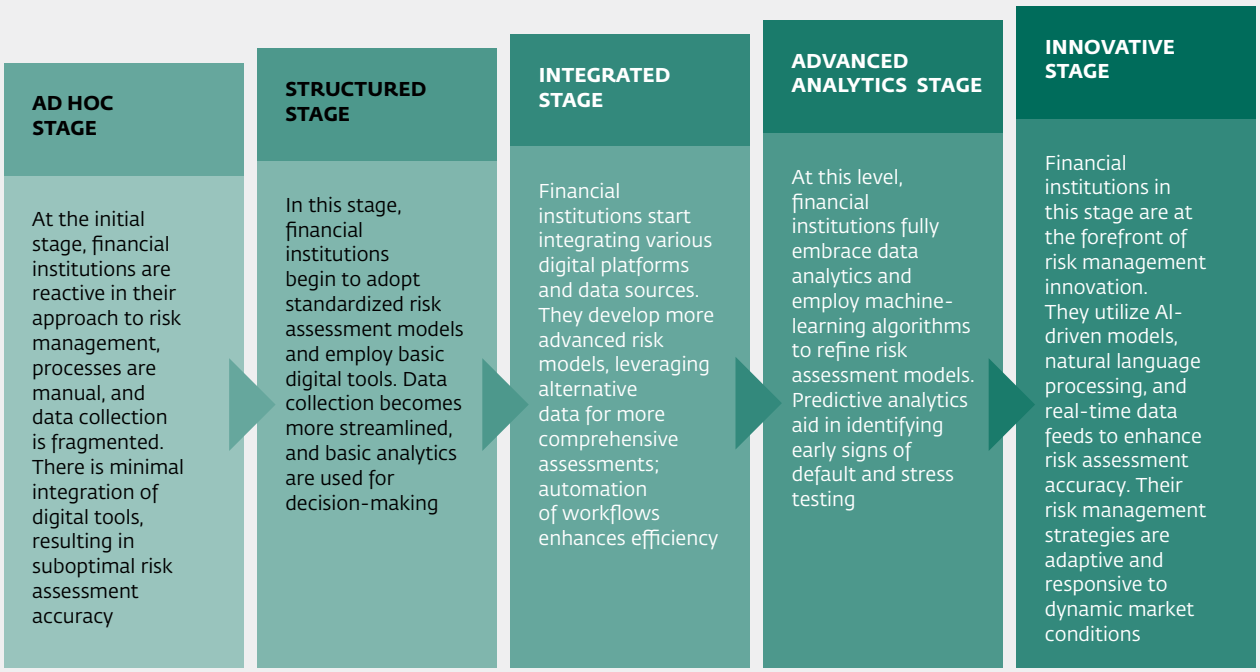


*Figure 5.2. Risk Maturity Stages*[162]

[162] Accion, 2023, adapted from internal Risk Management Practice area documentation.

**Step 2: Optimize Existing Data to Improve Credit Risk Profiling**

Many FIs have a wealth of data relating to their customers that can provide valuable insights across the customer journey if properly harnessed. For example, FIs are using existing data to build better propensity models and shift MSME customers from liability products to asset products, as well as to improve the risk profiles of MSMEs.

IFC for example, has developed a behavioral credit-scoring tool that evaluates credit risk based on changing data patterns such as frequency of deposits and withdrawals. The prospective borrower's risk classification is determined by a set of hypotheses built from consistent global and local data patterns relevant to the target portfolio. Behavioral scorecards can be incorporated into existing credit-scoring methodologies or used in instances where the available data are too limited for standard statistical scoring models.

**Step 3: Introduce and Adopt Alternative Sources of Data for Credit Underwriting**

Despite alternative data gaining ground in credit assessments, the use of this type of data is still largely experimental, with several use cases still being tested in the field to validate actual performance. A number of alternative data sources such as device data, social media, utility payments, alternative sources of income, e-commerce/supply chain activity, mobile phone operator records, geo-location, weather tracking, and credit bureaus, have been tested by multiple players to provide a more complete and precise understanding of an MSME borrower's creditworthiness. Fintechs are actively using alternative data, while banks are partnering with such fintechs to acquire innovative data-driven models.

A good example of this partnership approach is Jaza Duka, a collaboration between KCB and MasterCard. Jaza Duka is an inclusive credit ecosystem that connects small retailers, micro businesses, and FMCG companies with KCB to access short-term credit. Value chain data, specifically stock purchasing history and retail payment trends, are collected and managed through a partnership with a third-party platform. The data are used by KCB to augment its underwriting processes and assess the creditworthiness of retailers; this has allowed KCB to expand credit to the last mile of the FMCG distribution chain. By 2022, the program had surpassed KES 1.2 billion ($8.3 million) in transactions, with an average monthly sales uplift for merchants of up to 20 percent.[163]

[163] CIO Africa, 2022, Mastercard Expands Jaza Duka Micro-Credit Program: https://cioafrica.co/mastercard-expands-its-jaza-duka-micro-credit-program/

**CASE STUDY**

# *Implementing a Digital Credit Scorecard for a Bank in Africa*

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A full-service universal bank in Africa, offering a range of services spanning retail banking, SME, and corporate banking services, recently implemented digital credit scoring to address challenges faced in acquiring MSME clients and to improve portfolio quality.

The bank faced the following challenges:

› The number of delinquent loans as well as nonperforming assets were increasing in the digital SME business loan book. The portfolio quality was further affected adversely due to the impact of the COVID-19 pandemic.

› A high proportion of the "good" clients were being rejected and the "bad" clients accepted, causing lost revenue and elevated credit risk. The scorecard developed by the bank's internal team was not benefitting the bank's SME portfolio, and it had never been recalibrated.

› The Bank had a large historical database of more than 10 years in their legacy system, and the data quality was reasonably good. However, the extraction mechanism needed to be revisited.

› The team had limited skills or tools to perform predictive analytics and machine learning. Hence, the scorecard that was developed internally was not based on the correct methodology or statistical techniques.

To address these challenges, the bank decided to implement an experiential coaching model to train internal teams and to develop a statistical digital credit scorecard for small unsecured SME business loans; this would enable an improved credit process and support credit decision-making along with other indicators. The bank assigned a project team, comprised of a data scientist, analysts, and representatives from the data governance, business intelligence, and credit teams, supervised by a project manager. The team was assigned the following objectives:

*Build* a digital credit scorecard for the correct assessment of incoming credit applications (i.e., "good" being classified as good and "bad" being classified as bad) and improve the portfolio quality of the digital SME credit product.

*Ensure* that the data science skills required for credit scoring are transferred to the FSP's business intelligence team throughout the project execution phase.

The project team worked over a period of three months, taking the following actions:

**Model deployment**

› The model output was handed over to the Analytics and IT team.

› The necessary process and technical changes were made in the system with respect to the variables requiring input by the user.

› The model was embedded in the legacy system through back-end coding.

› Before going live, the model was tested on a sample of cases to ensure that the back-end coding produced the correct results.

**Model calibration**

› Due to the dynamic COVID-19 scenario and short-term nature of loans, monthly recalibration was strongly recommended.

› The model was back-tested and recalibrated in subsequent months due to the ever-changing behavior of customers before, during, and after the COVID-19 pandemic.

With implementation of the credit-scoring model and its incorporation into the credit process, delinquency levels decreased by 3–5 percent month-on-month, leading to decreased Portfolio at Risk levels and improved portfolio quality.

Some of the key learnings included:

*Scorecard as an Enabler: The MSME credit scorecard supports the credit process but is not the only determinant in decision-making. Further due diligence should be conducted to establish facility purpose, business viability, and minimize/mitigate risks.*

*Skills and Attrition: FIs' business intelligence teams often lack the data science skills to implement statistical scorecards. Because of the high demand for data scientists across domains and geographies, organizations face key man risk and higher attrition rates within data science teams. Higher budgets should be allocated for hiring experienced, high-cost resources, as well as for employee retention and upskilling programs.*

*Preserve Documentation: Banks should ensure thorough documentation is completed and retained for knowledge preservation (given the high attrition rate) and for audit purposes.*

*Proper Pilot and Deployment of Scorecard: FIs should ensure correct implementation and deployment of the scorecard, and accurate score computation.*

*Digital credit scorecards: These require regular review and updating based on portfolio performance and changing market conditions. Credit portfolio performance should be tracked on an ongoing basis, and insights from this analysis should be used to periodically review and recalibrate the scorecard.*

## Using Alternative Data for Credit Scoring

The following actions can be helpful in assessing the types of alternative data that may be useful to leverage for credit scoring:

**Coverage.** A data source should ideally have broad and stable coverage (for example, data generated by mobile phone usage).

**Specificity.** The data source should contain detailed information about the individual/business applying for a loan (e.g., timely/late payments over a particular time period, income data).

**Accuracy and timeliness.** The data considered must be accurate and updated frequently.

**Predictive power.** The information should be relevant to the specific consumer behavior being assessed.

Examples of data sources that add value to credit assessments for MSMEs, together with their corresponding attributes, might include (non-exhaustive, and for reference only):

**Device data.** This includes information from smartphones, tablets, and computers for analysis of factors such as device type, operating system, usage patterns, and geolocation data. As an example, the model might consider whether the applicant's device is frequently used in locations that correspond with their stated address, enhancing the credibility of information provided.

**Utility payments.** Timely payment of utility bills demonstrates financial responsibility. The model looks at the consistency and frequency of utility bill payments. Regular and punctual payments might indicate stability and a strong likelihood of repaying a loan.

**Banking transactions.** Analyzing banking transactions offers a deeper understanding of an individual's financial habits. The model can identify patterns of income, spending, and saving. Large and frequent deposits could signify a reliable income source, while excessive spending might raise concerns about repayment capacity.

**Online presence.** Social media activity, website traffic, and online reviews can indicate business reputation and customer engagement.

**E-commerce variables.** Online shopping patterns and payment history can provide insights into an applicant's spending behavior and reliability. The model may examine the frequency of online purchases, the types of products bought, and the use of various payment methods.

Integrating alternative data sources for MSME lending should be a strategic decision that enhances credit assessment accuracy, supporting digitalization and automation, and leading to better inclusion rates.

Kuunda is an example of one such approach. The company started operations in Tanzania in 2018 as a fully digital finance business, employing an embedded approach to its credit processes (see Case Study on page 94). Kuunda leverages various partnerships, for example with Copia, Mpesa, and FINCA. Based on these partnerships, Kuunda has designed products that focus on transaction-based lending solutions which can fund a specific transaction in real time, rather than classic consumption-based term loans. Kuunda accesses real-time behavioral data and transactional patterns of agents via channel partners' existing infrastructure and networks, and uses these data points to determine creditworthiness. Over time, the company has developed expertise in acquiring and leveraging multiple transaction data points from various partners, integrating them into its behavioral credit-scoring model. By November 2023, Kuunda had cumulatively disbursed over $1.1 billion to 132,000 active MSME clients and to more than five million active consumers, with a 0.9 percent default rate.

In Africa, FSPs are increasingly using credit bureau data as a key input for credit assessments. There is a growing trend where alternative data aggregators/actors are working with credit bureaus to strengthen algorithms and build new and innovative products to extend financing to "thin" file and new-to-credit customers. Credit bureaus in many parts of the world are also focusing on custom data analytics and forming multiple partnerships with government data sources, central banks, and fintech companies to leverage alternative data.

As an example, TransUnion CIBIL in India, in collaboration with Online PSB Loans Limited, launched FIT (Finance, Income & Trade) Rank, a comprehensive ranking model for MSMEs.[164] FIT Rank triangulates information from multiple sources to provide a unified view of financial, income, and trade data for an MSME, enabling risk differentiation and credit underwriting for MSME loans. It leverages data from goods and services tax, bank statements, and income tax returns to provide a ranking model for MSME lending. The model uses machine learning algorithms to predict the probability of an MSME becoming a nonperforming asset in the next twelve months.[165] FIT Rank provides a ranking for the MSME on a scale of 1 to 10, with 1 representing the least risky MSME and 10 the most at-risk MSME. This credit default predictor model has been made possible due to improved digitalization of data within the industry and through other partners.

[164] TransUnion, 2022, Under SIDBI's Mentorship, FIT Rank for MSMEs Launched by TransUnion CIBIL and Online PSB Loans Limited (OPL): https://newsroom.transunioncibil.com/under-sidbis-mentorship-fit-rank-for-msmes-launched-by-transunion-cibil-and-online-psb-loans-limited-opl/

[165] ETCFO, 2022, CIBIL, SIDBI, Online PSB loans launch MSME rankings: https://cfo.economictimes.indiatimes.com/news/cibil-sidbi-online-psb-loans-launch-msme-rankings/96396801

## Incorporating Alternative Data into Credit Decisioning

FSPs can use a variety of approaches for integrating data points from different sources to develop a scoring model. One approach is to use a mix of traditional core system data, and alternative and credit bureau data to generate comprehensive credit scores for MSMEs. Two different perspectives exist on the best approach to incorporate the various data sources. The first suggests an approach where all data from the different sources are analyzed using machine learning techniques to build a unified model. The second, in contrast, supports flexibility in adapting alternative data sources, particularly in situations where some sources may be offline or business costs to procure the data are high (see Figure 5.3).

MSME lenders can use the approach outlined in Figure 5.3 for incorporating alternative data sources using the following steps:

**Identify relevant alternative data sources.** Identify the data sources based on pre-defined criteria that can provide valuable insights into the financial health and creditworthiness of the target MSME segment.

**Collect and integrate the data.** Create a process to collect and integrate the data into the credit assessment process. This may involve API integrations, data partnerships, and data cleansing to ensure accuracy and consistency. This step requires careful consideration of data privacy, ethical concerns, and compliance with regulations. Transparency and clear communication with borrowers regarding the data used in the lending process are crucial for building trust.

