



Building an ecosystem of collections through **BBPS**



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Foreword

India has been at the forefront to bring about a paradigm shift in the global digital payments landscape. The exponential growth in digital payments has stemmed from industry and government initiatives to make digital payments accessible, user-friendly, and inclusive. With the rise in ownership of mobile devices and accessible internet connectivity, individuals across urban and rural areas have been transitioning from traditional cash-based transactions to digital channels. As consumers and businesses embrace the ease and convenience of digital payments, digital collections and bill payments have seen a remarkable surge.

We believe that the Bharat Bill Payment System (BBPS) has played a key role in the growth of digital payments across India since its inception. BBPS seeks to grow and transform collections and bill payments in India through a safe, secure, and reliable payment system that connects various stakeholders within the ecosystem. BBPS intends to bridge the gap between diverse billers and consumers through its unified and interoperable payment solution. Since its inception, BBPS has helped ease the process of bill payments for more than 100 million households across India's urban and rural areas. We expect BBPS to further ease access and convenience for users in the coming years as payment categories expand beyond utilities, services, and subscriptions.

As digital payments continue to evolve and financial inclusivity deepens, we expect further growth in digital collections and bill payments. BBPS will play a pivotal role in reshaping collections and bill payments in India, including recurring and non-recurring payments. In the coming years, we expect a rapid expansion in the customer base for digital collections as it builds solutions for newer use cases and creates greater value for businesses.

This whitepaper has been developed in partnership with MSC (MicroSave Consulting) to provide an overview of India's current collections landscape and its growth opportunities for stakeholders in the coming years. The paper highlights the challenges and opportunities in collections, along with current initiatives by stakeholders toward digitization. It examines various use cases that can lead the trajectory of the change toward digital collections for the mass market and the collaboration needed from stakeholders. It underscores the role of BBPS to enhance consumer experience through a wide range of digital payment options, as it also benefits service providers through streamlined collections and reduced operational costs.

As a unified platform, BBPS can help connect billers, payment service providers, and consumers while resolving the challenges of a fragmented collections ecosystem—and beyond. BBPS can reduce the complexities associated with collections and improve accuracy in payment settlements through its interoperable framework. We hope you will find it relevant and meaningful. Please connect with us for further conversations and insights on how we can revolutionize India's collections ecosystem.

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Chief Executive Officer

NPCI Bharat BillPay Ltd. (NBBL)

Acknowledgments

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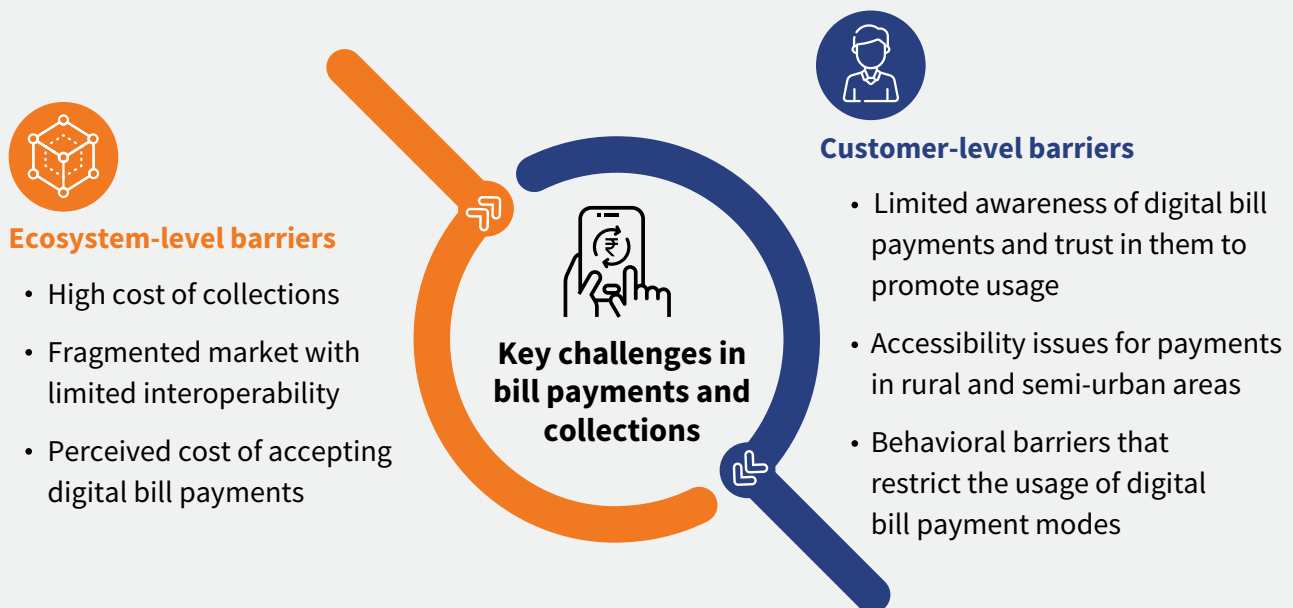
We thank the MSC (MicroSave Consulting) team for their commendable work. Disha Bhavnani and Pramiti Lonkar have been instrumental in gathering insights and authoring the study. Akshat Pathak provided his expertise and feedback as a reviewer for the whitepaper. We acknowledge the pivotal support of our colleagues and team members who helped us through the research, writing, and review process. We extend our appreciation to the Bill & Melinda Gates Foundation (BMGF) for supporting the initiatives under MSC's Digital Financial Inclusion in India (DFII) program which has helped develop key thought pieces, including this whitepaper.

