

# Digital Transformation of Microfinance and Digitalization of Micro Financial Services in India

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## Abstract

Microfinance is one of the many fields in which digital technologies are fast making headway, and this trend is expected to continue in the foreseeable future. The continuous advancements that are being made in digital technology are helping to transform its operational models, governance structures, risk profile, industry networks, and popular practises. These shifts are being brought about as a result of the interaction of a number of different variables. Because of their capacity to foster growth, innovation and the incorporation of digital technology are both major factors in today's world. Innovation has the potential to advance development by enhancing productivity and expanding participation. Integration of digital technology has the potential to increase both productivity and accessibility. In this paper, we investigate how these three mechanisms – innovation, inclusion, and efficiency – have been fundamental to microfinance operations in the past, as well as how advancements in digital technology may present microfinance institutions with additional opportunities to further the cause of international development. In addition, we look at how microfinance institutions can take advantage of these opportunities to further the cause of international development. In order to investigate the ways in which developments in digital technology are influencing the microfinance industry, we will use several instances from the Indian microfinance industry.

*Keywords: Microfinance, Digitalization, Micro Financial Services, Financial Inclusion, Innovation*

## Introduction

The history of the microfinance sector is a long and tumultuous one. Microfinance emerged as a result of attempts to tackle poverty via capacity-building and women empowerment, and it is now a significant component of banking systems in developing countries. Microfinance organisations are financial intermediaries that have made their mark by using novel techniques to achieve objectives that were previously believed unattainable by traditional banking institutions. Customers from low-income groups who were largely involved in income-generating activities in the informal sector received minor loans from

these organisations without the need to put up any collateral (Jayadev, 2016). For a long time, it was thought that the free market was incapable of providing effective and efficient financial services to the poor. While microfinance pioneers such as those behind Bangladesh's Grameen Bank established that it was feasible to run a "social company," others have questioned if this is viable (Cull, et al. 2009). Innovative financing approaches, such as the shared liability approach, were at the core of that success story since they reduced the chance of failure while still ensuring payback. Because of their success, these groups were able to offer financial services, most notably credit, to the impoverished in an economically viable way on a broad scale. Because of inadequate information about the borrower's creditworthiness, high transaction costs, and a lack of collateral, the formal banking system has consistently failed on these issues. When it came to 'banking the unbankable,' microfinance organisations accomplished the unimaginable. Microfinance has long been seen as a critical instrument for poverty alleviation and financial development in developing countries across the world. The enormous potential for enhancing financial access was identified as the tool's most significant strength. Development literature has been extremely specific on how increased access to finance is expected to decrease inequality while simultaneously promoting economic growth and alleviating poverty (for example, Demirgüç-Kunt et al. 2007). It has been pointed out that microfinance should not be seen just as a poverty alleviation tool, but rather as an essential component of a developing country's overall financial development plan, as has been suggested (Barr, 2005). In the opinion of Barr (2005), this may happen in a variety of ways, beyond reducing poverty and generating livelihoods, microfinance operations may help to broaden markets, which in turn helps to progress the development of financial services and products. They might also be used as a tool for development in situations where bad governance is a result of weak formal institutions or an insufficient legal and policy framework. They also aid in the development of the banking sector and the maturation of the financial market, which is particularly important in emerging nations. In addition, since they tend to boost competition while also bringing about financial liberalisation, they may be used as part of measures to encourage domestic financial reforms. With the integration of digital technology, the microfinance industry is on the verge of undergoing a profound revolution in terms of its features and organisational structure around the globe. In this study, we want to examine how advancements in digital technology might assist the microfinance sector in better fulfilling its development-related responsibilities in the context of India's economic growth.