**Validate the data.** Validate the accuracy and reliability of the data by cross-referencing multiple sources to ensure consistency and identify any discrepancies.

**Perform feature engineering.** Transform the raw data into meaningful features that can be used in credit-scoring models to analyze spending patterns and create, for example, behavioral indicators such as debt-to-income ratios.

**Develop new or enhance existing credit models.** FIs can either develop new credit-scoring models or enhance existing ones to include alternative data features. Machine-learning algorithms, such as decision trees, random forests, or gradient boosting, can help to effectively weigh and analyze these features. In standard approaches, principles of data depth, coverage, and availability provide risk managers direction about how to use appropriate algorithms, however a clear strategy should be defined when deploying advanced algorithms. This has led some FIs to build challenger models using multiple techniques, ensuring flexibility for rapid deployment as technology stacks are upgraded or improved.

**Test and validate performance.** Test the new models using historical data to evaluate their performance and predictive accuracy, adjusting and fine-tuning as necessary.

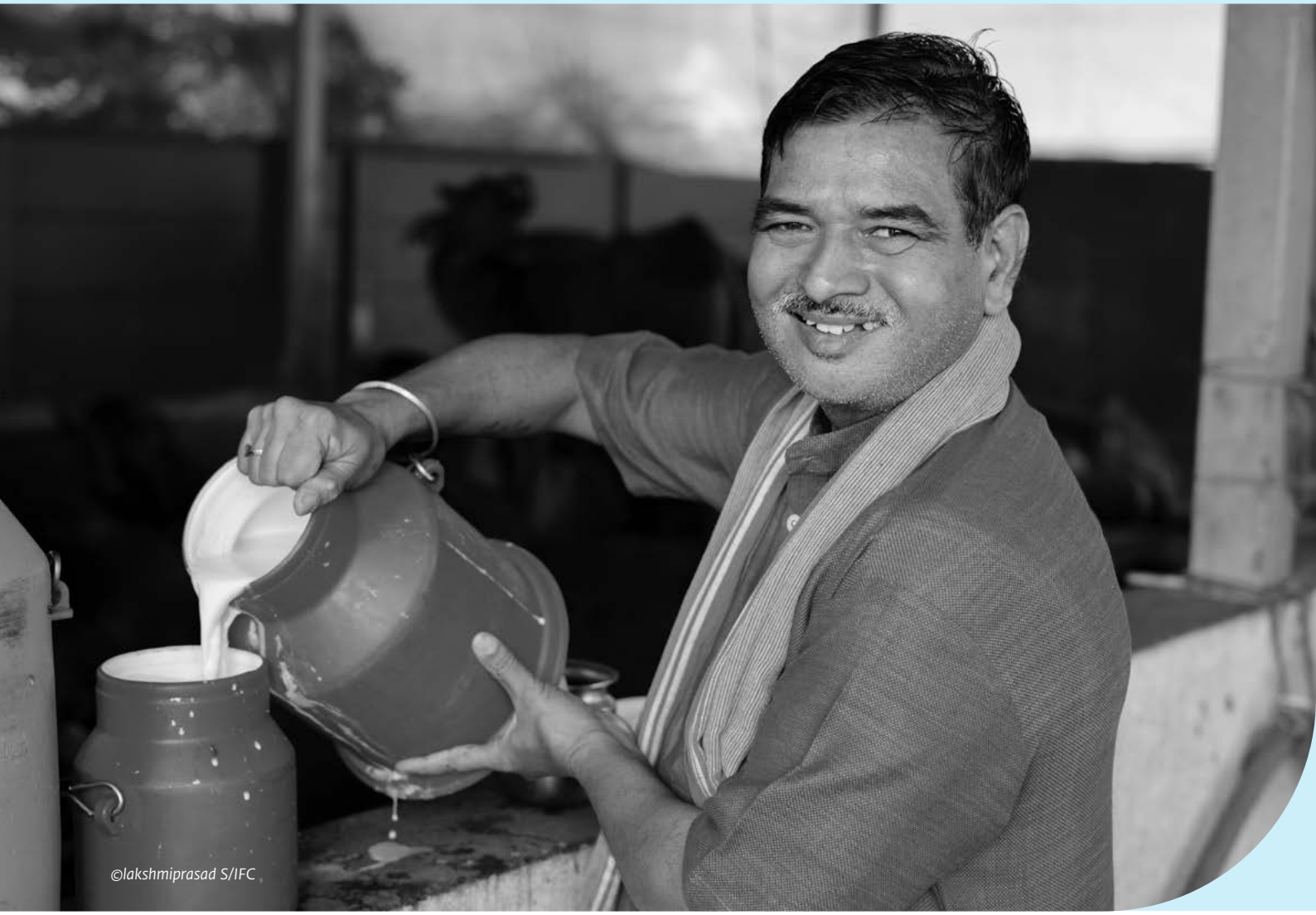
**Implement in a gradual manner.** Rollout of the new credit assessment approach should be gradual. Start by using alternative data sources as supplementary inputs to existing scoring models, gradually increasing their decision weight in the new model as confidence is gained in credit decisions.

**Monitor and iterate.** Continuously monitor the performance by collecting feedback, tracking repayment behaviors, and refining the models based on real-world outcomes. Iterative improvements will help fine-tune the integration of alternative data sources.


*Figure 5.3. Use of Alternative Data in the Credit-Scoring Process*

**CASE STUDY**

# *Dvara KGFS, India – Field Based Data Collection for Credit Scoring*



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Dvara KGFS was incorporated in August 2008 by Dvara Trust, a private trust in India set up with the mission "to maximize the financial well-being of every individual and every enterprise by providing complete access to financial services." The company works toward achieving this goal through its network of branches in India's remote rural areas, offering a range of financial products and services.

Dvara focuses on small, rural value chains for groceries and retail stores, as well as for dairy farmers. The challenges with serving these segments are the lack of data and documentation, making it difficult to assess their creditworthiness. This market segment also has two primary behavioral challenges – trust and choices that require trade-offs between present and future benefits.

The current goal of the institution is to automate the valuation of MSME's assets and business stock using technology to make the credit assessment process more efficient. Simultaneously, the goal is to use the optimal mix of technology and human touch to address behavioral challenges in the segment.

To this end, Dvara KGFS has implemented an "assisted tech" model where loan officers use a mobile app to collect primary data (e.g., sales, product information) directly from clients in the field. The data are then analyzed using industry benchmarks, together with Dvara's internal data on similar businesses and credit bureau information, to estimate the customer's creditworthiness. This approach has yielded the following results:

**Reduced turnaround time.** Loan applications are now processed in two days, compared to the previous 7–8 days.

**Data-driven decision-making.** Data-backed assessments lead to more informed lending decisions, reducing risk and improving loan approval rates.

**Increased access to finance.** Faster and more efficient credit assessment empowers rural entrepreneurs to access the capital they need to grow.

**Increased loan portfolio.** Up by about 57 percent in fiscal year 2023, compared to the previous year.

**Improved customer satisfaction.** Customers more satisfied with the loan application process.

**Marginal increase in operational costs.** Up by 0.39 percent in fiscal year 2023 against the previous year.

CASE STUDY

# *CrediLinq.Ai – Credit Decisioning Using E-Commerce Partner Data*

CrediLinq.Ai is a global B2B technology infrastructure company that enables digital platforms to offer white-labeled embedded financing to MSME customers transacting on their platforms. The company's credit algorithm uses alternative data for credit risk assessment to offer growth capital to MSMEs at point of need. The company is headquartered in Singapore and was established in 2021.

In the post-COVID-19 era, there has been an accelerated shift of transactions from offline to online modes, resulting in MSMEs beginning to generate a significant digital financial footprint. These data, generated by businesses buying and selling on platforms, can be used to develop smart AI-led credit algorithms that can assess the creditworthiness of an MSME with a significant degree of accuracy. The digital lending product offerings are made available on partner platforms, at checkout. User experience is paramount, and the solution is delivered to the MSME without leaving the partner site through seamless and convenient integration options. CrediLinq integrates and consumes the transaction data available on the platform, processing it and computing the creditworthiness of the platform users employing its proprietary AI-based decisioning models.

The credit infrastructure facilitates a quick go-to-market process with a customized embedded finance solution that suits the partner and their customers. CrediLinq provides the technology and credit expertise to underwrite such loans, using alternative data sourced from partners and any other digital data source available in the market. CrediLinq uses hundreds of data points, subdivided into two types, for a 360° view of MSME clients:

**Quantitative data**—transaction data, net settlement data, payment history, margins on products, and discounting practices.

**Qualitative data**—internal reviews, complaints, customer ratings, and the quality of products.

Traditional data sources, such as credit bureau scores or even formal documentation, provide supplementary insights when available and needed.

When evaluating each credit application, CrediLinq.AI meticulously extracts and analyzes 6–12 months of historical data. The data are scrutinized for insights into the nature of the applicant's business, historical transaction behavior, and other relevant metrics, allowing informed decisions regarding loan amount, pricing, and the probability of default. Unlike static models, the AI-driven credit-scoring system is dynamic and responsive. It undergoes a thorough review every six months, where the data points are fine tuned to ensure that the algorithm remains aligned with current market realities and adapts to changing conditions or fluctuations. This commitment to ongoing refinement ensures that CrediLinq consistently provides accurate and up-to-date credit assessments.

CrediLinq.AI works with platforms in four main verticals to offer embedded financing: e-commerce platforms, supply chain financing, payment processors, and procurement platforms.

Typical use cases are for:

**Sellers.** Sellers can access capital immediately based on their current sales to restock their inventory without waiting for the standard settlement cycle from the platform. Usually works for e-commerce platforms where sellers are awaiting payment from the platform.

**Buyers.** Merchants can make additional purchases on procurement platforms to meet demand, with the supplier receiving immediate payment, while the MSME settles the invoice at a future date to suit their working capital needs.

**Invoice financing.** The solution works for platforms that enable invoicing on the platform; merchants need to finance recent invoices, with the ability to choose payment terms of 30, 60, or 90 days, depending on their cash conversion cycle.

**Early wage access.** Businesses can optimize their working capital by funding part of their payroll using the embedded finance solution, or enabling gig workers to get paid immediately, instead of waiting for payday.

The product parameters are easily configured to meet the needs of the MSMEs, and CrediLinq's credit infrastructure can quickly deploy different product constructs such as instalment loans, short-term loans, and bullet repayments. The onboarding process is seamless and leverages existing merchant data to minimize data entry. The solution is configured to allow MSMEs to select convenient terms for financing and give consent for the algorithm to access their data. If approved, the MSME gets instant feedback on the amount of credit that can be made available and the pricing. Following this, the standard know-your-business (KYB) and KYC requirements are completed digitally, where available, and the loan is disbursed promptly by the funding partner.

CrediLinq has eight live platforms in Singapore, Malaysia, Indonesia, Hong Kong, and Australia, with plans underway to expand into the United States and the United Kingdom. The company's automated approval processes have significantly increased efficiency in the lending system: by utilizing advanced algorithms and data analysis, the waiting time for loan approval by banks and FIs has been reduced from between seven to 10 days, to less than 24 hours. Since 2021, CrediLinq.AI has disbursed more than $30 million in growth capital in these markets.

Key lessons include:

*Alternative data are a strong substitute for FIs where traditional data are limited. Robust monitoring is required to identify red flags and initiate early action.*

*MSME transactions must happen on the platform to be verifiable and auditable. The data should be digitally extracted and sent via APIs on a regular basis to ensure data integrity. Depending on platform sophistication, platform partners must have a mature platform, and the minimum data elements required to make the process viable.*

*The process must be fully automated or minimize, as much as possible, manual interventions. Manual intervention leaves room for fraud, improper assessments, and delayed turnaround times.*

## Customer Onboarding

Customer onboarding is the process through which FSPs introduce and integrate new clients into their franchise.[166] The onboarding process for a new MSME client is often their first experience of working with an FSP—and possibly their first exposure to formal financial services. The process, therefore, plays an important role in communicating trust and customer care. For MSMEs, the speed of processing and the ease of doing business with an FSP are of critical importance. Efficient account opening and swift loan disbursal ensure they receive services or funds when needed, highlighting the importance of convenience and quick turnaround times.

Good-practice FSPs ensure a seamless onboarding experience by automating the end-to-end process from application and document submission to approvals and disbursals. This is achieved through digitalization of standardized application formats aligned to specific MSME segments, and integration of front- and back-end systems. It is important that the FSP keeps the MSME applicant fully informed during the application review process to manage customer experience and expectations; this can be achieved by sharing updates through digital communications (e.g., email or text messaging). The integration of the client should include registration and activation of services on the FSP's digital service and communication channels—email, internet banking, mobile banking, SMS services, and call center services.

Onboarding is the start of a potentially long-term relationship that offers the FSP the opportunity to increase its share of wallet and grow the business with the MSME client. At entry point, the MSME may not be fully aware of the complete range of products and services available to meet their present and future needs. They may also not know how to engage with the FSP for related services such as financial and nonfinancial transactions and complaint resolution. A welcome package introducing the products and services relevant to MSME needs, the policies related to MSME client management, as well as customer service channels and processes, should be shared immediately. This used to be a costly activity involving printed brochures and folders but is now significantly more economical with digitalization. Digitally designed packages can be emailed to newly onboarded MSME clients and can also be uploaded and made available on the provider's website and mobile applications. This makes it significantly more convenient for MSMEs to access information, learn about available products and services, and engage with the FSP.