We extend our appreciation to the readers, who, through their engagement with this whitepaper, will further the discourse on the significance of BBPS in digital collections in India.

Executive summary






India has witnessed phenomenal growth in digital payments in the past decade. Digital payments have grown at a CAGR of 44% from FY 2017-18 to FY 2021-22 by volume. Rise in smartphone ownership, access to the internet, a responsive regulatory framework, and a greater focus on customer-centricity has led to this growth in digital payments. Digital payments are estimated to reach over USD 10 trillion by 2026. Digital bill payments and collections are expected to form a major component of this growth while improving access to financial services for the masses. The growth in collections will primarily stem from improvements in the infrastructure through payment solutions provided by the Bharat Bill Payment System (BBPS), biller aggregators, third-party service providers, and other ecosystem players.

BBPS remains at the core of the bill payments and collections ecosystem in India. It intends to leverage its strength as a standardized, interoperable and secure payment solution to resolve the challenges and bridge the gaps in collections. As per market estimates, 58% of bill payments and collections in India are made in cash due to several barriers. The figure below highlights the key challenges faced by the customers and ecosystem partners which limit the uptake of digital bill payments and collections.



Key ecosystem-level and customer-level barriers in the digitization of collections

An MSC study in 2023 identified the potential use cases that would help expand digital collections and provide customers with a standardized payment solution for all their bill payments and collections needs. BBPS can play a pivotal role to digitize these use cases that span across payments to individuals, businesses, and the government. Based on the findings, the following use cases are relevant as per the current market needs:

	Person 	Merchant 	Government 
Person 	<ul style="list-style-type: none"> • Remittance mandates for domestic money transfers • Tapping into domestic workers and similar segments 	<ul style="list-style-type: none"> • Residential payments • MFI loan repayments • Mobility-related payments • Wallet recharges 	<ul style="list-style-type: none"> • Court and traffic <i>challan</i> • Tax payments to urban local bodies • Payment for unreserved category tickets in railways
Merchant 		<ul style="list-style-type: none"> • Corporate vendor payouts • Retailer-distributor payments • Sector-specific value chains • Loan repayments by small businesses 	<ul style="list-style-type: none"> • Payment of GST <i>challan</i> • Corporate payments to urban local bodies

Potential use cases to digitize collections

The potential digitization of these collections use cases varies based on their market size, the digital readiness of customers, the cost and effort required in digitization, and the general trends in the given industry. This whitepaper highlights the use cases assessed on these parameters to identify the payment categories with the potential for higher uptake, specifically using BBPS.

Based on the assessment of the use cases, BBPS can prove pivotal to digitize P2B and B2B collections for the next billion customers. Digitization of P2B and B2B collections would help resolve the challenges faced by low-income households and small businesses in India, which often remain underserved in terms of digital solutions. Among the various use cases in P2B and B2B collections, we look at the role of BBPS in two key use cases:

1. Digitization of MFI loan repayments:

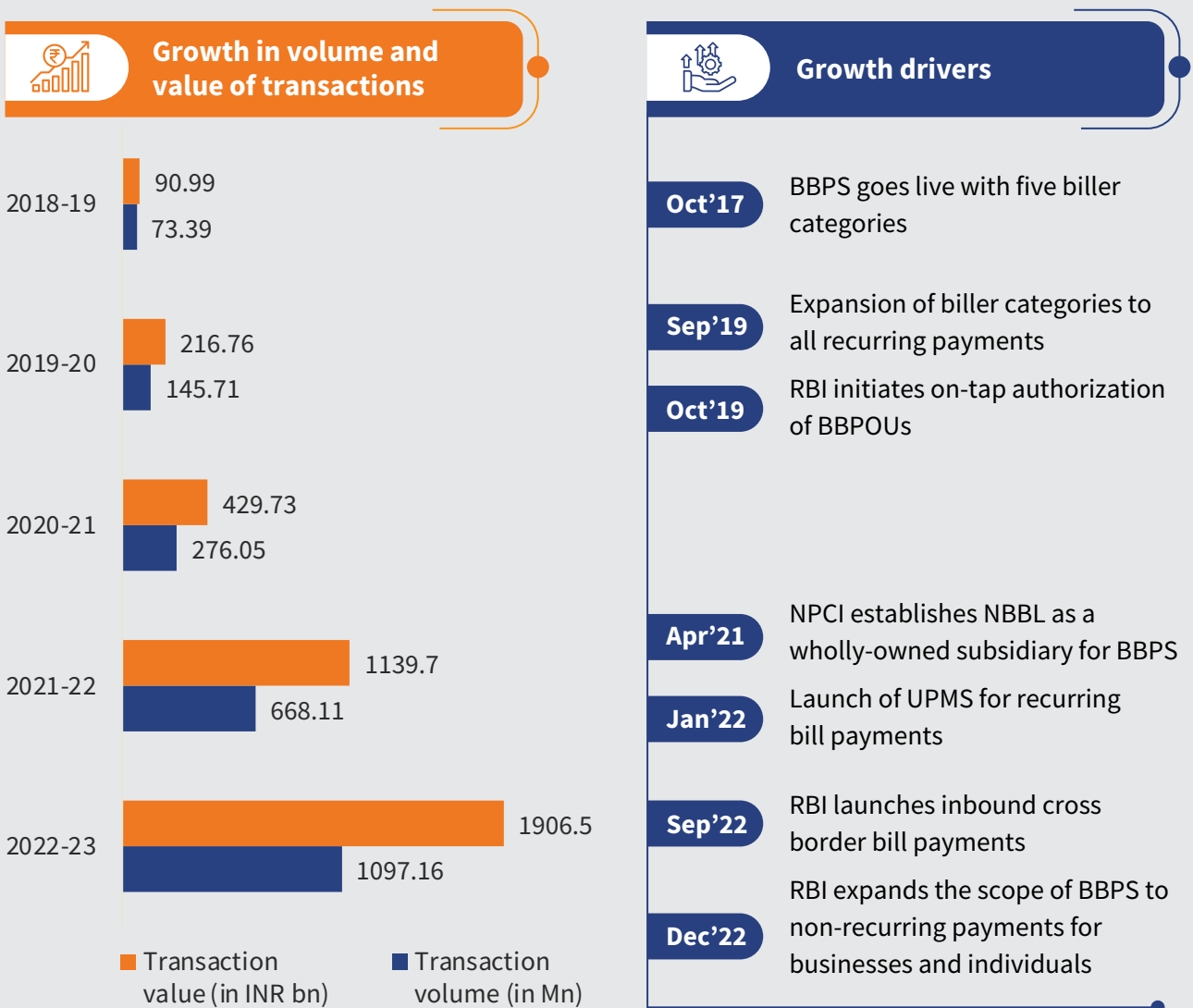
India's microfinance sector provides access to credit for more than 62 million borrowers through joint liability loans to women from low-income households. This helps these households smoothen consumption and improve their financial health. Most borrowers make cash repayments and typically have limited access to digital infrastructure. Despite industry initiatives, the percentage of digital repayments remained low at 13% in FY 2022. Borrowers seek a reliable, secure, and interoperable payment solution to make MFI loan repayments in both self-initiated and assisted payment modes. This section maps the potential role of BBPS to improve the uptake of digital repayments for MFIs as it eases the repayment process for borrowers.