### **The Digital Revolution**

Digital technologies are gradually gaining popularity throughout the globe, permeating many facets of human existence. Individuals, organisations, and policymakers are all benefitting from digital technologies that are opening up new lines of communication, extending options, and boosting performance. Microfinance institutions are rapidly recognising that digital transformation is a must in today's world (MFIs). Customer service was digitalized as a result of the pandemic problem in order to assure continuing access to financial services. As a result, microfinance providers are being pushed to improve their back-office systems in order to accommodate data that is flowing in via digital channels. Additionally, internal communication and connection technologies were upgraded in order to better meet the needs of employees who operate from distant locations. The constant need to cut costs, improve efficiency, and expand in terms of size and reach also encourages institutions to automate their procedures. Without even mentioning the rivalry between Fintechs and banks, both of which are dealing with comparable pandemic-related concerns. While the need for digital transformation is widely recognised, the route to achieving it is neither straightforward nor apparent, for a variety of reasons. First and foremost, financial institutions (MFIs) have legacy systems (operations that were developed prior to the digital age) that must be modified and replaced. The resources required for this include time and money, neither of which are easily accessible at this time when concerns relating to crisis management and business continuity are the

top priorities for the organisation. Second, digital transformation necessitates the development of skills that are often lacking among present MFI employees. To make things worse, many MFIs are unable to pay market-level compensation to the IT specialists that would be required to assist them in becoming digital organisations. Third, technology is growing at a rapid pace, making it difficult to pick proven solutions. With limited resources, many microfinance institutions (MFIs) use a step-by-step strategy, implementing a select few digital technologies that have been shown to provide value and increase operational efficiency. It is becoming more evident that taking a piecemeal approach to integrating digital tools and procedures will not be sufficient to drive an organisation over the digital barrier. More than new tools and standards are required for digital transformation to be successful. People and culture play a vital influence, as does the desire and aptitude of consumers to work in a digital arena, all of which are important factors. According to the MFC study, new efforts that microfinance institutions implemented in 2019 and 2020 to boost their digital operations and utilise new technology to increase efficiency and customer service are being investigated by the organisation. It is given in the context of the Digital Transformation Framework (DTF), which acts as an organisational tool for monitoring progress in digital transformation for microfinance institutions (MFIs).

### **Objective of the Paper**

The paper tries to have a deeper understanding and access the impact of digitalization of Microfinance services and industry and further investigates the changes brought by digitalization. The primary objectives of this paper are: -

To examine and understand the impact and challenges of digitalization of Microfinance.

To review the digital solutions employed by the Microfinance Provisions in India.

### **Research Methodology**

Secondary data were collected for the purpose of this study from a variety of sources, including but not limited to NABARD and annual reports of Sa-Dhan, MFIN, PwC, and others; newspapers; government websites; reference books; and papers and reports published on Digitalization of Microfinance Services. This was done in order to satisfy predetermined objectives and research questions.

### **Literature Review**

Chintala G R (2015) has done a study on digitalization of SHGs. In the study author has used analysis of secondary data and field level experiences during the implementation of the pilot project of E-shakti in Dhule district of Maharashtra and Ramghar district of Jharkhand. The study emphasised on the digitalization of SHGs for easing the processes of information shortage and reducing the transaction cost.

Malarvizhi P and Manjul P (2016) in their study looked into how microfinance has played its role in digital financial inclusion in India. The study provides an insight to various modes of delivery of microfinance in India along with digital channels used for enhancing financial inclusion. The study also highlights the performance and progress of MFIs in India. The study concluded that in order to strengthen Microfinance institutions need to create confidence among stakeholders besides government playing proactive roles by ensuring provision of funds for productive and development activities.

Agarwal P and Sen S (2017) in their study looked how Digital economy impacts MFI and their service delivery. The paper focuses on scale up of Microfinance institutions where the key issues are diversification of access to funds, innovations, in distribution, infrastructure and education, and the use of new technology such as Mobiles and Aadhar scheme. The paper further discusses the factors and theoretical

positions associated with evolution of microfinance and its global acclaim based on it being a win-win proposition for both MFIs and customers. For the study authors used different case studies to put away the point.

Srinivas V and Mahal R (2017) have done a study on how microfinance sector has been digitally transformed over the past two decades. For better understanding of the process of digitalization of MFIs and its services, the study divided the whole process into different phases. For the study, authors used secondary data from microfinance sectoral reports and news articles. The paper further emphasized on challenges and bottlenecks like huge cost, digital and financial illiteracy, and poor customer base in the roads of adopting digital technologies and digital payment methods.

Roy S et al (2018) in their paper discusses the integration of digital technologies in Indian microfinance sector. In the study authors explored how innovation, inclusion, and efficiency have been integral to microfinance operations and how innovation in digital technology is yet another opportunity for MFIs to promote development. This study concluded that although digital technology will go long way in development of MFIs and expanding the services provided by MFIs to many. Also, the paper highlighted the possibility of digital divide and inequality between MFIs being the reality.