## Activation and Retention

Activation and retention strategies aim to actively manage the FSP's interaction and engagement with the MSME client throughout the customer lifecycle. Activation approaches are designed to identify MSMEs that have not utilized services or transacted for some time, usually six months or more, and can be considered dormant clients. Such clients may have shifted to a competing service provider for several possible reasons: for example, a better product or service, better pricing, or service-related issues. With regular review of the MSME client portfolio, and monitoring of transaction behaviors, FSPs can identify

[166] IFC, 2012, Customer Management in SME Banking, A Best in Class Guide: https://documents1.worldbank.org/curated/en/571071468328218299/pdf/948320WP00Box30PracticeGuideFinal.pdf

dormant clients that have potential for reactivation. Regular monitoring and analysis of transaction behaviors can also help identify clients that are reducing product use and could be likely to leave the provider. A reduction in the number and value of transactions, for example, can be an indicator of a client leaving or facing financial difficulties in business. Proactive FSPs will have structured processes in place to identify such clients and engage in either reactivation or retention activities.

The increasing availability of digital technologies for service delivery and customer management is improving the ability of FIs to track and monitor their client interactions and behaviors more efficiently, to better manage relationships. For example, CRM systems are used to actively monitor and manage MSME client portfolios and improve activation and retention of MSME clients. CRM systems have digitalized and evolved over the years to incorporate more advanced data analytical capabilities. The modern CRM system is a central repository of customer data collected from internal, external, digital, and physical sources that can provide a 360° view of customers, helping prioritize those customers with a higher likelihood of reactivating and adopting additional products and services.

This enhanced view of the customer can pinpoint cross-sell or upsell opportunities to support sales, engagement, and retention. Key CRM system functionalities include:

**360° Customer View**—analyze customer data for opportunities to cross-sell and upsell products.

**Campaigns Management**—organize specific marketing, collections, or other campaigns, and track campaign productivity based on analytics and requirements.

**Lead Generation to Closure**—track leads sourced from various channels and assign leads to different verticals or departments for follow-ups.

**Incentives Management**—calculate and manage incentives across teams based on management responsibilities and performance, e.g., for inside sales and field staff.

**Customer Servicing and Ticketing System**—track customer service requests and complaints from initiation through to resolution.

While a full-featured CRM system with all the desired functionalities may not be feasible initially, ongoing investment is critical to realizing its potential for maximizing profitability. Data from the CRM system and other institutional sources can identify opportunities to cross-sell and upsell, increasing customer wallet share, generating more revenue, and enhancing customer retention. MSMEs having multiproduct relationships with FSPs are less likely to leave the relationship compared to single-product clients.

Reactivation and retention activities should be part of a broader, event-driven marketing strategy that generates predefined actions when needed. The MSME can be sent offers of new and relevant products more in line with their needs, or special

reactivation and retention offers based on pricing or product bundles. Digitalization and data analysis allow FSPs to analyze client portfolios and assign scores to clients and client segments for targeting reactivation and retention offers, as demonstrated earlier in the KCB Kenya Case Study (see page 116). Similarly, MSME clients can be sent pre-approved renewal offers based on credit performance scores, to proactively engage with them and ensure retention. Analyzing wallet size and client behavior can enable targeted and efficient campaigns that boost cross-sell and upsell opportunities.

Bundling financial and nonfinancial services such as training, networking opportunities, and advisory can help FSPs acquire new MSME clients and deepen the relationship with their existing MSME clients to enhance retention. As seen earlier (see Figure 3.5), MSMEs in Africa have shown a clear need and desire for advisory and capacity-building support in multiple areas. These capability gaps are some of the key challenges to MSMEs' access to formal financial services and business growth. With education and business advisory support, MSME clients can enhance their business management skills and capitalize on opportunities for growth. In turn, this can translate into portfolio and revenue growth for the FSP.

With the fast-evolving digital ecosystem, one of the major areas, as mentioned earlier, is building the capability of MSMEs to digitalize their business operations and access digital markets and financial services. FSPs can build their MSME client's digital capability through training programs and by providing access to digital tools. Such tools can create a source of verifiable financial data on the MSME, leading to opportunities to sell more financial products and services.

## *Optimizing Collections*

Collections include all activities necessary to recover unpaid debts from MSME borrowing clients. Effective collections from MSMEs require timely identification of problematic situations through regular monitoring of credit quality, and taking measures before the MSME client becomes delinquent.[167] FSPs can use several data analytics methods to predict an MSME client's potential repayment behavior to plan and execute collections approaches.

Early warning systems can signal a client's likely credit deterioration based on behavioral scores of the client's financial performance, past credit history, and risk profile of the individual owner (particularly for micro and small enterprises). Typical early warning systems can analyze client behavior and segment

[167] Ibid.

the portfolio into three broad categories for FSPs to develop collections strategies:[168]

**Performing.** Clients who do not show signs of credit deterioration.

**Watch.** Clients who require attention even if payments are still regular; more frequent and in-depth reviews of their situation are necessary. In some cases, additional collateral is required.

**Delinquent.** Clients that are imminently or already in default and are typically taken over by collections and recovery functions.

Risk mitigation measures need to be automatically applied for each category determined by the early warning system, by engaging with the MSME client through appropriate channels based on the category assigned. Traditionally, collection activities have primarily relied on manual approaches, using phone calls, letters, physical visits by bank staff, and more recently text messaging. In the current environment with increasingly digitalized channels, debt collection should embrace a multi-channel approach to reach customers. With MSME clients engaging in banking interactions through mobile and internet channels, their preference may also be for collections activities, especially at the early stage, to be less intrusive and through their preferred channel of use.

The channels can vary from messaging through digital channels to alerts on upcoming payment dates and outstanding amounts. Reminders and alerts can be based on repayment behavior scores attached to particular clients. Regular system-generated reports to alert staff about upcoming repayments for their client portfolios can trigger engagement calls and, in case of delays, follow-ups by dedicated collections teams or relationship managers for larger clients. The use of channels and actions will depend on the category assigned and the probability of default.

For performing clients, the only risk-mitigation measure typically concerns the frequency with which the clients are re-assessed. Risk mitigation measures are most important for watch clients; typical measures include requesting an in-depth review, limiting the use of overdraft facilities, decreasing the exposure to the client, asking for more collateral, changing terms, and re-pricing. Relationship managers or collections staff can either reduce the credit limit or limit risky products such as overdrafts. To implement risk mitigation measures, the roles of collection staff and relationship management staff must be clearly defined.

A digitally enabled collection environment will address changing customer expectations but also optimize customer interactions and enable regulatory compliance. Deploying a digital debt collection solution also helps drive superior customer experience, compliance, and business outcomes, such as improved credit performance and reduced cost of collection.

[168] Ibid.

# 6

# Credit Risk Management for *MSMEs* in the Digital Era

*Risk management is a critical pillar for ensuring the sustainable provision of financial services. There are many potential benefits of leveraging digital technology, advanced data analytics, and tools such as AI for MSME credit risk management. Financial institutions that have digitalized the risk function have experienced improved efficiency and better quality of risk decisions, shorter turnaround times on loan applications and sharper accuracy of pricing, and improved monitoring capabilities and regulatory compliance. There are gains to be made in efficiency, productivity, risk effectiveness, competitiveness, and revenue.*

*This chapter, while not exhaustive, seeks to provide a basic framework that an FSP should establish to continuously identify, monitor, and mitigate the risks associated with MSME finance. To ensure that MSME risk management is fully integrated within a financial organization's framework, certain foundational elements must be established or strengthened to support a sustainable, efficient approach to mitigating risks. The following steps outline the mandatory areas that are needed to establish an effective Enterprise Risk Management Framework (ERMF) that includes MSME operations:*

**1. Establishment and/or Embedding of MSME Operations Within the Organizational Risk Management Framework.** This step involves assessing the broader ERMF to confirm that it is sufficiently robust to support MSME-specific risk requirements. Once the framework is established and validated, the MSME business unit is positioned within it to ensure alignment with minimum ERMF standards. This integrated approach not only helps build and operate a sustainable MSME finance business but also ensures regulatory compliance and adherence to stakeholder risk parameters.

The key areas needed to establish a comprehensive ERMF are:

*Four Lines of Defense and Risk Culture.* Organizations must establish four lines of defense to ensure accountability and a collaborative, robust risk culture. The First Line of Defense (FLOD) comprises business units (e.g., MSME Banking Unit) that define and manage risks through policies and procedures, assessing and reporting them regularly to the Second Line of Defense (SLOD). The SLOD, which includes Compliance and Risk Assurance under the Chief Risk Officer, sets and approves risk appetite and monitors the FLOD's adherence to risk standards. These two lines report to the CEO/Managing Director, providing leadership oversight. The Third Line of Defense (TLOD), the Internal Audit, independently assesses the FLOD and SLOD, reporting directly to the board of directors to maintain independence. Finally, the Fourth Line of Defense involves External Auditors, who assess the bank's overall condition, including its MSME operations, and report their findings to stakeholders. Embedding the MSME Banking Unit within this structure ensures comprehensive risk tracking and reporting.

*Identification of Principal Risks.* Defining core risks is crucial for building a consistent risk culture within the bank. Principal areas of risk for the bank are operational, reputational, conduct, credit, treasury, people, technology, and cyber risks. Each principal risk should have a dedicated executive-level owner accountable for end-to-end monitoring and management, as discussed in subsequent sections.

*Policies, Procedures, and Standard Operating Manuals.* Organizations should establish clear, documented policies and procedures for guiding and monitoring services offered to different segments. These documents should define any exclusions outside the bank's strategy and risk appetite. For MSME units, policies may need to reflect sub-segment nuances (e.g., whether a micro, small, or medium enterprise) for effective risk management, with accountability at a senior level to promote ownership and oversight.

*Setting Organizational Risk Appetite.* Defining risk appetite for each principal risk, such as credit, operational, treasury, and conduct risks, should follow the SMART (Specific, Measurable, Achievable, Relevant, Time-bound) principle. A bottom-up approach is effective, where the MSME unit's risk appetite aligns with overall organizational strategy and is approved through appropriate governance channels. Regular tracking, supported by technology, enables the MSME unit to quickly adapt to market changes while maintaining a clear audit trail.

*Establishment of Risk Committees.* Organizations should form hierarchical committees with specific mandates from the board of directors to monitor risks at each organizational level. Committee types often include Credit Risk, Operational Risk, and Asset & Liability Committees. Effective risk governance relies on the separation of risk-taking and approval responsibilities, with SLOD chairpersons heading country-level committees. Advanced tools, such as AI and machine learning, support accountability and decision-making while maintaining human oversight.

**2. Integration of Automated Processes in an Existing Business.** For organizations seeking to build a robust ERMF, MSME units should explore opportunities to automate risk management processes without compromising core risk principles. A use-case methodology, wherein specific use cases (e.g., predictive scoring models, credit-decisioning engines, automated collections) are tested and implemented incrementally, has proven effective in transforming risk frameworks over time.

As highlighted above, an FSP experiences various principal risks, each requiring a clear set of standards, policies, approaches, and risk appetite to ensure consistent application, tracking, and adoption throughout the organization. For additional and detailed understanding of the principal risk definitions and how the ERMF is applied, see the IFC *Digital Financial Services and Risk Management Handbook*.[169]

## *Key Components in Risk Management*

Once an organization has established the requisite ERMF, it should proceed to train and equip the resource base with the key component capabilities that ensure the continuous management/existence of a sound risk environment. Figure 6.1 illustrates these components in a cyclical manner to reflect the continuous nature of this process as the business operates.

**Risk Identification.** Entails the process of identifying risks across all facets of the organization. For MSMEs, this would translate into understanding the MSME's operating model and its associated risks.

**Risk Assessment and Measurement.** Quantifying the likelihood and impact of risks, tailored to the MSME risk profile (based on industry/sector).

**Risk Control and Mitigation.** Developing strategies to manage and mitigate risks, including technology-driven solutions for managing the associated principal risks.

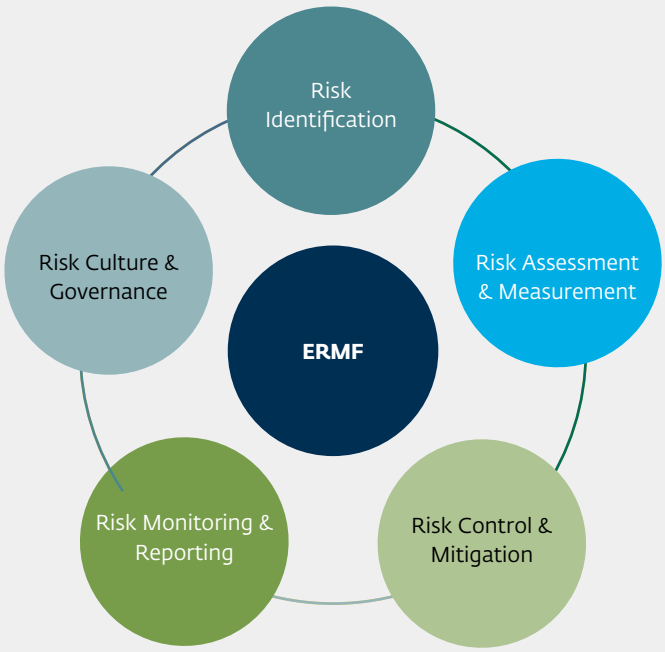



*Figure 6.1. The Key Components of an ERMF*

[169] IFC and The MasterCard Foundation, 2017, Digital Financial Services and Risk Management Handbook: https://documents1.worldbank.org/curated/en/226461531293264583/pdf/Digital-financial-services-and-risk-management-handbook.pdf

**Risk Monitoring and Reporting.** Continuous oversight and reporting of risk exposures, with specific metrics affecting MSMEs.

**Risk Culture and Governance.** Establishing a risk-aware culture with clear governance, particularly in the context of MSME-focused digital lending and finance solutions. This aspect of risk culture cannot be overemphasized and is key to setting the right tone within the organization.