2. Digitization of retailer-to-distributor payments in the dairy value chain:

The dairy sector in India contributes more than 20% of India's agricultural GDP annually, with a market

size that exceeds INR 14.8 trillion. The payment flow in the dairy value chain comprises upstream and downstream payments made by distributors and retailers. While the majority of upstream payments by distributors are digitized, retailers make downstream payments through cash or cheques. This increases the time and cost incurred in daily visits to the bank for cash withdrawal and manual reconciliation of payments. Most retailers have limited digital readiness and limited bandwidth to manage bills and inventory. BBPS can help simplify payments for these retailers with its interoperable and secure payment solution. This section maps the potential role BBPS can play to digitize the retailer-to-distributor payments within the dairy value chain.

BBPS intends to resolve the gaps in the above use cases using its strength as an interoperable, secure, and reliable payment solution. Since its inception in 2017, BBPS has revolutionized India’s bill payments landscape with a growth rate of CAGR of 73% by volume from 2017-18 to 2022-23. Estimates suggest the transaction volume of BBPS will increase to more than 3 billion by 2026. A responsive regulatory framework, growth in the number of participants, and expansion of biller categories have led to this growth. The figure below provides details on the key growth drivers of the volume and value of BBPS transactions.



Key growth drivers leading to the rise in volume and value of transactions for BBPS

The scope to expand BBPS shows immense potential after RBI allowed BBPS to foray into non-recurring payments. Customers who pay through BBPS use it for a wide category of payments, such as loan repayments, utility bills, FASTag, and mobile postpaid, among others. BBPS can potentially serve more collections use cases for individuals and businesses yet to come under the digital payments purview.

This untapped market provides BBPS an opportunity to expand payment categories and offer a holistic solution for all types of mandate-based payments, especially collections. In its next phase of growth, BBPS intends to become India's de facto collection platform. It shows the potential to be universally capable of supporting all types of collections in India and empowering its ecosystem partners to innovate further and engage with customers.



1. India's changing landscape over the past decade: Challenges in collections

India has witnessed phenomenal growth in digital payments in the past decade. Digital payments have grown at a CAGR of 44% from FY 2017-18 to FY 2021-22 by volume. Smartphone ownership and access to the internet have grown rapidly, with more than 931 million smartphone users and 746 million mobile internet subscriptions. Several factors have led to this growth, including improvements in payments infrastructure, disruptions in information and communications technology, a responsive regulatory framework, a conducive policy environment, and a greater focus on customer-centricity.

As per an industry report, digital payments can potentially rise to more than USD 10 trillion by 2026. Digital bill payments and collections are expected to form a major component of this growth and will further drive the adoption of digital payments and improve access to financial services. This growth will primarily stem from improvements in the collections infrastructure through payment solutions provided by the Bharat Bill Payment System (BBPS), biller aggregators, and third-party service providers. The categories of bill payments and collections with high potential for uptake include payment of utility bills, taxes, loan repayments, and several other evolving use cases for different customer segments in India. The introduction of cross-border bill payments will further ease bill payments and provide individuals and businesses with a convenient channel to pay their bills.