Saon, et al (2018) explored & discussed how current generation digital technologies are shaping the Microfinance sector in the subcontinent. Their paper sheds further light on the importance of "innovation", "efficiency" & "inclusion" have been & will play an important role in the success of the sector in the country. The article concludes by stating the prospects of the sector in the near future & the suggested technological advancements mightn't be enough to bolster the development of the sector. According to the authors, while trained human resources are in abundance in the country, a motivated regulatory framework along with a country-specific business model is all that's required for now.

Sexena A (2019) in his paper discusses the E-Shakti Programme of NABARD for digitalization of SHGs. The paper further looked into enhancing digital financial inclusion in India by targeting SHGs through digital mode of E-Shakti. The paper further endeavour to highlight the issues faces by the SHGs and banks at the time of disbursing the credit to the rural poor just because of the manual bookkeeping of accounts. The paper concludes by emphasizing the need of digital empowerment of the microfinance industry.

Prabhala and Rao (2019) have done a study on the digitalization of SHGs with the increasing mobile useage in India. The authors shed light on the impact of digital technology on microfinance by performing a case study on various SHGs in India. The authors state how resource allocation can be better tracked provided with efficiency through mobile technology. By enabling SHGs to go completely mobile, the financial institutions could better identify the NPAs & reallocated funds from them elsewhere for better outreach.

Joseph MG et al (2021) in their study reviewed digital solutions employed by MFIs in India. The study looked into how digital inference in MFI is shaping company's organizational models, governance systems, risk profiling, business networks, and other activities. For the authors have used results of different surveys and studies. The study further concluded that digital technologies are easier to be embarrassed by the big MFIs but with the huge cost of fintech, the digital technologies are still at a distance with smaller MFIs.

### **Digitalization of Micro Financial Services in India**

The advancement in digital technology is becoming increasingly significant at this juncture because Microfinance Institutions are rapidly adopting digital technology, which is in line with the trends that are now prevalent in the financial industry. Since the late 2000s, one of the most important policy priorities has been to address the urgent need to better incorporate technology into microfinance operations. Prior to this, the institutional assistance programmes that were offered to MFIs were mostly geared toward

addressing demand-side challenges and increasing the capability of human resources. The previous editions of the Status of Microfinance reports, the Bharat Microfinance reports, and the Inclusive finance reports were reviewed in order to gain an understanding of how the concept of technology made its way into the microfinance industry. It was discovered that technological advancements were a recurring theme in capacity-building programmes beginning in 2003–2004 and continuing beyond. The objective was to implement new ideas that are beneficial to both outreach and sustainability. During this period, numerous pilot initiatives to encourage the integration of technology were carried out. A few examples of these programmes are Computer Munshi, e-Grama, and branch automation. While the first initiative, known as e-Grama, was designed to establish information centres in rural areas, the other two programmes focused on enhancing the record-keeping abilities and productivity of field employees. Technology was viewed as a tool or a technique to improve operational efficiency, particularly in the back-end processes. There was broad adoption of management information systems (MIS), automated teller machines (ATMs), interactive voice response (IVR) systems, and other similar technologies because the clear incentive in terms of efficiency improvements was enticing. Other technological innovations that were made during this time period included specialised software for the management of loans, accounting, human resource management and monitoring. Some examples of software that Microfinance Institutions (MFIs) have used include Delfix Nano, Bijli, Ganaseva, and Efimo.

However, in order for there to be a significant shift in strategy regarding the deployment of technology in the MFI sector, there needed to first be widespread penetration of mobile-based technology at a variety of levels of operation. This process was made easier by the widespread adoption of mobile technology, the internet, and mobile banking, which made it abundantly evident that technology was the primary force behind expanding access to financial services. During this stage, the attention was concentrated on the effect that technology has on inclusion. In addition to this, the MFI business was through a phase of recovery during this time, during which the institutions were actively searching for various operational models in order to expand their reach. This allows the digitization of front-end processes through real-time data entry, geo-tagging, financial literacy videos to teach clients, etc. One of the earliest examples of a company successfully utilising mobile technology was that of Sonata Finance Pvt. Ltd. (Sa-Dhan, 2015). The large-scale adoption of mobile technology brought in multiple benefits for the company, as it allowed the company to track transactions in real-time, fetch real-time reports, digitise physical records, and improve transparency and process efficiencies. The company was one of the first few to use mobile technology in loan approvals and disbursements (Sa-Dhan, 2015).