## *Managing MSME Credit Risk in the Digital Era*

MSMEs in Africa frequently lack structured business plans and maintain limited formal financial records, making credit assessments challenging. Due to these limitations, FIs have traditionally relied on discretionary lending methodologies to evaluate creditworthiness. In this approach, lenders base credit decisions on personal relationships, deep knowledge of the business, and qualitative factors gathered over time, rather than solely on quantitative data or credit scores.

Rule-based lending employs credit-scoring models that use transaction history, credit bureau data, alternative data, and other digital indicators to assess an MSME's risk profile. This data-driven approach enables FIs to standardize and scale their lending practices, making credit more accessible without comprehensive financial records or established banking relationships. While discretionary lending remains relevant for cases requiring additional due diligence, rule-based lending can streamline access to credit, especially as more MSMEs embrace digital financial tools.

Discretionary lending relies on both quantitative and qualitative information to assess the capacity of MSME clients to repay a loan. Such assessments often involve quantitative analysis of business profitability, cash flow generation capacity, the structure of the balance sheet, and collateral. Additionally, the lender seeks to understand the nature and prospects of the MSME business, assessing market demand, management capabilities, and exposure to macroeconomic developments.

This has often translated into onerous documentation and collateral requirements that MSME clients are unable to provide, limiting their access to finance. Where financing is provided, the interest rates have tended to be prohibitively high, thus further curtailing the ability of the MSMEs to repay loans. In most cases, manual loan processes have resulted in poor customer service quality, characterized by long turnaround times on loan applications. Consequently, even potentially good borrowers have preferred to turn to alternative sources of funding, such as family and friends or nonbank FIs. This is a well-documented and widely recognized missed opportunity for FIs.[170]

## *Principles for Management of Credit Risk*

It is important to highlight that the use of innovative digital solutions in MSME lending does not replace the sound practices of credit risk management that must be adhered to by any type of organization offering credit. As defined in the Basel Framework,[171] these practices address the following areas: (i) establishing an appropriate credit risk environment; (ii) operating under a sound credit granting process; (iii) maintaining an appropriate credit administration, including measurement and monitoring processes; and (iv) ensuring adequate controls over credit risk. These practices should also be applied in conjunction with practices related to the assessment of asset quality, the adequacy of provisions and reserves, and the disclosure of credit risk. A key aspect of these practices, which form the basis for the assessment of creditworthiness for MSMEs, is the "5Cs" of credit risk—character, capacity, capital, conditions, and collateral.

A best-practice SME risk assessment includes financial analysis, management appraisal, industry assessment, and an evaluation of the business proposal to be financed. It will be a detailed appraisal that looks at the economic environment and the industry in which the business operates and the SME's position within that industry. It will assess the quality of the specific business, particularly its management. It will also examine the prospects of the proposal to be financed by the loan in terms of commercial viability and the ability of the SME to carry it through.

Best-practice MSME risk assessments have produced differentiated approaches for micro (100% rule-based lending), small (hybrid lending with an 80:20 rule in favor of rule-based lending) and medium (discretionary lending) enterprises. Due to their size and tenure, medium enterprises have capacity to meet the discretionary lending requirements for assessment of the commercial viability of their business proposals that seek financing.

[170] See for example, IFC, December 2022, Market Bite Nigeria: Innovation Offers Key to the Broader MSME Finance Market: https://www.ifc.org/en/insights-reports/2022/market-bite-nigeria-innovation-offers-key-to-the-broader-msme-finance-market

[171] Bank for International Settlements (BIS), The Basel Framework: https://www.bis.org/basel_framework/

## *MSME Credit Risk Appetite*

Risk appetite is the amount and type of risk that an organization is willing to take to meet its strategic objectives. A Risk Appetite Framework must be established and read in conjunction with the ERMF. Risk appetite must be defined both qualitatively and quantitatively.

**Qualitative Risk Appetite:** Describes the organization's attitude, values, and tolerance toward risk, without specific numeric thresholds. It includes statements that articulate the types of risk that are acceptable or unacceptable and general boundaries of risk-taking. This sets out which segments/sectors/industries an FSP would target.

**Quantitative Risk Appetite:** Expresses risk tolerance in measurable terms, setting numeric limits to guide risk exposure. These metrics may include specific limits on financial losses, ratios, or other measurable risk indicators. An example would be the amount of exposure an FSP would want to have in a particular sector/industry of MSMEs.

To provide effective MSME financing, an FSP must first determine its risk appetite for the segment and its various sectors/industries. FIs that are successful in the MSME segment generally ensure strong alignment between strategy, risk appetite, financial resources, internal policies, market conditions, and regulatory framework. Articulating a risk appetite for MSME lending is a crucial step toward signaling the institution's tolerance for risk and strategic ambitions for the segment.

There are a number of possibilities for leveraging data analytics and digital solutions to determine the MSME risk appetite for an FSP:

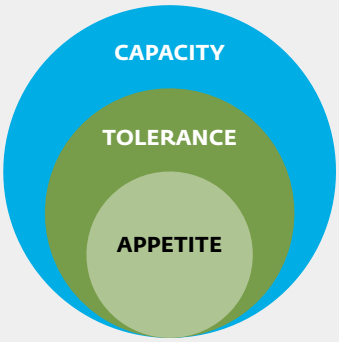
**Historical Data Analysis.** By analyzing historical data, banks can identify patterns and trends in risk exposure and performance, helping them set realistic and data-driven risk appetite levels.

**Predictive Analytics.** Predictive models can forecast potential risk scenarios based on current and historical data, allowing banks to adjust their risk appetite in anticipation of future market conditions. Banks should allow setting of triggers and leading indicators that allow early detection of risk.

**Stress Testing and Scenario Analysis.** Data analytics can facilitate comprehensive stress testing and scenario analysis, enabling banks to understand the impact of extreme but plausible events on their risk profile and refine their risk appetite accordingly.

**Real-Time Monitoring.** Implementing real-time data analytics systems allows banks to continuously monitor risk exposures and performance metrics, ensuring that their risk appetite remains aligned with current conditions and can be adjusted as needed.

**Segmentation and Portfolio Analysis.** Data analytics can help banks segment their portfolios and analyze risk at a granular level, providing insights into specific areas that may require different risk appetite thresholds.




| | |
|---|---|
| Risk Appetite | The amount and type of risk that an organization is willing to accept. |
| Risk Tolerance | The amount of deviation from risk appetite an organization is willing to accept. |
| Risk Capacity | The maximum amount or level of risk an organization should accept. |

*Figure 6.2. Risk Thresholds*

**Customer Behavior Insights.** Analyzing customer behavior and transaction data can offer valuable insights into credit risk and potential default probabilities, helping banks fine-tune their risk appetite for different customer segments and industry sectors.

**Regulatory Compliance and Reporting.** Data analytics can ensure that risk appetite frameworks comply with regulatory requirements by providing accurate and timely reporting, thus avoiding potential regulatory penalties.

**Benchmarking and Peer Analysis.** Using data analytics to benchmark against industry peers can provide a comparative view of risk appetite and highlight areas where adjustments may be necessary to remain competitive and aligned with industry standards.

The risk appetite process should define which MSME sectors the FSP is willing to lend to, which sectors it will not lend to, and possibly some sectors that it is ambivalent about. Potential clients in ambivalent sectors should be treated on a case-by-case basis. With a list of priority sectors, the FSP can invest in targeted training of staff to deepen their knowledge of these sectors, develop specific templates for each sector, and introduce sector-specific credit policies supported by sector-specific risk appetite statements.

## Risk Classification

The MSME risk appetite statement should be supported by a dedicated, graded risk classification policy and procedures. Risk classification is the categorization of loans according to a scale of risk; ratings assist in the underwriting of new loans and in portfolio risk management. Risk ratings should be conducted at the time of application for all new or increased loan facilities as part of the annual review process, and in situations where new information is available that may impact the credit risk of loans. The risk rating should reflect the macro-economic position of the country. For example, in a sovereign default situation, the credit grades should reflect this macro-position. Risk ratings are also useful for pricing loans with higher interest rates charged for higher risk credit grades and for regulating portfolio exposure.

As part of credit portfolio management, the credit grades should be adjusted at client level as performance changes through the credit cycle. When a client exposure moves down through the early alert reporting stages, it should be downgraded (or vice versa, when it moves up). Similarly, credit grades should be adjusted downwards as it moves through credit recovery stages until write-off (or vice-versa).

To scale up MSME lending, FIs should develop a risk grading scale that is unique to the MSME segment while aligned to the organizational scales for consistent reporting and oversight. Ensuring an accurate risk grade profile for any portfolio is essential, especially for effective MSME risk management, given MSMEs' high sensitivity to country-level risk factors. A risk grading scale tailored to the MSME segment—and aligned with the overall country credit grade profile—can enhance consistency and comparability, enabling better assessment of how country-level risks impact these businesses. Risk classification or rating decisions should be based on well-documented, high-quality information that is accurately captured and objectively analyzed.

Best-practice data and system management dictates that banks should ensure that this risk grading is reflected in all systems from core banking to credit-decisioning engines and CRM systems. An inbuilt back-testing capability is critical to check grade alignment in real time, highlighting exceptions for remediation. This is critical to ensure banks meet the required prudential reporting in many jurisdictions, given the numerous instances of regulatory sanctioning and penalties for delayed or incorrect data reporting to the prudential authorities.

## *SME Risk Management Workflow*

Determining the risk appetite for the MSME segment and sub-segments, and creating the risk classification scale, are foundational steps in a typical MSME credit risk management workflow (see Figure 6.3, page 144). The workflow aligns with the E2E (end-to-end) loan application process. Multiple opportunities arise throughout the workflow to leverage technology-based innovations to replace or supplement manual processes.

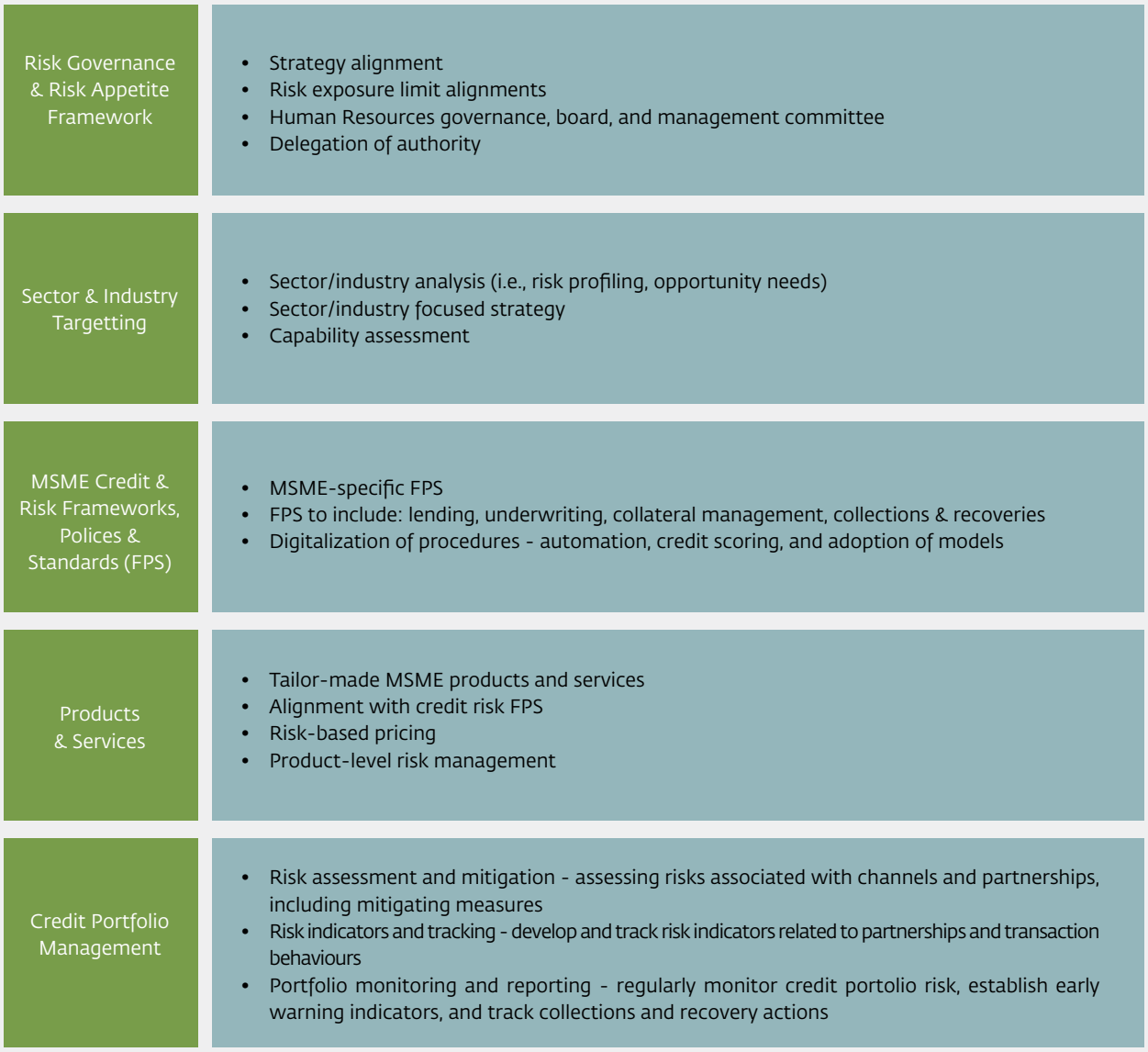



*Figure 6.3. Risk Management Workflow*

## Dedicated MSME Policies and Structures

Successful banks serving MSMEs implement specialized credit policies and processes. Underwriting standards for MSME loans should be customized to address the unique needs of this segment. The skills, knowledge, and expertise required to evaluate MSME loan applications are distinct, and by establishing dedicated policies and procedures for MSMEs, FIs can tailor training for branch front-office staff and credit analysts, building deep expertise in this segment.