However, various challenges within the current bill payment and collections ecosystem may lead to a slower uptake of digital payment solutions. The key barriers could emerge from the different stakeholders that form a part of the BBPS ecosystem or challenges that different customer segments in India may face. (Figure 1)

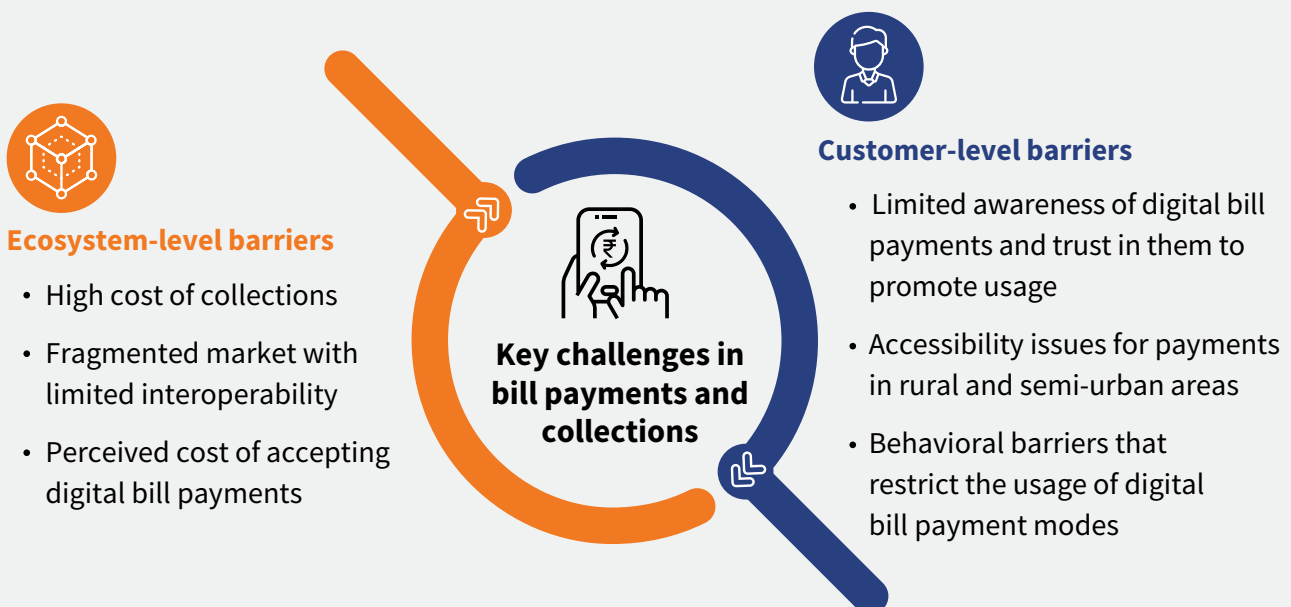


Figure 1: Key ecosystem-level and customer-level barriers in the digitization of collections

1. Customer-level barriers:

An MSC study from 2018 highlights that India's population can be divided into five segments based on their daily household income. (Refer Annexe) Among these segments, the majority of the low and middle-income households (LMI) depend on assisted modes for their bill payment needs. Some of the key barriers that lead to low uptake of digital solutions include:

Limited awareness and trust to use digital bill payments: While some billers facilitate the payment of utility bills through post offices, customer service centers (CSCs), and agent outlets, the majority of consumers in rural and semi-urban areas lack awareness of the availability and benefits of these bill payment facilities. Consumers prefer to visit biller collection points due to the perceived security of the printed receipt and lack of trust in payments made through agents. Moreover, uptake in centralized bill payment solutions, such as BBPS, remains limited among CSCs and agent outlets due to the perceived cost and effort involved in facilitating bill payments at the outlet, and comparatively lower commissions on these transactions.

Accessibility issues for payments in rural and semi-urban areas: Consumers in rural and semi-urban areas have limited options to pay utility bills and repay loans due to low internet penetration and limited digital and financial literacy. While the overall teledensity in India is reported at 82.7%, the rural teledensity remains much lower at 57.4%. Despite the rise in smartphone ownership and usage, 58% of bill payments and collections in India are made in cash

Behavioral barriers that restrict the usage of digital payment modes: Despite the rise in digital payments, 80% of consumer transactions continue in cash. Most consumers, especially in rural and semi-urban areas, prefer cash and lack trust in digital payments. Consumers' concerns about the reliability, safety, and security of transactions restrict their adoption of digital payments. This includes concerns about transaction failure, issues in payments due to network error, and lack of knowledge on grievance resolution mechanisms for digital bill payments. Hence, consumers have a status quo bias toward biller collection points and resist the move toward digital payment modes.

2. Ecosystem-level barriers:

The ecosystem of bill payments and collections includes billers and biller aggregators. Currently, it is a highly fragmented market with limited interoperability among participants. The key barriers that have limited the uptake of digital solutions among ecosystem players include:

High cost of collection: Some billers manage bill collections and payments through their own payment channels. This includes online channels, such as the biller website and mobile application, and offline channels, such as biller-operated collection points and agents. Maintenance of the biller's own bill payment channels increases the operational costs for the biller to maintain offline channels, reconcile and settle payments, and address consumer grievances in case of transaction failures. Thus, billers need a standardized payment solution to help reduce the collection cost.

Fragmented market with limited interoperability: Some billers partner with bill aggregators to facilitate digital collections and bill payments for their customers. Yet, the market in India is highly fragmented. Hence, each bill aggregator has a limited capacity to onboard billers across different business scales and categories. Further, interoperability remains limited between bill aggregators. Hence, customers need to use multiple bill aggregators to make collections. Customers are also restricted to the payment modes provided by the bill aggregator or payment gateway used by the biller.