In recent years, there has been a string of innovations that is driving a rapid change in the industry's procedures. As an illustration, more microfinance institutions (MFIs) of all sizes are using cash-lite methods for disbursements and repayments, despite the fact that there is worry regarding the high initial costs. In spite of the fact that these are in part caused by the continuous advancements in the financial services sector, there are also some other drivers that are equally as essential. The state is a significant player in this scenario because there is currently an initiative underway to promote digitization across the country. Through programmes like Digital India, the Digidhan mission, Jan Dhan Yojana, and the JAM trinity, the government of India has worked to accelerate the digital revolution taking place in the country. It has become clear that the establishment of a payment ecosystem in the nation that is both impartial and open has been advantageous to the MFI industry. MFIs now have the ability to offer a wider variety of products and to take advantage of digital finance thanks to the growing use of Immediate Payment Services (IMPS), Unified Payment Interfaces (UPI), and National Unified Short Message Service Platforms (NUUP). The increasing proportion of cashless disbursement relative to overall loan disbursement is a visible example of the transition to digital finance as it is nearly 100% of the total loan amount disbursed was cashless in the year 2021-22 from nearly 45% in the year 2017-18 (Sa-Dhan 2018, MFIN 2022). The cashless mode

gained pace to the point that there have been instances of institutions totally converting to the cashless mode for loan disbursal and other digital initiatives such as E-KYC indicating that the cashless mode is becoming increasingly popular (Sa-Dhan, 2017). Integration of technology is also happening in the sector of bank-linked SHGs, which is often behind that of MFI institutions when it comes to this aspect of the industry. The E-Shakti programme of NABARD, which attempts to attempt to promote digitization among self-help groups, is a noteworthy initiative. The programme aims to address issues relating to the quality of bookkeeping, multiple memberships of SHG members, credit history of members, etc., among other concerns. In this context, technology facilitates access to inexpensive finance by eliminating information asymmetries that have previously prevented small and homegrown businesses from becoming integrated into the broader financial system.

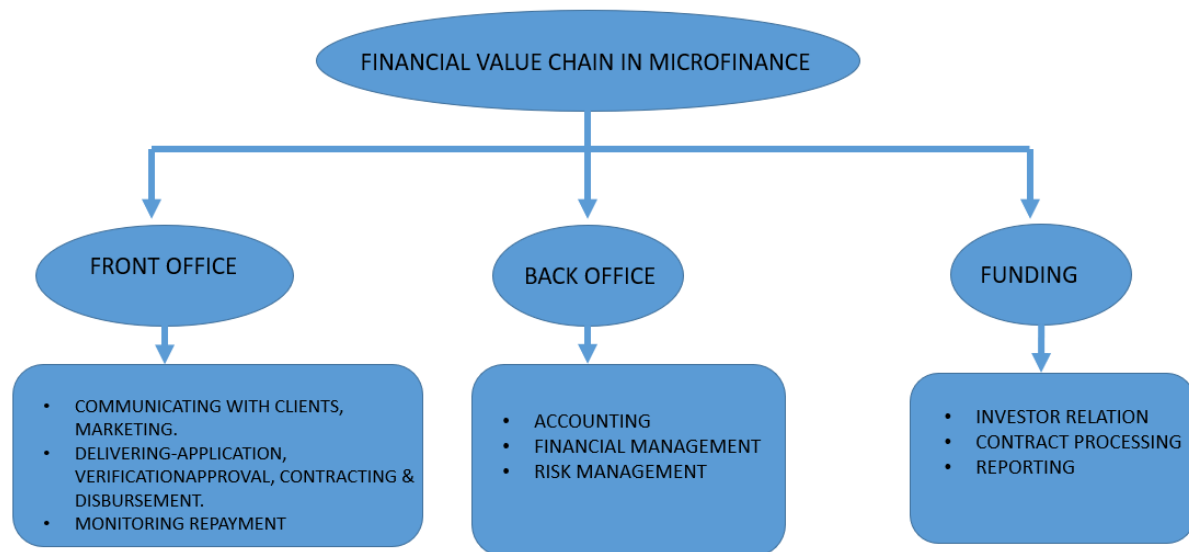
In a similar vein, Microfinance Institutions (MFIs) are now teaming up with financial technology businesses. According to PwC (2017), there are several examples of MFIs and fintech companies in India working together to collaborate on customer onboarding, the credit assessment, loan disbursement, and collections. Some examples of such collaborations include The Entrepreneurial Finance LabEFL, a psychometric credit assessment company that provides credit assessment services to Janalakshmi Financial Services (an MFI), a partnership between Oxigen Services and Sonata Finance Limited (an MFI) to deliver mobile financial services and education to the clients of the latter, and Artoo, a technology company that helps Ujjivan (an MFI, and now a Small Finance Bank) to onboard customers (PwC, 2017). Not only have these partnerships produced creative results, but they have also improved the effectiveness of business operations and contributed to the realisation of the goal of the financial inclusion agenda. One of the most notable aspects of these forward-thinking partnerships is that in addition to enhancing the goods that are already available, they also make a vast array of new financial services available to those who were previously prohibited from receiving them. The expansion of credit plus operations (Sa-Dhan, 2107) in India, including micro-insurance and micro-pension, is one example.