Differentiated MSME Credit Policies should provide a structured framework that addresses not only the specific components but also the mechanisms for their implementation, ongoing monitoring, and adaptation over time. This ensures a consistent and adaptive approach to managing MSME credit risks in dynamic market environments. The key components include:

**1. Policy Administration**

*Setting:* Define clear roles and responsibilities for policy creation, update, and enforcement. Develop procedures to document policy changes and communicate them across relevant teams.

*Application:* Regularly apply policies through standardized processes and ensure staff adherence via training.

*Monitoring:* Conduct periodic reviews to assess compliance with policy standards and to ensure policies remain relevant to changing business or economic conditions.

**2. Governance**

*Setting:* Establish a governance structure that includes oversight committees and reporting lines. Define accountability and independence for risk management activities at various organizational levels.

*Application:* Apply governance principles by engaging senior management in credit risk decision-making and promoting risk-aware culture across all levels of the institution.

*Monitoring:* Conduct regular governance audits and evaluations to ensure that governance practices are effectively supporting the risk management objectives.

**3. Credit Authority**

*Setting:* Define credit approval authority levels, delegating decision-making power based on risk tolerance, loan size, and other key metrics such as expertise and seniority.

*Application:* Apply these authorities consistently, ensuring that only authorized personnel are involved in decision-making processes and that decisions are documented. Best practice demands that credit authority vests in non-client relationship management resources or systems under the control of the independent team.

*Monitoring:* Review authority levels periodically to adjust for organizational growth, staff expertise, and changes in market conditions.

**4. Credit Assessment and Approval**

*Setting:* Develop criteria and standardized processes for assessing MSME creditworthiness, including financial analysis, business viability, and industry risk. Where rule-based lending is in use, the FI should capture the policy rules and alternative parameters for system assessment and approval to deliver the requisite straight through processing.

*Application:* Apply these assessment criteria consistently, supported by training and clear documentation guidelines for all credit officers.

*Monitoring:* Track approval rates, default trends, E2E turnaround time and portfolio health to assess the effectiveness of assessment standards and update them as necessary.

**5. Minimum Underwriting Standards**

*Setting:* Establish minimum standards for underwriting MSME loans for each subsegment and product type. Where digital loans are offered, these should be clarified and mirrored in the system.

*Application:* Ensure these standards are consistently met for each loan approval and periodically verify adherence through internal audits and use technology to provide real time exception alerts/ reports for deviations and/or breaches.

*Monitoring:* Review and adjust underwriting standards regularly to reflect evolving risk tolerance, competitive response, economic conditions, and market trends.

**6. Credit Risk Measurement**

*Setting:* Implement metrics and KPIs for measuring credit risk, such as probability of default (PD) and loss given default (LGD).

*Application:* Apply these metrics in risk analysis, portfolio management, and decision-making processes.

*Monitoring:* Continuously monitor these metrics, regularly recalibrating models to ensure they accurately reflect the risk levels in the MSME portfolio.

**7. Credit Risk Models and Model Risk Management**

*Setting:* Develop and validate models to assess credit risk, ensuring that models are tailored to MSME segment characteristics.

*Application:* Use these models in credit assessments, applying model outputs as part of the risk assessment process.

*Monitoring:* Conduct periodic back-testing and stress testing, validating model performance and addressing any model risks to maintain accuracy and relevance.

**8. Collateral Requirements and Valuation**

*Setting:* Define collateral requirements specific to MSMEs, considering asset type, collateral recovery rates, liquidity, and valuation frequency.

*Application:* Apply these requirements consistently in the underwriting process and establish procedures for accurate valuation, perfection and custody.

*Monitoring:* Regularly review collateral values, reappraise as necessary, and update requirements based on loan performance, regulatory directives and market changes.

**9. Monitoring and Review**

*Setting:* Establish protocols for ongoing monitoring of MSME borrowers, including periodic financial reviews, site visits, and risk assessments.

› For discretionary lending, protocols may include more intensive reviews, such as periodic financial assessments and site visits, allowing for nuanced evaluation of MSME-specific circumstances.

› For rule-based, collateral-free lending, focus on data-driven monitoring aligned with the predefined criteria, integrating automated alerts for early warning signals based on credit turnover, account activity, or other rule-based metrics.

*Application:* Apply these protocols consistently, integrating them with early warning systems to identify and address potential risks proactively.

*Monitoring:* Set up regular portfolio reviews to assess performance, detect emerging risks, and refine monitoring protocols accordingly.

**10. Management of Exceptions**

*Setting:* Define policies for managing exceptions, including approval processes, documentation requirements, and allowable limits. Establish a tracking mechanism.

*Application:* Ensure exceptions are applied only in justified cases, with proper documentation and senior management oversight.

*Monitoring:* Track exception approvals, review trends, and assess their impact on the overall risk profile, adjusting policies if exceptions become overly frequent or pose significant risks.

MSME credit policies should include guidelines for triggers and caps on units, sectors, segments, and the overall portfolio. Triggers prompt risk appetite reviews, while caps limit exposure where high risk or reputational issues are possible. Set at levels supporting growth; these limits protect the organization in downturns and should be regularly reviewed to align with economic changes, organizational strategy, and portfolio quality. Digitalizing portfolio review processes can automate triggers and caps, enhancing efficiency and portfolio protection.

## The Loan Origination Process

The loan origination process involves business development and data collection. Traditionally, this process often starts with an MSME client contacting a relationship officer at a branch to request a loan. The loan officer collects and verifies the necessary data, such as financial records and project proposals, through a conversation with the client. The decision to proceed with the process is often based on a paper-based assessment as well as the collateral provided by the MSME. Due to the challenges in obtaining reliable historical data, the majority of MSME lending worldwide is collateral based, thus excluding many potential MSME borrowers from accessing finance due to lack of traditional collateral.

Innovative digital technologies provide several alternatives that are gaining prominence in the MSME lending market. Availability of reliable data at a reasonable cost is critical for robust credit risk analysis. Alternative data are increasingly being used to develop credit risk models that assess the willingness and ability to repay a loan by MSME clients. Traditional data sources such as account transaction history and financial statements are increasingly being used in combination with alternative data such as mobile phone call records, utility and bill payments, digital transaction records, social media, and psychometric and behavioral scores.[172]

The use of alternative data sources not only offers the potential for enhanced risk assessments but can also reduce the time it takes to assess MSME loan requests, and hence lead to cost reductions

[172] World Bank Group, 2022, Fintech and SME Finance: Expanding Responsible Access: https://openknowledge.worldbank.org/entities/publication/ccb7e18a-01a6-54e2-a258-bccd8dd64d2c

and operational efficiencies. According to a McKinsey study,[173] the average "time to decision" for small business and corporate lending is three to five weeks (based on banks in Europe, Asia, and North America). However, leading banks that have digitalized the credit process have been able to bring down "time to yes" to five minutes and "time to cash" to less than 24 hours.

The same is true for fintechs and nontraditional lenders that are increasingly targeting the broader MSME market. For example, the banking-as-a-service platform, JUMO, founded in 2015, provides an end-to-end next generation banking infrastructure that enables bank partners to offer MSMEs and individual clients real-time access to funds, primarily leveraging mobile money at low operating cost. JUMO uses AI and machine learning to build credit scores and targeted financial products for clients who do not have a formal financial identity, collateral, or credit records. Since 2015, JUMO has disbursed, at 4% cost of risk, $6 billion in 210 million loans to over 25 million individual and MSME clients in Côte d'Ivoire, Ghana, Kenya, South Africa, Tanzania, Uganda, and Zambia.[174]

FIs in emerging markets often rely on collateral for MSME lending, but many MSMEs lack traditional assets, like real estate, due to their business models or economic conditions. In such cases, alternative collateral or unsecured lending can be viable options. Digital lending approaches, such as using alternative data, cash-flow-based lending, and supply chain finance, help address these challenges.

Digitalization is especially useful for pre-screening applications to identify eligible clients and filter out those who do not meet minimum criteria, saving time and resources. Manual pre-screening, though time-intensive, works for low application volumes, while digitalized pre-screening is faster and suited for higher volumes. A hybrid approach allows software to filter applications by credit policy requirements, with remaining applications manually reviewed by relationship managers or loan officers. FIs can use digital technologies to automate the process of converting printed bank statements into machine-readable text. This involves using OCR (Optical Character Recognition) technology to read various fonts and even handwritten notes, cleaning the images to improve clarity, and applying Natural Language Processing to interpret the extracted data. Additionally, pattern recognition and data parsing techniques can be employed, with integration into existing systems through APIs. Automated checks ensure data accuracy, while encryption and detailed logging ensure security and compliance with data protection regulations.

## *Credit Assessment*

The decision-making stage of the MSME credit risk management workflow involves conducting a risk assessment and deciding whether to extend a loan to a client, including the loan conditions. Best-practice underwriting processes for MSME lending are guided by a dedicated MSME credit policy, detailed risk appetite, appropriate risk grading, and specific underwriting standards tailored to the needs of the MSME segment. Credit risk assessments and approval decisions leverage robust credit-scoring models and scorecards.

All credit-scoring models in use should be governed by a comprehensive model risk management framework. A sound model risk management framework consists of several key components designed to ensure the effective development, validation, and use of models within an organization. At a minimum, the model risk management framework should include (i) model identification and model risk classification, (ii) model governance, (iii) model development, implementation, and use, (iv) independent model validation, and (v) model risk mitigation. Additionally, the framework should consider the conceptual soundness of the credit model, assess unintended consequences such as the exclusion of protected characteristics (e.g., race, gender, religion), and define model ownership within the business context. The framework should also include regular reviews and back-testing of models, as well as validation of model performance.[175]

A model risk management framework is essential in an organization to manage risks inherent in the use of models. Aspects of model uncertainty and operational uncertainty, including post-model adjustments need to be addressed in such a framework. In the digital era, scoring models are extensively used for credit assessments, hence model risk is a key aspect to be addressed.

[173] McKinsey, 2018, The lending revolution: How digital credit is changing banks from the inside: https://www.mckinsey.com/capabilities/risk-and-resilience/our-insights/the-lending-revolution-how-digital-credit-is-changing-banks-from-the-inside

[174] JUMO website, January 13, 2025: https://jumo.world/

[175] Office of the Comptroller of the Currency, August 2021, Comptroller's Handbook - Model Risk Management: https://www.occ.gov/publications-and-resources/publications/comptrollers-handbook/files/model-risk-management/index-model-risk-management.html

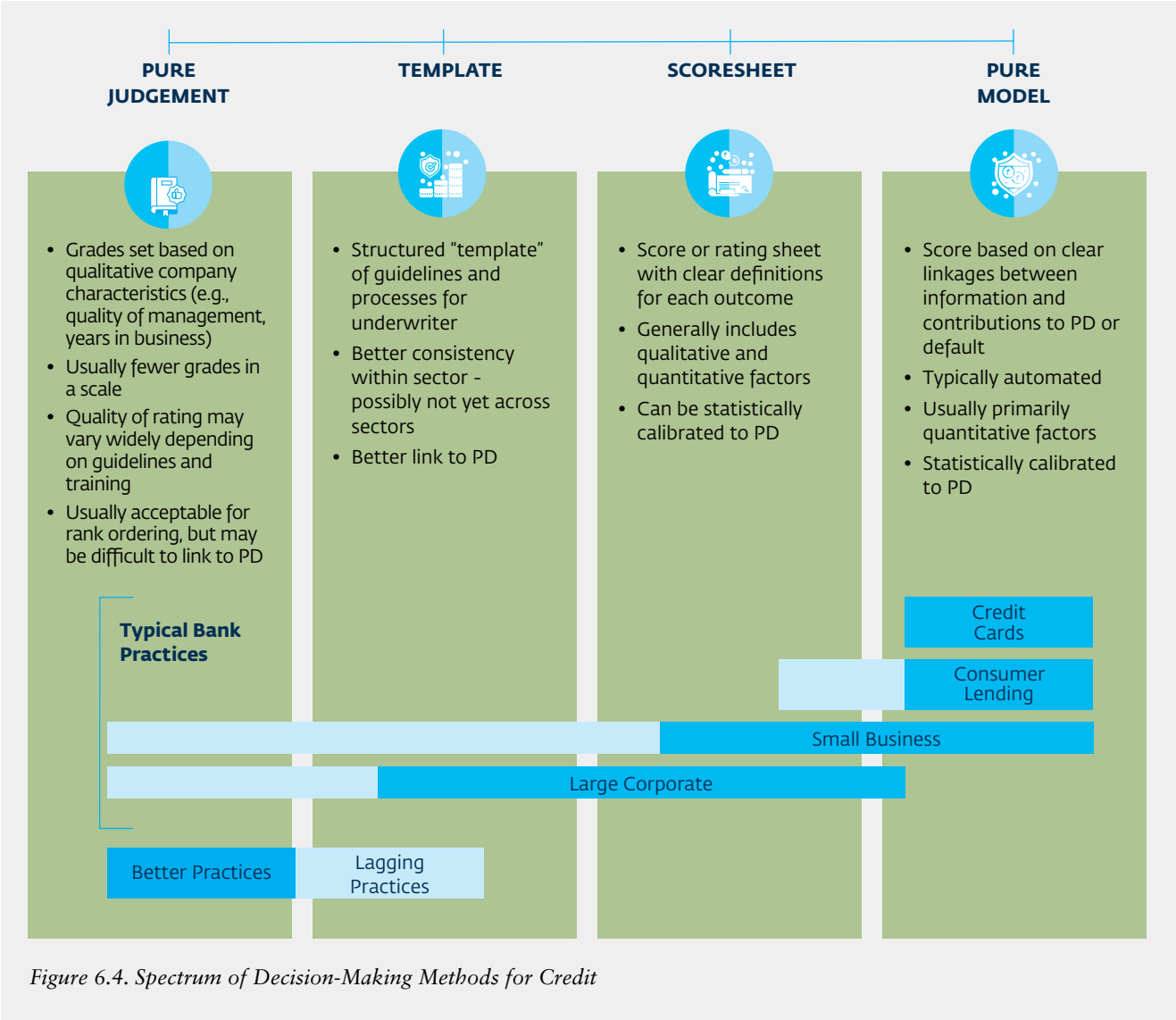



*Figure 6.4. Spectrum of Decision-Making Methods for Credit*

## Use of Models

There are several approaches to credit risk assessment that are typically complementary rather than mutually exclusive; these range from pure judgment to fully automated models (see Figure 6.4, page 148). Different rating methods are generally applied to various market segments and products. The models, when based on reliable data, can provide stronger predictive power and greater accuracy.