Perceived cost of accepting digital payments: Some billers that operate on a small scale or in limited geographies perceive digital payments as a solution that involves higher costs than their current collection mode. However, these billers often overlook the additional costs of accepting cash-based bill payments. For instance, a biller-operated collection point incurs high costs to employ staff, carry and deposit daily collections at the bank, and reconcile daily collections manually. These billers need an affordable, standardized payment solution to nudge them to digitize bill payments and collections.

The challenges faced by the stakeholders indicate the need for a standardized, interoperable platform for bill payments and collections. BBPS can potentially become a feasible solution for digital collections and help resolve the challenges faced by these billers, service providers, and customers.



2. Opportunities to digitize collections in India:

2.1. Potential use cases to digitize collections

An MSC study in 2023 identified the potential use cases that would help expand digital collections in India and provide customers with a standardized payment solution for all their bill payment and collections needs.

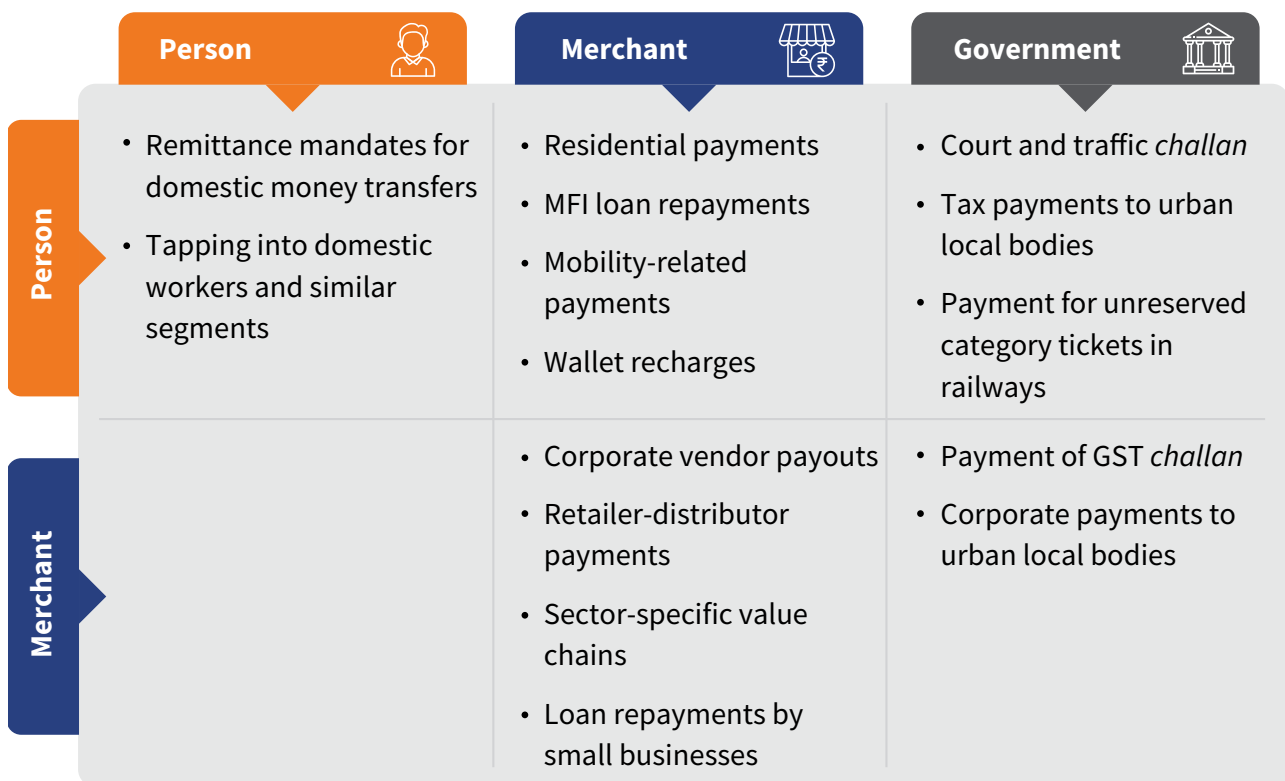


Figure 2: Potential use cases to digitize collections

Person-to-person payments (P2P):

- 1. Remittance mandates for domestic money transfers:** The market for domestic money transfers is worth INR 800 billion (USD 9.68 billion), which indicates a greenfield opportunity. Individuals can set mandates to receive or make these payments through BBPS.
- 2. Tapping into domestic workers and similar segments:** Collection of payments by domestic workers can emerge as a use case, where they can be onboarded as billers and collect payments from households. Lenders can use data from collections to estimate their monthly incomes and use it as alternate data to provide a line of credit later.

Person-to-merchant payments (P2M):

- 1. Mobility-related payments:** As per an industry report, customers make less than 15% of mobility-related payments through digital modes. Providing interoperable digital payment modes for recharge of NCMC cards, metro cards, and services, such as card balance inquiries, can potentially increase uptake among regular commuters, especially in tier 1 and tier 2 cities. They can also be provided with

an auto-recharge facility through the Unified Presentment Management System (UPMS). Further, car-related payments, including payment of parking fees, car insurance, and payment of car rentals, can potentially be digitized.