As was previously mentioned, the increasing integration of digital technology is producing process innovation in the business. Field employees would not be entirely replaced, but their significance would certainly decrease as a result of this. The proliferation of cashless operations and digital payment methods will reduce the inherent dangers of cash-based operations while simultaneously increasing operational efficiency and lowering associated costs. Because of the many insights that may be gleaned from the digital data that is produced throughout the course of operations, the delivery of services and management of risks would no longer be dependent simply on physical outreach. According to MFIN (2017), businesses that adopted 'cash-lite' models experienced a reduction in turnaround time, a reduction in the risk of errors and fraud in disbursement and repayment, and a reduction in the number of tasks requiring reconciliation as a result of data shared by technology service providers. As a result of the enormous improvements made to the instruments for financial literacy, there has also been a substantial shift in the engagement strategy that institutions employ. Not only is the change being driven by technology in the form of digital field applications to onboard clients or better lead management operations (PwC, 2016), but it is also taking place in the form of automation and a growing dependence on analytics. Other aspects of the current change in the industry include the ongoing integration of data from credit bureaus, the adoption of self-service alternatives, the use of electronic payments, as well as E-KYC and Aadhar-enabled payment processing. Huge increases in efficiency will be realised as a result of the quick dissemination of enabling infrastructures such as Aadhar and E-KYC; nevertheless, the drivers of operating expenditure reduction may be altered as a result of these gains. MFI operations have substantial costs linked to their staff as well as their business due to the labour-intensive nature of the MFI industry. In India, field employees make up sixty per cent of the overall workforce. A rise in the usage of technology channels,

including automated teller machines, point-of-sale terminals, mobile banking, and other similar services, can lead to improvements in productivity.

### Digitalization and Value Chain in Microfinance

Players in the microfinance industry are utilising and investigating new technologies and solutions with the purpose of improving client outreach, decision-making, and operational efficiency. The delivery of financial services is being disrupted by technological advancements at the same time that these changes are having an impact on the technical landscape of the microfinance industry. In this section, we will investigate the numerous technological interventions that are now being utilised to improve the effectiveness of the lending value chain and make it more optimised.



**Fig.1**

Financial Value Chain in Microfinance (made by author)

#### Front Office

In the front workplace operations, digitising communication and sales permits reaching intent on a bigger audience, as well as the generation that is knowledgeable about technology. In addition to this, contact with present and new customers about the available merchandise may proceed more quickly. Regarding the distribution method of credit, an online loan alternative methods of credit scoring, such as psychological science testing, analysis of mobile usage, social media usage, and app usage, broaden the limitations that are currently imposed by credit bureaus and bring new segments of the population and businesses into the realm of financial services. They offer pertinent insights on the businesses and people that want financing, which enables them to expedite the process of overcoming the barrier posed by the scarcity of business and credit information. Mobile banking (also known as m-Banking services) and internet banking both have the potential to streamline the process of loan disbursements, which are traditionally handled through customers' bank accounts. Using cloud computing, more quick and accurate observations of the performance of loans can be generated using a wide variety of cutting-edge techniques for statistical analysis of the data. The potency gains, such as lower operational costs and employees' time,

improve the greater accuracy of information, more effective ongoing observation, and the ability to respond more promptly to concerns as they emerge.