## Credit Scorecards

A credit scorecard generates a score based on a quantitative analysis of various inputs that indicate a client's ability and willingness to repay. Leading FIs use behavioral scorecards to support lending decisions for MSMEs. There are various scorecard options and numerous ways for FIs to deploy them for assessing MSME applications. Pure MSME models exist, but are generally most effective for the larger MSMEs in developed markets where credit bureaus report comprehensive information for MSMEs. In emerging economies, it is common for FIs to develop scorecards that combine retail and company data.

Scorecards can be grouped into two categories:

**Custom models** are statistically based and created using an FSP's internal MSME customer data. They may also incorporate data provided by credit bureaus, and data on the business owner and business, if available. To use this type of credit-scoring model, the FSP must maintain a comprehensive database of MSME customer information.

**Expert models** rely on judgment and are typically used for MSME lending when an FSP does not have enough data to develop a custom model. The content of an expert-based model is determined by a working group composed of members from various parts of the FSP. These entry-level scorecards have gained popularity and are widely used, especially in emerging markets where quantitative data are less accessible.

A common challenge for FIs in emerging markets when developing MSME scorecards is the lack of reliable in-house data. Pooled data models address this issue by using data from external sources, such as credit bureaus. While pooled data offers the advantage of a broader base, relevant pooled data can be scarce in some markets. Developing custom models for MSME lending is costly and time-consuming, requiring extensive efforts in data collection, validation, and testing, which can limit some FIs' willingness and ability to invest in them. When using off-the-shelf models, it is crucial to ensure that the underlying data base aligns with the MSME customer profiles in the FSP's target market.

## Probability of Default

The primary goal of any credit risk assessment is to determine the likelihood of loan repayment, or alternatively, the probability of default and expected losses to the FSP. The result of this analysis influences the decision to grant a loan, the type of product to offer, the loan conditions, and the loan pricing. Expected Loss (EL) is calculated as a function of the Probability of Default (PD), the Exposure at Default (EAD), and the Loss Given Default (LGD) (see Figure 6.5 on page 150).

EAD and LGD are facility-related calculations. EAD is calculated to determine expected drawdown at the time of default based on the amount of the loan and the repayment schedule. LGD is based on the loss that will be suffered if the borrower defaults, measured as a percentage based on the security type and value. PD, EAD, and LGD are all future-looking and provide an FSP with a degree of confidence about the potential losses for the portfolio. Together, they provide the EL.

Estimating PD for MSMEs is often challenging due to their limited financial history, making it difficult to assess their creditworthiness using traditional methods. Additionally, MSMEs operate across a wide range of industries and business models, leading to significant variability in their financial performance and risk profiles. This heterogeneity makes it challenging to develop a standardized model for assessing default risk, hence the emergence of diverse and innovative digital approaches designed to address this information gap. Expected losses for collateralized loans are notably different and more benign compared to loans without collateral. The type of collateral used in securing a loan significantly influences the LGD, hence the preference for real estate collateral in many African countries.

## Automated Credit-Scoring Models

Advances in big data and data analytics have created opportunities for FIs to improve credit-decisioning models, both in terms of accuracy and efficiency. According to a 2021 study by McKinsey,[176] banks that have embedded high-performing credit-decisioning models into their digital lending have experienced 5–15 percent revenue increases through higher acceptance rates, lower cost of acquisition, and better customer experience; 20–40 percent decrease in credit losses; and 20–40 percent higher efficiency.

The development of automated credit-scoring models relies on analyzing extensive sets of internal and external data, including alternative data. There are various types of data that can be mined for predictive credit signals, as discussed in earlier chapters. These data are then processed by machine learning and AI algorithms to deliver more accurate and robust credit evaluations, especially for businesses with limited credit histories. AI automates the manual underwriting process, reducing assessment times and allowing lenders to efficiently manage large volumes of MSME applications without compromising the quality of risk analysis.

The more digital the customer is, the greater the access to data to be leveraged for automated credit-decisioning models. The following examples (Table 6.1), developed by Dalberg, show how digital disruptions can be leveraged for improved data collection and credit risk assessments of MSMEs.[177]

While automated credit-scoring models based on alternative data offer promising opportunities for FIs to enhance the MSME credit decision-making process, they also present several challenges. For instance, AI and machine-learning algorithms may exhibit biases present in the training data, such as those based on gender, race, or ideology. Additionally, incomplete, or unrepresentative datasets can limit the objectivity of these models, potentially excluding certain groups or businesses from accessing digital lending products. AI and machine-learning algorithms often operate as "black boxes," providing little transparency about how data are gathered and used for prospect identification, credit ratings, scoring, and approval. This opacity makes it difficult to explain decisions, exacerbating the impact of potential discrimination and complicating the establishment of safeguards.[178]

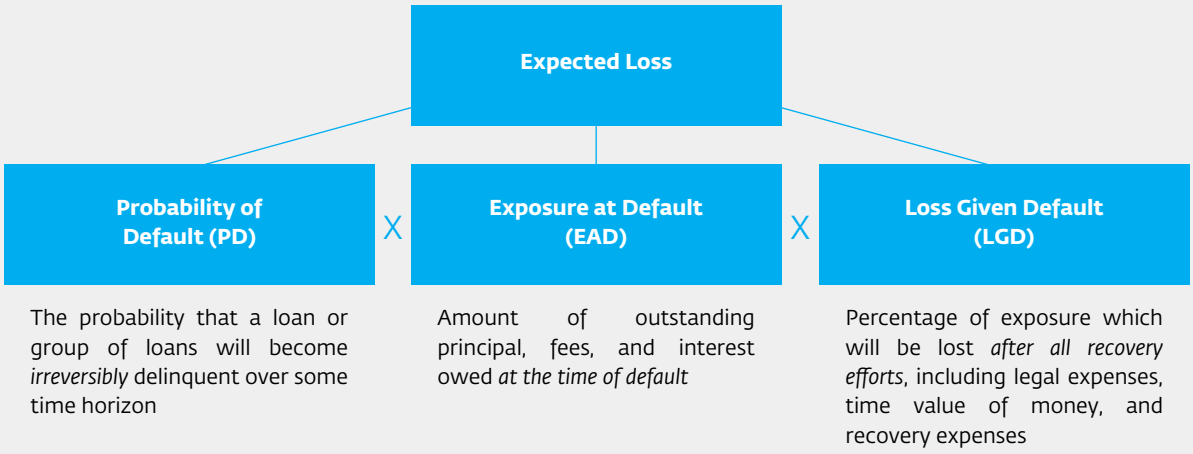



*Figure 6.5. Credit Risk and Probability Theory*

[176] McKinsey, 2021, Designing next-generation credit-decisioning models: https://www.mckinsey.com/capabilities/risk-and-resilience/our-insights/designing-next-generation-credit-decisioning-models

[177] Dalberg, January 2019, Bridging the credit gap for Micro and Small Enterprises through digitally enabled financing models: https://www.findevgateway.org/sites/default/files/publications/files/external_190131_final_report_mses_cgap_external_final_updated-bisvb.pdf

[178] World Bank Group, 2022, Fintech and SME finance: Expanding responsible Access: https://openknowledge.worldbank.org/entities/publication/ccb7e18a-01a6-54e2-a258-bccd8dd64d2c

| | |
|---|---|
| Using primary data collected on MSME sales and transactions | **Disruption:** Payment integration to gain visibility into MSME sales and transaction data |
| | **Advantage:** Can be used as proxy for missing financial records to assess turnover and cash flow |
| | **Disadvantage:** Does not capture entire business health—cash transactions remain unknown |
| Using primary data collected on MSME inventory and input use | **Disruption:** Direct integration and visibility into MSME back-end ordering data |
| | **Advantage:** Provides knowledge of inventory turnover which can be used for in-kind lending |
| | **Disadvantages:** Provides limited knowledge on overall business and financial health |
| Using secondary data provided by partners on MSME performance | **Disruption:** Direct visibility of data captured by the systems of other organizations |
| | **Advantage:** Partners can provide a broader range of data to allow better assessment |
| | **Disadvantage:** Requires partners to be open to sharing the data they have |
| Using indirect proxy data such as Facebook and phone scraping | **Disruption:** Capturing a broad range of nonbusiness-specific digital data |
| | **Advantage:** Allows assessment of businesses that may use few digital tools |
| | **Disadvantage:** Does not provide any indication of business health or performance |

*Table 6.1. Digital Disruptions to Improve Data Collection and Credit Risk Assessment for MSMEs.*

## Risk-Based Pricing

FIs are swiftly advancing their pricing capabilities to adopt more scientific methods for pricing credit products to MSMEs, aiming to optimize capital allocation, returns, profitability, and growth. The more nuanced and accurate the credit risk assessments, the better equipped an FSP will be to price products both competitively and profitably. Best practice involves using a risk-based pricing matrix, where risk levels are identified using models and then translated into a pricing matrix. The risk associated with a transaction determines the required capital. This means that the loan will be priced at a level that provides adequate risk-adjusted returns after considering the cost of capital. This can be achieved by linking the pricing matrix to risk classification grades. Figure 6.6. illustrates how granular risk-based pricing can be leveraged to gain a competitive advantage.

Best practice is to use a risk-based pricing matrix, in which risk levels are identified using models and are subsequently translated into a pricing matrix. The risk of a transaction drives the capital that is required for that transaction, which means that if the transaction is priced according to risk, the cost of capital is compensated. Cost of capital can be achieved by linking the pricing matrix to risk classification grades.

Pricing for risk can be implemented as a premium for high risk or a discount from standard pricing for low risk. Pricing incentives facilitate the ability to actively manage the portfolio and achieve profitable capital outcomes. It is important to note that no level of price premium for very high-risk transactions can justify underwriting high-risk loans. Risk-adjusted Return on Capital (RAROC) is an example of a metric that is used to measure risk-adjusted returns for banks. RAROC is a modified ROI that takes elements of risk into account (see Figure 6.7, page 153).

- In this illustration, both Bank 1 and Bank 2 charge every customer in a tier a single "average" rate
- By segmenting customers more finely, Bank 2 is able to better tailor price levels to individual customers
- The result is that Bank 1 will only win the businesses of the lower credit quality customers within each of its segments for whom the "average" price is appealing - this can create adverse selection
- Higher credit quality customers within each tier will migrate to Bank 2's more competitively priced offering
- In addition to losing business, Bank 1 is left inappropriately priced for the risk levels it is assuming

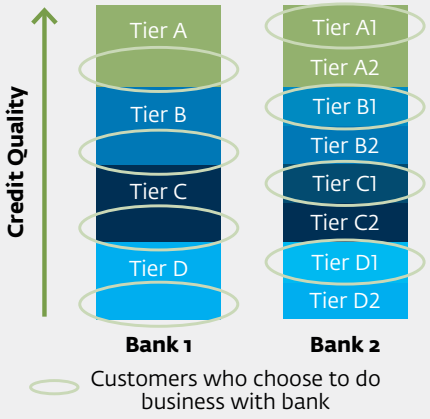



*Figure 6.6. Risk-based Pricing to Gain Competitive Advantage*

## *MSME Credit Portfolio Management*

Effective MSME credit management combines borrower-level risk management with portfolio management capabilities (Figure 6.8 on page 154).[179] Many FIs in emerging markets have historically considered the standalone review of relationships as portfolio management. However, the financial crisis of 2008 and most recently the impact of the COVID-19 pandemic has elevated credit portfolio management to the strategic and operational level. This is also recognized in Basel II and III.

Many banks are leveraging advanced data analytics to optimize loan portfolio management. There are viable use cases for AI in loan portfolio management. For example, these tools can help FIs to identify different types of loan portfolio concentration that may expose the bank to economic downturns, disproportionately affecting specific clients, sectors, and industries. This analysis enables banks to adjust portfolio exposure, reduce concentration, and optimize risk-adjusted returns. Additionally, predictive analytics can be employed to forecast loan defaults, detect early warning signs, and proactively manage NPLs.

| **RAROC "Risk Adjusted Return on Economic Capital"** | |
|---|---|
| Revenues (interest & fee income) | $$$ |
| - Cost of funds | (xx) |
| - Expected loss (Provisions) | (xxx) |
| + Capital Benefit | xxx |
| - Noninterest expense | (xxx) |
| - Taxes | (xxx) |
| **Risk adjusted return** | **xxx** |
| ÷ Economic capital (credit risk and/ or market risk capital) (operational risk capital) | xxx |
| **RAROC** | X% |

- **Revenues:** All revenues associated with a business line or transaction (target of measurement). Includes fee income and income from other sources.
- **Cost of Funds:** FTP rate or cost of funds.
- **Expected Loss:** Expected Loss or Provisions. Highly varied by jurisdiction. If similar measures, no issue. If varied, usually more effective to use Provisions and make economic adjustment in the denominator.
- **Capital Benefit:** Investment return on capital held. Use short-term treasury rate X Total Economic Capital. Often subtracts cost of sub-debt. If early-stage bank, take out this charge.
- **Risk Adjusted Return:** Final number should include taxes, noninterest expenses, and Cost of Funds / FTP charge.
- **Economic Capital:** All capital associated with target of measurement. Ideally based on economic capital calculation but may use one of regulatory capital measures. For credit business, does not include interest rate, assuming an FTP approach is in place. Includes operational risk.