2. **Expanding the reach of residential payments:** The majority of housing societies use cheques to collect payments, such as rent, maintenance, metered utilities, and other services. However, this created inconveniences for the societies in the way they manage finances and reconcile payments. With the onset of new platforms that offer holistic solutions for more than 35,000 housing societies, digitization of these residential payments can potentially ease access and improve convenience for residents.
3. **MFI loan repayments:** This includes digitization of loan repayments by borrowers, which are currently made in cash, across both online and offline channels to collect repayments.

Person-to-government payments (P2G):

1. **Court and traffic *challan*:** This includes payment of *challans* for traffic violations and court-related payments. Most states have adopted *e-challan* for payment of traffic violations since its launch in 2012. Users can make these payments through the respective state government portals. As per the current estimate, traffic authorities issued more than 4.7 million *challans* and generated revenue worth INR 28 billion (USD 3.39 million) from the collections. However, 47% of *challans* remain unpaid due to outdated information provided by the regional transport office (RTO), poor user interface, and high transaction failure rates. The adoption of an interoperable payment system can help ease the payment process.
2. **Tax payments to urban local bodies:** This includes payments to urban local bodies, such as water tax and property tax, among others.
3. **Payment for unreserved category in railways:** Currently, this facility is provided through the website and mobile application, but users find it difficult to access due to the lack of a convenient user interface.

Business-to-business payments (B2B):

1. **Corporate vendor payouts:** Digitization will facilitate vendor payouts by linking BBPS with the electronic bill presentment system of corporates to reduce transaction costs. It would facilitate payments of SaaS subscriptions and license-related payments, such as for Amazon Web Services (AWS) and GitHub.
2. **Retailer-distributor payments:** As per MSC's market estimates, retailers make payments to distributors worth more than INR 8.7 trillion (USD 105.31 billion) annually. These include the FMCG, pharmaceutical, and agricultural inputs sectors. Retailers are classified across three categories—traditional retail, organized retail, and e-commerce. While organized retail and e-commerce retailer payments have been digitized, traditional retailers continue to pay their distributors in cash.
3. **Deep-dive into sector-specific value chains:** Commercial gas payments and purchase of lubricants, among others, in the gas and petroleum sector and similar other sectors can be explored in discussion with industry experts. Other use cases include low-value transfers made by vendors to telecoms, which currently occur through bank account transfers.

- 4. Loan repayments by small businesses:** These include loans provided to small businesses by financial institutions, and SMEs receive these loans at a subsidized rate from RRBs or partner banks. BBPS can become a partner for collection under these programs.




Business-to-government payments (B2G):













- 1. Payment of GST challan:** This includes payment of GST challan by businesses, and the need for GST invoice for input tax credit. Majority of small scale businesses face issues in GST invoices due to lack of a standardized payment settlement and invoice mechanism with suppliers.
- 2. Tax payments to urban local bodies:** This includes payments to urban local bodies, such as water tax and property tax for commercial establishments.













2.2. Collections use cases to digitize the next billion

The use cases identified to digitize collections vary based on the type of payment (recurring versus non-recurring), the potential for uptake among the target segment, and the scope of digitization in the given industry. Figure 3 provides an assessment of the use cases based on the following parameters:

- 1. Total addressable market (TAM):** Identification of the potential market size for digitization based on the current uptake level. MSC has estimated the TAM of these use cases based on secondary estimates of the given industry.
- 2. Digital readiness of the customers:** Assessment of the target segment's digital awareness, skills, and ability to use digital modes for payments
- 3. Cost and effort required by stakeholders:** Assessment of the organization's feasibility to implement digitization of the collection use case
- 4. General trends in the concerned industry:** Analysis of the current level of digitization of payments in the given industry

Payment category or use case	TAM (volume/ value)	Digital readiness of customers	Cost and effort in digitization	Feasible timeline for digitization	Current level of digitization
P2P					
Domestic remittances	INR 800 billion (USD 9.7 billion)	Low 	High 	Long term 	<ul style="list-style-type: none"> • <u>Less than 40% of domestic remittances</u> are made through digital modes. • The majority of migrants prefer assisted modes to send remittances, including agents or informal payment modes. • Limited digital readiness for self-initiated transactions

Payment category or use case	TAM (volume/ value)	Digital readiness of customers	Cost and effort in digitization	Feasible timeline for digitization	Current level of digitization
Payments to domestic workers	4.75 million domestic workers	Low 	High 	Long term 	<ul style="list-style-type: none"> The emergence of <u>platform-based domestic and care work</u> provides an opportunity to digitize payments. The highly fragmented market with low levels of digital readiness may impede the digitization of these payments.
P2M					
Residential payments	75.74 million households	High 	Medium 	Medium term 	<ul style="list-style-type: none"> The rise in the digitization of housing societies with <u>35,000 housing societies</u> that use platforms, such as No Broker and MyGate to replace cash collections Gated communities comprise <u>only 32% of households in India</u> and are limited to urban and semi-urban areas.
MFI loan repayments	INR 4.9 trillion (USD 59.3 billion)	Low 	Medium 	Medium term 	<ul style="list-style-type: none"> The majority of MFIs have digitized loan disbursements in India. However, only <u>13% of repayment collections</u> are made digitally. <u>MFIs have been adopting digital payment solutions</u>, such as mobile banking, UPI, and apps, to reduce collection costs.
Mobility-related payments	INR 800 billion (USD 9.7 billion)	Low 	High 	Long term 	<ul style="list-style-type: none"> Less than <u>15% of mobility-related payments</u> are made digitally. NCMC can potentially increase digital payments. However, it is <u>limited to certain geographies and service providers</u>.