### Back Office

The rapid development of cloud computing is rapidly reshaping the ways in which financial institutions conduct business and make use of the information technology resources available to them. Customers are provided with limitless computing capabilities and resources (servers, storage, networks, applications, and services) through the use of web technologies through a model known as "the cloud." This model may represent a paradigm shift in the computing industry. The world of financial services is one that can potentially be completely transformed by cloud computing. Any individual, in any location, will have access to cutting-edge core banking systems without the price tag and other obstacles that are typically associated with this technology as a result of the creation of enterprise-level banking systems and associated technologies that are made available in the cloud on a pay-per-use basis.

### Funding

The process of recruiting investment and securing investment transactions may both benefit from the use of technology, which offers a number of advantages. The typical investment process, which includes contact with the investors, paperwork, contracting, and performance reporting, can benefit from the introduction of innovation, which results in improvements to the speed and accuracy of the process. In addition, financial technology may be used to create new investment avenues, such as crowdsourcing and lending between individuals, which are examples of this. It is important that the platforms for crowdfunding have the capability to gather funds, which may subsequently be provided to business owners by MFIs.

**Table 1**  
**Impact of Digital Technology on Microfinance**

	LOW	MEDIUM	HIGH
<b>ADOPTED</b>	Online Application	Mis-Dashboard Geo-Tagging	Mobile technology Cloud computing
<b>EMERGING</b>	Media tech (Voice & Video)	Predictive Analytics Instant Payments	ADI Platforms Robotic process automation.
<b>NASCENT</b>	Augmented/Virtual Reality	Distributed ledger technology & Block-Chain. Natural language processing.	Machine learning and Deep learning.

The question of how much customer contacts with front office staff can be replaced by technology arises as front office activities become more digitalized. Self-service features that don't involve staff-client interaction, including loan applications and repayments through POS, QR codes, and other online means, strengthen the autonomy of the consumer in carrying out loan-related operations to a certain level. Yet, there are some instances where clients prefer face-to-face communication, including: 1) confirming the legality of a product; 2) ensuring complete understanding of the product; 3) resolving issues; and others.



For enquiries or services that may be automated, including loan renewals or account-to-account transactions, clients prefer digital services. Also, males, young people, and people who live in cities tend to feel more at ease with "low touch" methods of service, while women, the elderly, and those who live in rural areas tend to favour more "high touch" methods. Call centres, private emails and messages, and in-app chats are a few activities that draw a medium degree of human involvement.

### **Importance of Digitization of Microfinance Services**

**Stay competitive:** With the recent regulatory permission given to Small Finance Banks (SFBs) and the increased push for priority sector lending and financial inclusion for commercial banks by the Reserve Bank of India (RBI), the level of competition in the industry is becoming increasingly fierce. In addition, by utilising digital technologies, MFIs are able to more effectively deliver microfinance in addition to value-added services such as the transmission of best business practises, training for entrepreneurial skilling, and instruction in financial literacy.

**Protect against external shocks:** Digitalization and the use of technology to expedite procedures will lessen reliance on cash at the nodes of disbursement and collections. This will serve to safeguard MFIs from external shocks such as demonetization, and it will also make them nimbler and more adaptive to rapid market movements.

**Cost and process effectiveness:** MFIs are able to lower costs by adopting digital solutions, which allows them to do so in a variety of ways, including faster processing times for loan approval and disbursement, reduced expenses of physical data storage, reduced risk of cash, and some insulation from external shocks like as demonetization. There is also a decrease in intangible costs, such as the reduced risk of theft or loss that is involved with using cash and transporting it.