*Figure 6.7. The Anatomy of RAROC*

[179] DBS Bank Ltd. (L. Antioch, author), n.d., Risk management for SME Lending: https://www.smefinanceforum.org/sites/default/files/post/files/457435_dbs_bank_ltd.pdf

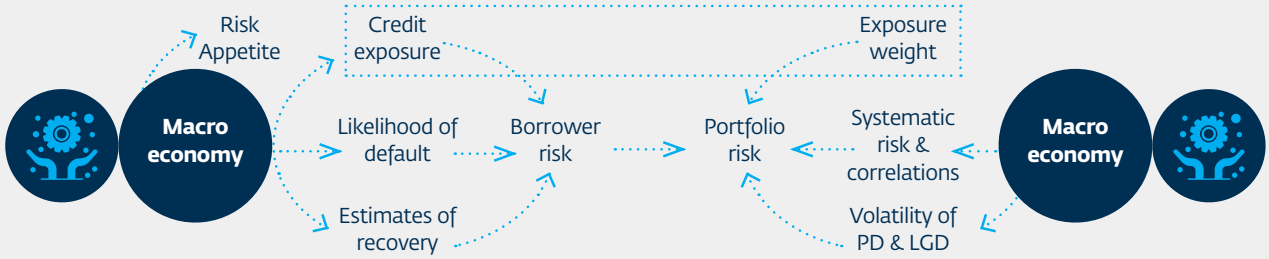



*Figure 6.8. A Holistic View of Borrower Risk and Portfolio Risk*[180]

## Repayment

Growth in digital sales and the use of digital transaction tools are creating many opportunities to improve credit repayment and collections.[181] MSMEs in Africa are increasingly using digital transaction tools and becoming less reliant on physical cash. These tools include digital wallets, digital invoices, digital purchasing orders, POS payments, mobile money, e-commerce sales, and payment gateways. This allows FIs the option to use digital tools to improve the ease, speed, and timeliness of credit collection, offering a more efficient alternative to MSMEs depositing cash in a branch or a traditional bank account, as illustrated in Table 6.2.

| | |
|---|---|
| Paid by the MSME: Deliberate payment at scheduled time using digital wallet | **Disruption:** Payment is made via a digital wallet |
| | **Advantage:** Improves speed, ease, and cost of collection. No need to create physical infrastructure for repayments |
| | **Disadvantage:** Lender has little control over repayment by MSME other than blacklisting the MSMEs that do not repay |
| Paid by the MSME: Automatic deduction from receivable | **Disruption:** Repayment is automatically deducted from receivables paid through digital channels |
| | **Advantage:** Ensures repayment is connected to income earned by MSME and allows the lender to be more flexible (i.e., no fixed maturity dates) |
| | **Disadvantage:** If MSME switches away from digital channels, the repayment mechanism no longer works |
| Paid by third party | **Disruption:** Repayment made by MSME's buyer through digital system, where funds are automatically deducted (e.g., from invoice) when payment is made |
| | **Advantage:** Improves the rate of repayment, with repayment aligned to receivables. May reduce risk where MSME's buyer is larger and has greater ability to pay |
| | **Disadvantage:** Requires the lender to know creditworthiness of the buyer; can be expensive |

*Table 6.2. Leveraging Digitalization to Improve Repayment*[182]

[180] Ibid.

[181] Dalberg, January 2019, Bridging the credit gap for Micro and Small Enterprises through digitally enabled financing models: https://www.findevgateway.org/sites/default/files/publications/files/external_190131_final_report_mses_cgap_external_final_updated-bisvb.pdf

[182] Ibid.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FIs can use AI to enhance their repayment and collection strategies. AI algorithms can create tailored collection approaches by analyzing borrower behavior, payment patterns, and risk profiles. These models can categorize delinquent accounts, prioritize collection efforts, and optimize resource allocation to maximize debt recovery while minimizing costs and customer attrition. Additionally, AI-driven sentiment analysis tools can monitor customer feedback, social media interactions, and communication channels. This allows banks to detect early signs of deteriorating credit quality, proactively engage with MSMEs, and provide tailored support to address their specific needs.[183]

## Portfolio Monitoring

The frequency and scope of credit relationship reviews should align with factors like exposure scale, default probability, credit grade, approval terms, financial covenants, borrower circumstances, facility operation, and cost-effectiveness. Automating parts of the review process can improve efficiency, and review criteria should be outlined in the MSME credit policy. Regular reviews should match the borrower's risk profile, with at least annual reviews for small and medium clients, including risk rating assessments.

Probability of default ratings and credit grades should be monitored continuously and updated when material information arises, such as new financials or market changes. Any changes to these ratings require approval through appropriate channels, with the relationship manager responsible for accuracy, supported by the credit department.

Site visits conducted post-disbursement allow the relationship officer to evaluate client compliance, covenant adherence, profitability, and cross-selling potential. Automated portfolio management can reduce workload and enhance accuracy but should not replace site visits, which are crucial for managing MSME credit risk, building client relationships, and supporting cross-sell opportunities.

## Early-warning Indicators

Leading FIs integrate early warning indicators into effective credit relationship monitoring to maintain portfolio quality and prevent losses from deteriorating credit. Traditionally, these indicators rely on arrears, identifying issues only after accounts become past due. However, early warnings can now be triggered by historical data insights and patterns in behaviors like high credit utilization and frequent payment delays.

Machine learning enables institutions to analyze large datasets, automating early warnings and suggesting actions, including optimized recovery strategies. By incorporating alternative data and advanced analytics, qualitative factors are automatically assessed, and expert judgment is embedded within the process, enhancing debtor evaluation and recovery approaches.[184]

## Stress Testing

FIs should take into consideration potential future changes in economic conditions when assessing individual credits and credit portfolios and should assess their credit risk exposures under different scenarios.[185] Stress testing is an important risk management tool that alerts management to adverse unexpected outcomes to a variety of risks, informing risk appetite and contingent mitigating actions. FIs can use third party models if they do not have the internal capability, and they should recruit specialists if the skills are not available internally. Where third-party models are used, management should fully understand how the model works. Management remains accountable for ensuring the robustness of the stress testing framework, including responsibilities for scenario generation and articulating applied assumptions.

[183] Diminishing Efficacy of credit Score for SMEs and rise of AI in SME lending, Shrikant Patil, LinkedIn, April 3 2024.

[184] Designing Next Generation Credit-Decisioning Models, McKinsey & Company, 2021.

[185] Principle 13, Basel Committee on Banking Supervision, 2013, Principles for effective risk data aggregation and risk reporting: https://www.bis.org/publ/bcbs239.pdf

©Wirestock/IFC

Stress testing for a credit portfolio can be broadly divided into several types:

**Scenario Analysis:** This involves applying specific, hypothetical adverse economic scenarios to assess potential portfolio impacts. Scenarios may include recessionary periods, market shocks, or sector-specific downturns, examining how credit quality and default rates might respond under extreme but plausible conditions.

**Sensitivity Analysis:** This approach tests the portfolio's resilience to changes in individual risk factors, such as interest rates, inflation, or exchange rate fluctuations. Sensitivity tests provide insights into how sensitive the portfolio is to specific variables, helping to identify key vulnerabilities.

**Reverse Stress Testing:** Rather than applying predetermined scenarios, reverse stress testing explores the types and severity of conditions needed to cause significant portfolio distress or failure, helping FIs understand their risk thresholds.

**Qualitative Stress Testing:** Often used alongside quantitative methods, qualitative stress testing evaluates non-numeric aspects of risk, such as management effectiveness, operational risks, and policy impacts. It focuses on narrative assumptions, management practices, and qualitative risk factors.

**Integrated or Enterprise-wide Stress Testing:** This combines multiple risk factors and scenarios across the entire organization, including credit, market, and operational risks, to evaluate systemic impacts on the credit portfolio in conjunction with broader business risks.

These stress tests provide a comprehensive view of the credit portfolio's resilience, helping to guide risk mitigation strategies and ensure capital adequacy under adverse conditions.

A best-practice stress testing framework includes three stages:

*Scenario generation:* Identification of relevant risks, contagions, and concentrations, and agreeing on scenario sets that challenge conventional wisdom.

*Analytics:* Assessing impact of scenarios on businesses and enriching current measures and metrics (e.g., capital earnings).

*Use:* Developing risk mitigation techniques, contingent strategies, and linking monitoring and forecasting into risk appetite.

Best-practice FIs use multi-disciplinary teams to agree the scope and governance of stress testing. Data should be used from across the FSP and from external sources to assess potential impact in terms of capital, liquidity, and asset quality. The scope of stress testing should cover all risks identified as material under the FSP's risk identification and assessment process for the MSME portfolio, with a view to considering how much capital the FSP needs to cover potential unexpected losses arising from such risks.

Legacy systems, poor data quality, and data aggregation capabilities are often key impediments to developing a robust stress testing framework. A pre-requisite for such a framework includes a suitably flexible IT infrastructure, as well as data of appropriate quality and granularity. The infrastructure should enable the bank to quickly aggregate its risk exposures and easily change methodologies to apply new scenarios as needed. There is also a need to accommodate targeted or ad hoc stress tests to assess specific risks in times of stress. In this respect, banks can leverage innovative digital technologies to automate the stress testing process, ensuring that good quality data can be collected, analyzed, aggregated, and safely stored. Automation can also enable generation of ad-hoc reports that capture stress testing outcomes tailored to the needs of the audience.[186]

[186] Designing Next Generation Credit-Decisioning Models, McKinsey & Company, 2021.

Incorporating big data analysis and AI into stress testing can significantly enhance the accuracy and objectivity of results. Traditional stress testing is often guided by the judgment and experience of those designing the tests, which can introduce subjective biases and limit the scenarios' effectiveness. Success hinges on identifying relevant risks, selecting plausible yet severe scenarios, accurately interpreting results, and developing practical, actionable mitigation and contingency plans.

Big data analysis and AI address these challenges by analyzing vast amounts of diverse information from multiple sources, such as economic indicators, customer data, and market trends. This data-driven approach helps identify risk patterns that might go unnoticed with conventional methods, leading to more comprehensive and relevant risk identification. AI algorithms can simulate a wide array of scenarios, adapting to real-time data to ensure that scenarios reflect current market dynamics and potential future shifts, thereby improving the realism of stress tests.

Furthermore, AI aids in interpreting stress test results by recognizing subtle correlations and offering insights into complex relationships within the data. By automating the analysis, AI removes some of the subjective interpretation, leading to more accurate insights. AI also provides actionable recommendations based on historical outcomes and pattern recognition, making contingency and mitigation plans more realistic and tailored to potential outcomes. Through these capabilities, big data and AI transform stress testing into a more rigorous, responsive, and objective process, strengthening risk management strategies and enhancing overall resilience.

FIs should perform stress testing at least once every quarter. On an annual basis, stress testing should be incorporated into the capital planning and budgeting cycle. Solvency stress testing should evaluate the organization's financial position under a severe but plausible scenario or shock and provide an indication of how much capital might be needed to absorb losses should a shock of this nature occur. Further ad hoc stress tests may be warranted when there are special circumstances, for example in rapidly deteriorating political or economic conditions.

The results should also inform risk appetite, strategy and capital planning and should be incorporated into the organization's Internal Capital Adequacy Assessment Process. The results can also be used by regulators to assess the FSP's ability to continue to meet its capital requirements under severe adverse conditions. For this purpose, it is important that all stress tests are documented and available for regulator review.

## Managing NPLs

In Africa, while there remains a reliance on lagging indicators such as days past due, especially 90 days past due or more (in compliance with regulatory minimum reporting in some jurisdictions), there is a rapid increase in predictive models that calculate leading indicators such as PD, LGD, and EAD in line with International Financial Reporting Standards (IFRS). FIs should centralize all NPLs after 90 days into a dedicated unit using collection scorecards and a dedicated management information system. Predictive models identify risks in the portfolio early and reduce the potential for loss. As mentioned in the Repayment section above (page 154), this process can leverage digital technologies for greater accuracy and efficiency.

## Risk Reporting

Accurate, complete, and timely data are essential for effective risk management. However, data alone are not enough to ensure that the board and senior management receive the necessary information for informed decision-making. Effective risk management requires that the right information is delivered to the appropriate individuals at the right time. Risk reports derived from data must be accurate, clear, and comprehensive. They should include relevant content and be presented to the appropriate decision-makers in a timely manner, allowing for a prompt and suitable response.[187]

[187] Ibid.

The BCBS 239 principles, established by the Basel Committee on Banking Supervision, provide guidelines for effective risk data aggregation and reporting to strengthen risk management across FIs. These principles focus on enhancing the quality, timeliness, and reliability of risk reporting, particularly in times of financial stress, and include the following key areas:

*Governance and Infrastructure:* Banks should establish strong governance frameworks and reliable IT infrastructure to ensure that risk data aggregation and reporting processes are accurate, timely, and robust.

*Data Accuracy and Completeness:* Risk data must be precise and complete to support accurate risk measurement and analysis. FIs should ensure data are free from gaps and errors, providing a complete view of risk exposure across the organization.

*Timeliness:* Risk reporting should be timely, enabling rapid decision-making. Reports need to be generated quickly enough to support management action in both regular and stress scenarios.