Payment category or use case	TAM (volume/ value)	Digital readiness of customers	Cost and effort in digitization	Feasible timeline for digitization	Current level of digitization
Wallet recharge	INR 25 billion (USD 302.3 million)	High 	High 	Medium term 	<ul style="list-style-type: none"> The <u>launch of competitive payment instruments, such as UPI, alongside the enhanced regulation of prepaid payment instruments (PPIs)</u>, have slowed the growth of mobile wallets.
P2G					
Challan fees	INR 53 billion (USD 640.9 million)	Medium 	Low 	Long term 	<ul style="list-style-type: none"> State governments have been increasingly <u>adopting e-challan</u> for traffic violations. The <u>uptake of e-challan through government portals</u> remains limited due to high transaction failures and issues in the user interface.
Tax payments to urban local bodies	INR 44.74 trillion (USD 540.8 billion)	Medium 	High 	Long term 	<ul style="list-style-type: none"> <u>Urban local bodies in some states have adopted digital payments</u> through net banking and introduced POS machines at municipal offices and e-bills. The majority of the <u>websites run by urban local bodies have a poor user interface</u>, which restricts payment options for taxpayers.
Unreserved category payments in railways	INR 248.2 million (USD 3 million)	Low 	Medium 	Long term 	<ul style="list-style-type: none"> Customer awareness of the <u>Unreserved Ticketing System (UTS) mobile application</u> is lacking. Customers report <u>issues in receipt of confirmation of tickets</u>, errors in the application, and transaction failure.
















Payment category or use case	TAM (volume/ value)	Digital readiness of customers	Cost and effort in digitization	Feasible timeline for digitization	Current level of digitization
B2B					
Corporate vendor payouts	<u>INR 180 billion</u> (USD 2.2 billion)	High 	Medium 	Medium term 	<ul style="list-style-type: none"> Some industry and government initiatives are working to digitize vendor payments, such as the <u>TREDS platform</u>.
Retailer-to-distributor payments	INR 8.7 trillion (USD 105.2 billion)	Medium 	Medium 	Medium term 	<ul style="list-style-type: none"> A majority of retailers prefer cash payments due to poor infrastructure and limited digital readiness. Conglomerates in <u>FMCG</u>, pharmaceutical, and agri inputs have been taking initiatives to digitize the supply chain to ease the payment process for retailers and distributors.
Loan repayments by small businesses	<u>INR 2.2 trillion</u> (USD 26.6 billion)	Medium 	Medium 	Long term 	<ul style="list-style-type: none"> Some small businesses have <u>adopted automated loan repayment mechanisms</u> to ease the repayment process. A majority of the SMEs have low digital readiness, which may hinder the process of digitization of loan repayments.
B2G					
GST <i>challan</i>	INR 18 trillion (USD 217.7 billion)	High 	High 	Medium term 	<ul style="list-style-type: none"> Small businesses need GST invoices to avail of input tax credit. Digitization of B2B payments is needed to streamline and ease the process of GST payments.
Corporate payments to urban local bodies	INR 44.74 trillion (USD 540.8 billion)	Medium 	High 	Long term 	<ul style="list-style-type: none"> Most <u>websites run by urban local bodies have a poor user interface</u>, which restricts payment options for taxpayers.

Figure 3: Assessment of collections use cases to identify cases with high potential for digitization

The various use cases for digitization of collections span categories of individuals and businesses. However, the uptake of digital solutions varies based on the customer segment's income level, digital and financial skills, and perception of digital payments. Among these segments, low-income households and small businesses in India remain underserved in terms of digital solutions.

This gives BBPS an opportunity to digitize collections for the masses by working with ecosystem partners on use cases that address the bill payment and collection needs of LMI households and small businesses. BBPS can use its strength as a recurring payment solution by building these use cases for India's underserved and unserved segments. Based on the assessment of the use cases in Figure 3, P2B and B2B collections would enable the digitization of collections for the next billion customers:

1. Digitization of P2B collections:

As per market estimates, digital P2B collections are expected to increase to more than INR 22 trillion (USD 266 billion) in 2026. P2B collections comprise various use cases and include payment of utilities, subscriptions, and loan installments. Lending comprises a major component of these collections, with a market size that exceeds INR 1.7 trillion (USD 20.57 billion) as of March 2022.

This primarily includes retail loans and microfinance loans provided to individuals. While retail loans are digitized to a large extent, microfinance borrowers continue to make cash repayments. The majority of microfinance borrowers are from low and middle-income households with limited digital and financial literacy. BBPS can digitize these payments by using its physical and online channels, as it provides a safe and reliable mechanism for repayments.

2. Digitization of B2B collections:

B2B payments in India comprise upstream and downstream payments. Distributors make upstream payments to manufacturers. These payments are largely digitized as distributors prefer digital payments due to their high ticket size, reduced hassle of handling cash, and convenience. Retailers make downstream payments to distributors, which constitute a major volume of B2B payments made in India.

As per MSC's market estimates, retailers pay more than INR 8.7 trillion (USD 105.31 billion) to distributors annually. These include the FMCG, pharmaceutical, and agricultural inputs sectors. Retailers are classified across three categories—traditional retail, organized retail, and e-commerce. While organized retail and e-commerce retailer payments have been digitized, traditional retailers continue to pay their distributors in cash.