### **Challenges faced by MFIs in Digital adaptation: Indian Context**

#### ***Digital Adoption***

Because Microfinance Institutions commonly work with employees and business correspondent partners that have a low level of formal education and financial literacy, MFIs bear unique challenges. These challenges are a direct result of the fact that most of these individuals need to be financially literate. The ecosystem has a relatively low degree of adoption due to the lack of basic understanding of the financial infrastructure and the digital services that are now offered. Even customers with loans disbursed directly into their bank accounts would ultimately withdraw these sums to spend in cash if the ecosystem continues to be structured on cash transactions. This is because cash transactions will continue to be the dominant form of transaction in the ecosystem even after implementing other payment methods. Because the consumers do not perceive any value in retaining their money in a digital format, the loan repayments are also made in cash. An MFI will incur two different types of expenses as a direct result of driving digital technology. These expenses are as follows:

1. Charges that are immediate and transaction-related, such as those connected with eKYC, mandate-related (setting/default) charges, etc.
2. The firm will pay costs, both direct and indirect, to train its employees as well as its consumers and to participate in promotional activities centring around digital platforms.

#### **The Human Touch**

Microfinance has traditionally relied on a personalised approach to service. While there is widespread agreement that the introduction of new technologies into the industry is altering the customer service equation, opinions vary on how exactly that is happening. The 'on-the-ground' field agents are crucial

points of contact for the target segment MFIs to serve to gain an understanding of the available financial solutions. Keeping in touch with customers while making the most of the company's resources is an absolute must for any technological deployment. Big data, ML-generated algorithms based on diverse sources of data don't take into account certain softer evaluation characteristics that human field agents are capable of, leading to the payback dilemma. Therefore, it is clear that much algorithm-based lending today faces a higher risk of default. MFIs must adopt a multifaceted strategy for solving this problem, with the Self-Help Group (SHG) or Joint Lending Group (JLG) structures guaranteeing group guarantees giving peer pressure to repay the loan and the centre meetings reinforcing the repayment habit. With fewer people involved, it's crucial that the loan be used wisely so that it can have a positive impact on the repayment rate. Borrowers are encouraged to put loan money to good use and establish their businesses responsibly through frequent contact with a company's representatives and the provision of entrepreneurship training targeted at improving financial literacy and market orientation.

### **Digital Gap**

Although digital adoption rates and internet connectivity have been continuously expanding across India, there is a shortage in the availability of talent that can adapt to the most recent digital interventions in the microfinance value chain. This is due to the fact that talent is in short supply. This is partly due to the fact that NBFC-MFIs concentrate their geographic attention on rural and semi-urban areas; staff requirements are directly met by recruitment from the locally available pool where major digital skill gaps exist. The research found that only 18.3% of people living in rural areas between the ages of 14 and 29 were able to use a computer, in contrast to the 48.9% of people living in metropolitan areas who could do so.

### **Technology Partnership**

There are still many parts of the country that lack adequate infrastructure, and these areas may be found all around the country. The northern and north-eastern regions of India are the most poorly linked and face issues regarding issues pertaining to electricity, internet, and payment infrastructure. According to a report by the World Bank, approximately 33 percent of villages do not have access to all-weather roads and are cut off during the monsoon season. According to the survey, just 1,417 of the 18,452 villages have full connection to all of their houses. This number represents only a fraction of the total population. 46 The challenge will come from making significant investments that are contingent on obtaining an agreement among the myriad of various industry actors and components that join together to form the ecosystem.

### **Regulations**

With Data Protection, numerous worries has been raised about the lack of clear IT rules for MFIs, including business continuity, data protection and security, and cybersecurity, which may lead to security breaches and make customers hesitant to share personal information with lenders. To remain relevant and competitive in the market, fintech businesses will also need to make their products comply with the **Digital Personal Data Protection Bill, 2022**. It will take a lot of design and implementation work to address issues with a permission-based framework for the protection of personal information, such as the "right to be forgotten," guaranteeing a secure and encrypted database for keeping personal data, and the structure of the consent.

### **Future Roadmap for Digitalization of MFIs**

The customer's exposure and consequently their expectations from microfinance organisations will continue to alter as literacy rates and the rate at which mobile phones are adopted in economically disadvantaged and rural areas continue to rise. Customers of microfinance institutions will anticipate receiving personalised solutions, which will be given by means of automated analytics, machine learning,

and artificial intelligence, and will be connected to the happenings in their personal or professional lives. The continued rise of digitalization may give the impression that there is less of a need for human engagement. However, providing excellent customer service will continue to be a priority, and the businesses that thrive in this environment will be those that can offer products that are reasonably priced, of high quality, and accessible via intuitive interfaces. In addition, as technological advancements continue to lower the cost of providing services, an increase in the number of new entrants in the microfinance sector is anticipated to drive up levels of competition.