*Adaptability:* Reporting systems should be flexible, able to handle changes in regulatory requirements and new risk metrics as financial markets and risks evolve.

*Risk Data Aggregation:* FIs should be able to aggregate risk data from across the organization to provide a holistic view of their risk profile. This ensures that all risk types, business lines, and geographical locations are included in the reporting process.

*Clarity and Usefulness:* Reports should be clear, well-structured, and tailored to the needs of stakeholders. This involves presenting complex risk data in a way that is understandable and actionable for decision-makers.

*Controls and Data Quality Assurance:* Processes should be in place to ensure ongoing data integrity, with regular checks and validation mechanisms to uphold data quality.

By adhering to BCBS 239 principles, FIs can create risk reports that enable effective risk management, better meet regulatory expectations, and support informed decision-making, ultimately strengthening the institution's resilience.[188,189]

## *How to Approach Digitalization of MSME Credit Risk Management*

The digitalization of MSME credit risk management should not be addressed in isolation from an organization's overall digital strategy. Such an expensive and disruptive process must be well conceived, carefully planned, and meticulously executed. Failure to align the MSME credit management digitalization process to the overall digital strategy will impact choices with respect to technology, partnerships, and ecosystems. Consideration should also be given to additional capabilities that enable better customer experience, as well as the development of new products and channels. FIs normally prefer to start with identifying and implementing solutions that provide quick wins from a digitalization perspective. While these may prove to be cheaper and faster to implement in the short term, they may turn out to be costly in the long run. Most of the cost arises from wrong technology choices and/or ill-advised partnerships/ecosystems selections. Additionally, addressing digitalization in a haphazard manner may end up perpetuating the legacy system challenges because seamless integration may become expensive or impossible.

[188] Basel Committee on Banking Supervision Principles for effective risk data aggregation and risk reporting, January 2013: https://www.bis.org/publ/bcbs239.pdf

[189] BCBS 239 Principles for effective risk data aggregation and risk reporting, PWC, 2019: https://www.pwc.com.au/financial-services/pdf/principles-for-effective-risk-data-aggregation-sept19.pdf

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# 7

# Looking into the *Future*

*Enhancements in data availability and analytics, automation, AI, distributed ledger technology (DLT), and the increasing digital adoption of technology by MSMEs will continue to expand access to and availability of financial services for MSMEs. Effective deployment of these evolving technologies will allow financing of MSMEs at lower costs, with an increasingly diverse range of products and services and an accelerated and more transparent financing process, addressing some of the key challenges faced by FIs in serving MSMEs.*[190]

*This section provides an overview of some of the evolving technologies and their potential applications in serving MSMEs.*

## Artificial Intelligence

Advances in AI promise accurate predictions based on statistical models with little structure. These models are becoming much more promising with the enormous rise in data and computing power, creating applications in predictive modeling for assessing MSME product usage and credit risk.[191] The use of AI in customer engagement is expected to rise, alongside its increasing application for improving traditional credit-scoring and underwriting models in MSME lending. Boston Consulting Group quantifies this potential, stating that companies can extract up to 40 percent more lifetime value from clients by enabling hyper-personalized, end-to-end customer management at scale.[192]

Africa is poised to benefit from advancements in AI innovation anticipated from the likes of Google's AI lab in Ghana and Microsoft's African Development Centers in Kenya and Nigeria.[193] Chatbots are a relatively easy entry point for FSPs experimenting with AI for customer engagement and management. Although very common in other industries, chatbots are still considered relatively new in banking. Chatbots in the market vary in sophistication and capabilities and are rapidly advancing. Some are standalone, while others use existing platforms, such as WhatsApp, to provide an easier transition for both providers and customers.

It is reasonable to expect that WhatsApp chatbots stand to grow in popularity across Africa. The platform is the most popular messaging app on the continent and has significant penetration in countries such as Kenya (97%), Nigeria (95%), and South Africa (96%).[194] In Zimbabwe, WhatsApp accounts for almost half (44%) of the country's mobile internet use. WhatsApp is also directly encouraging more African MSMEs to use the platform. In 2022, the company's "WhatsAppreneurs" campaign profiled MSME owners and WhatsApp Business users across Africa to let other MSMEs know how the app can help them reach more customers and grow their businesses.[195]

As more MSMEs adopt WhatsApp, MSME finance providers can look to successful chatbot applications using the platform for inspiration. Nigeria-headquartered United Bank for Africa (UBA) launched its AI chatbot, Leo, on WhatsApp in 2018; this allowed customers, including MSMEs, to check account balances, transfer funds, pay bills, and perform other basic banking services.[196] After initially deploying on Facebook Messenger, UBA expanded to WhatsApp to leverage the platform's popularity and sizeable user base.

Leo's functionality has evolved over time to enable new features such as 3D animation and multi-language capability, and additional services including budgeting (spending and savings monitoring), weather reporting, and complaints tracking.[197] In the five years since its inception, Leo is recognized as an award-winning "virtual banker," with over three million users in 20 African countries across five major platforms; in addition to Facebook and WhatsApp, Leo is now available through Apple Messages for Business, Google Business Chat, and Instagram.

## Distributed Ledger Technology / Blockchain Finance

Blockchain technology can potentially revolutionize how MSMEs access finance from traditional lending institutions. Using DLT,

[190] University of St. Gallen, Swiss Institute of Small Business and Entrepreneurship, n.d., The future of SME financing: https://www.six-group.com/dam/download/company/report/whitepapers/six-whitepaper-future-of-finance-en.pdf

[191] Ibid.

[192] BCG, n.d., Boosting Customer Value with AI, retrieved July 2023 from https://www.bcg.com/beyond-consulting/bcg-gamma/ai-powered-customer-management

[193] CNN (Aanu Adeoye, author), April 16, 2019, Google has opened its first Africa Artificial Intelligence lab in Ghana: https://www.cnn.com/2019/04/14/africa/google-ai-center-accra-intl/index.html

[194] Verint (Harry Rollason, author), December 22, 2021, What Countries are the Biggest WhatsApp Users?: https://www.verint.com/blog/what-countries-are-the-biggest-whatsapp-users

[195] Vanguard (Juliet Umeh, author), June 14, 2022, WhatsApp moves to encourage MSMEs with launch of WhatsAppreneurs campaign: https://www.vanguardngr.com/2022/06/whatsapp-moves-to-encourage-msmes-with-launch-of-whatsappreneurs-campaign

[196] UBA Group, September 4, 2018, Leo is Live on WhatsApp: https://www.ubagroup.com/57-marina/leo-is-live-on-whatsapp

[197] UBA Group, n.d., Welcome to My Universe, retrieved July 2023 from https://www.ubagroup.com/leo

FIs can target MSMEs in a number of ways, from providing time-stamped, verified identity credentials, to broadening the information available for assessing creditworthiness and reducing loan risk, and for improving trade finance by enabling participants from different sectors to interact and share information in a more easily verifiable and decentralized manner.[198] By providing a single mechanism for tracking various steps in the trade finance process—orders, contracts, documentation, shipments, customs, delivery—blockchains could enhance interoperability among previously incompatible systems, improve accuracy, and eliminate redundancy.

A more radical implementation of DLT/Blockchain is Decentralized Finance (DeFi), which is evolving in response to financial concentration in a bid to provide a more free and fair financial opportunity to all via the internet. While DeFi requires some regulation to achieve its core objective of decentralization, it also potentially offers an opportunity for the development of an entirely new way to design regulation: the idea of 'embedded regulation.'[199] This could potentially decentralize both finance and its regulation. There is a sense that DLT-based systems in general, and DeFi in particular, would be successful in bridging the financial gap faced by MSMEs[200] and in increasing financial inclusion of MSMEs.[201]

Another critical area increasingly influenced by DLT is cross-border payments, enabling a secure mechanism to digitally transfer payments across borders, whether for sending money home or for making and receiving payments in cross-border trade. One such example[202] is the Ghanaian fintech Mazzuma, initially a mobile money-based payments app, which has since integrated blockchain technology and AI to enable peer-to-peer payments. The Mazzuma token (MAZ) is the payment medium in the Mazzuma ecosystem that enables immediate payments and remittances that incur low fees. Mazzuma has created a solution that combines the efficiency and scalability of mobile money with the security of cryptocurrencies, resulting in a robust system that promotes financial inclusion. The technology has significantly reduced transaction costs and durations and enabled secure transfer of funds.

## Crowdfunding

While bank loans are essential to address MSME financing needs, a growing number of financing options are emerging for MSMEs, although some of these are still at an early stage of development in Africa. Crowdfunding platforms allow MSMEs to tap into a wider pool of potential investors, including individuals, organizations, and FIs, which may not have access to traditional investment channels.[203] Typically, each investor provides a small portion of the overall funding, with the instrument allowing MSMEs to seek financing directly from investors without an intermediary. On these platforms, MSMEs have greater control over the terms of their fundraising (including the amount of capital they wish to raise), the interest rates or returns they are willing to offer, and the timeline for repayment.[204]

The Cambridge Centre for Alternative Finance, in a 2016 report, estimated the African crowdfunding market at $182 million, and estimated the sub-Saharan crowdfunding market to reach $2.5 billion by 2025.

There are multiple crowdfunding sites operating across Africa, catering to a broad range of investor categories, each requiring a formal plan to attract investors. Cape Town-based Thundafund offers investors rewards based on their contribution while Uprise. Africa provides an equity-based return. To gain equity funding,

[198] GPFI (SME Finance Forum, IFC, WBG), 2020, Promoting Digital and Innovative SME Financing: https://www.smefinanceforum.org/post/publication-promoting-digital-and-innovative-sme-financing-g20

[199] Zetzsche, D. A., et al., 2020, Decentralized Finance (DeFi), Journal of Financial Regulation 6, 172-203: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3539194

[200] Trade Finance Global, 2022, Advantages of blockchain and DLT for MSME access to finance: https://www.tradefinanceglobal.com/blockchain/blockchain-advantages-msmes/

[201] Organisation for Economic Co-operation and Development (OECD), 2022, Why Decentralised Finance (DeFi) Matters and the Policy Implications, OECD Publishing, Paris: https://doi.org/10.1787/109084ae-en

[202] CV VC, in collaboration with Standard Bank, 2021, The African Blockchain Report 2021: https://www.standardbank.com/sbg/standard-bank-group/newsroom/news-and-insights/South-Africa-amongst-biggest-Blockchain-markets-in-Africa

[203] CGAP, 2019, Digital Credit Models for Small Businesses: https://www.cgap.org/research/publication/digital-credit-models-for-small-businesses

[204] Ibid.

different kinds of businesses have used Uprise.Africa, including Drifter Brewing Company, a South African craft beer manufacturer, which raised almost ZAR 3.9 million ($175,521) from 235 investors in exchange for a 12 percent equity stake. Examples of recent projects on Thundafund include a female automobile engineer, who raised ZAR 300 ($17.55) for a toolbox, and a meat distribution business seeking ZAR 150,000 ($8,776) to purchase refrigerated vehicles and stock.[205]

## BigTech and Industry Partnerships

To succeed in a rapidly changing MSME banking market, and with the emergence of competition from BigTech, the largest IT firms in the world,[206] strategic partnerships may be crucial. Banks and fintechs compete in the same space, but they have complementary advantages. Existing banks have reputation, stability, brand, a large customer volume, deep insights into the sector, and access to developed banking infrastructure; fintechs have great agility and innovation. Historically, banks have successfully adopted many fintech innovations into their daily workflow. In advanced fintech ecosystems such as Europe and the United States, partnerships between banks and fintechs have been successful.[207] Banks also acquire fintech companies, and vice versa, in a bid to expand their functional rights and capabilities.[208]

BigTech companies have increasingly made significant inroads into the payments and lending spaces. Given their size, scale, and expanding role in the daily activities of MSMEs, they are considered serious competitors by both banks and fintechs. The accelerated digitalization of business and finance during the COVID-19 pandemic led to new and successful partnerships between BigTech and fintech to support MSMEs during the crisis; such partnerships are often preferred by companies seeking financial services.[209] Globally, BigTech credit has grown sharply and has overtaken fintech credit by a large margin.[210]

While this handbook, and this section specifically, covers the increasing role technology is playing in transforming the FSPs, the MSMEs, and the ecosystem that both operate in, the fast pace of evolution in both the creation and adoption of technologies is challenging to predict precisely. As outlined in this section, there are multiple technology developments that are being tested in different markets across the world, with their usage, outcomes and benefits, as well as potential risks, being discovered. One aspect, however, is abundantly clear; the future of MSME finance is going to be increasingly influenced and enhanced with technology, creating opportunities for FSPs to access the various MSME segments, and for MSMEs to access financial services in order to grow and prosper.

[205] Africa Renewal (authored by Finbarr Toesland), 21 July 2022, 'Crowdfunding emerging as financing source for African entrepreneurs', https://africarenewal.un.org/en/magazine/crowdfunding-emerging-financing-source-african-entrepreneurs

[206] Big Tech typically refers to the big five U.S. tech companies: Alphabet, Amazon, Apple, Meta, and Microsoft; but it can also include, for example, Chinese companies such as Baidu, Alibaba, Tencent, and Xiaomi.

[207] IFC, 2018, Financing India's MSMEs - Estimation of Debt Requirement of MSMEs in India: https://www.intellecap.com/wp-content/uploads/2019/04/Financing-Indias-MSMEs-Estimation-of-Debt-Requireme-nt-of-MSMEs-in_India.pdf

[208] S&P Global Market Intelligence, 2023, Fintech deals for banks still make sense despite scrutiny, advisers say: https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/fintech-deals-for-banks-still-make-sense-despite-scrutiny-advisers-say-73625473

[209] IFC, 2018, Ibid.

[210] https://www.econstor.eu/bitstream/10419/232393/1/CESifo-Forum-2021-02-p30-34.pdf

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