A survey on the digital priorities of MFIs post-COVID-19 was conducted by KPMG India in collaboration with MFIN, and the results and findings of the survey highlighted several noteworthy outcomes and conclusions. Over seventy-five per cent of microfinance institutions (MFIs) intend to make investments in artificial intelligence, and over sixty-two per cent of MFIs intend to make investments in cloud-based solutions. Almost ninety per cent of MFIs believe that predictive analytics will play an important role in the future of the microfinance industry. More than seventy-five per cent of microfinance institutions (MFIs) intend to digitalize their collections process and make investments in predictive analytics tools during the next few years, while more than sixty percent of MFIs intend to extend their existing relationships with fintech companies (KPMG, 2021).

Instead of concentrating on specific goals, MFIs should have a broader vision of where they want to be in three, five, or ten years, taking into account everything from the effectiveness of their operations to the quality of their people and culture. Fintech businesses need to take advantage of these opportunities and focus on meeting unique client needs.

Increased adoption of digital technologies along the whole value chain will benefit MFI businesses by increasing overall productivity and operational efficiency. Spending on human resources is a significant area for MFI businesses. By utilising digital solutions, MFI organisations will be able to boost the productivity of their personnel in the areas of customer sourcing, credit assessment, customer servicing, and collection. The businesses will be able to "do more with less" thanks to the enhanced productivity.

Financial institutions are unable to pursue every fintech opportunity simultaneously. Setting priorities is essential for MFIs who want to maximise the return on their investments and activities. It would involve assessing a number of variables, including the MFI's future roadmap with regard to product mix, target customer segment, organisational capabilities, and target book size, as well as aligning with particular initiatives that might not be big today but will be a major focus area in the future.

## **Conclusion**

There is an international revolution happening in the microfinance sector. Due to the introduction of emerging technology, the company is going through a shift that may have an impact on its core traits and operational procedures. Although incorporating technology will encourage growth through creativity, performance, and inclusion, the sector's future may be fraught with difficulties. There has to be more investigation into how the technologies might operate and impact the sector. Although the extent of the advantages is unknown, it is clear that technological innovation alone cannot accelerate growth. Additionally, it's important to understand how rivalry and hurdles work. Cloud provides businesses with transformation in the competitive BFSI industry of today, opportunities abound and are a crucial strategic aspect. Although cloud transformation is not an easy technology to adopt, the benefits and potential for the future far outweigh the difficulties and dangers. It enables direct customer communication between bankers and their clients and is a straightforward method to install and integrate with all of the bank's systems, saving users' time and effort.

This is due to a number of factors. Direct and personal interaction with a client who needs additional help in solving their business challenges is the competitive advantage of microfinance. This feature of microfinance will be lost if the lending process is totally automated and driven by fintech, and with that, the capacity to assist the most difficult clients with their unique needs that cannot be met by simplified digital solutions. The necessity for "human touch," which denotes that not all of the interaction with the client will be automated, must be balanced with the need for automatization.

Utilizing fintech is further complicated by the scale of operations. Most MFIs are small, and they have too few clients to effectively use digital solutions like credit scoring. This issue could be resolved by developing a shared processing platform for smaller MFIs, enabling them to function at scale while maintaining their local presence and responding to local demands.

In India microfinance in each region have a different level of penetration from one another. Southern India has greater experience with microfinance than other parts of India, but it also carries a heavier legacy weight from a more conventional approach to microfinance, which makes it more difficult and expensive to switch the current systems to fintech ones. However, there is no proof that a wider application of fintech will significantly increase the scale, effectiveness, or profitability of microfinance. Businesses that employ a sizable scale and continue to use the relational lending model can nevertheless turn a profit by merely using a portion of digital solutions, frequently in the back office. Rushing to digitalize should be carefully evaluated. Fintech and digitalization solutions should be used in accordance with the goals of the business, the needs of the clients, and a logical analysis of costs and advantages.

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