In the next section, we discuss one key use case from P2B and B2B collections to highlight BBPS' potential role to digitize collections in India:

1. Digitization of MFI loan repayments
2. Digitization of retailer-to-distributor payments in the dairy sector

3. A pathway towards digitization of key collection use cases

3.1. Digitization of MFI loan repayments by borrowers

Context and problem statement

The microfinance sector is critical as it provides access to credit to India's unserved and underserved segments. As per a report, MFIs have more than 6.2 crore active borrowers as of March 2022. Loans from MFIs help smoothen consumption and improve the financial health of these low-income households. MFIs provide joint liability loans to women from low-income households to help them generate income and manage education and household expenses.

Current state of digitization in the MFI process

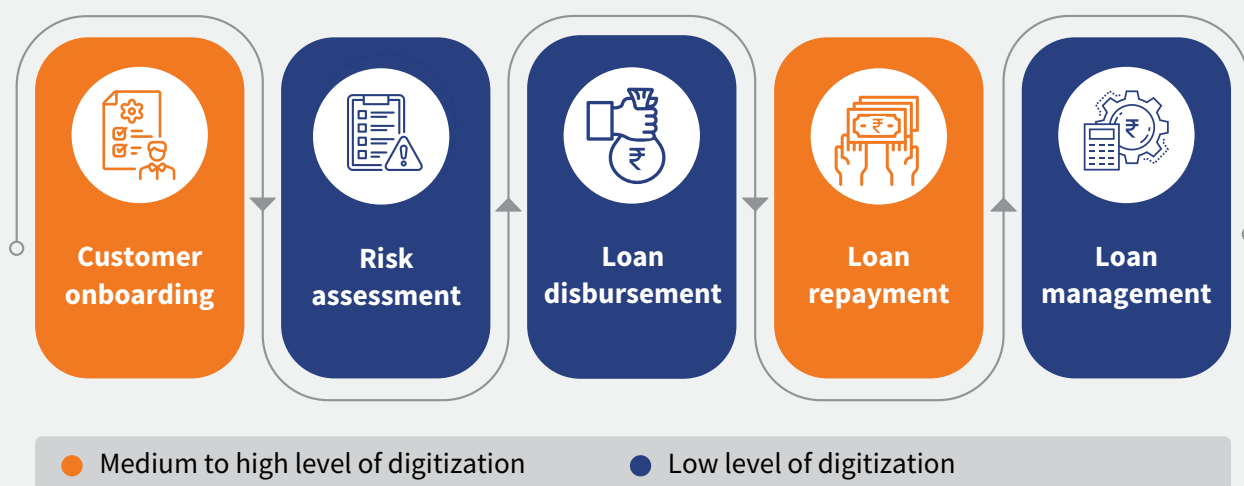


Figure 4: State of digitization of the MFI process

An MFI borrower's journey typically comprises onboarding, risk assessment, loan disbursement, loan management, and loan repayment. (Figure 4) The majority of MFIs in India have digitized the processes to onboard the borrowers, assess their repayment capacity, and disburse loans directly into their bank accounts. However, the collection of repayments depends largely on the center meetings wherein MFIs' field officers collect weekly repayments from the members of one or more joint liability groups (JLGs).

Although the center meeting is essential to an MFI's process, the MFIs incur high operational costs due to the need to maintain field staff and manage cash. Further, customers' needs have evolved as they seek alternate payment modes to repay, which helps them save time and costs. Figure 5 below lists the critical issues MFIs and borrowers face in the current repayment process.



Figure 5: Issues faced in the repayment collection process by MFIs and customers



Needs assessment of MFI loan borrowers for repayment

The MFI borrowers typically reside in semi-urban and rural areas with limited access to digital infrastructure. However, the rise in smartphone ownership and improvements in internet connectivity have led some borrowers to start using digital payments. As per a study by MSC, the borrowers' repayment needs vary based on their awareness, ability, and willingness to make digital payments. Here, we list out some key characteristics of the borrower segments:

- 1. Limited skills to initiate digital repayments:** While 88% of the borrowers are aware of various modes of digital payments, a majority lack the digital and financial literacy to conduct digital payments on their own.
- 2. Lack of smartphone usage for digital payments:** The majority of borrowers have shared ownership of smartphones with other household members. However, only 24% of the borrowers use their phones to make digital payments.
- 3. Preference toward cash as a mode of MFI loan repayment:** Customer segments that typically use digital payments actively prefer to make cash repayments at center meetings since most members in their group make cash payments.

- 4. Perception of digital payments as an unsafe payment mode:** Borrowers with limited awareness of digital payments perceive it as a risky mode of payment. Moreover, borrowers who are active users of digital payments hesitate to make digital loan repayments as they lack trust in digital receipts as proof of payment.

MFI initiatives to digitize repayments

MFIs have taken several initiatives to develop digital payment solutions and train borrowers to shift to digital repayments. This includes the provision of QR codes on the borrower's loan sheet and training for customers on digital payment modes through branch staff, among others. As per a study, the percentage of digital repayments has increased from 5% in FY 2019 to 13% in FY 2022.

The digital payment solutions MFIs currently provide vary according to the institution's preferences. Figure 6 below elaborates on the assisted and non-assisted modes of payment used by MFIs to collect repayments.

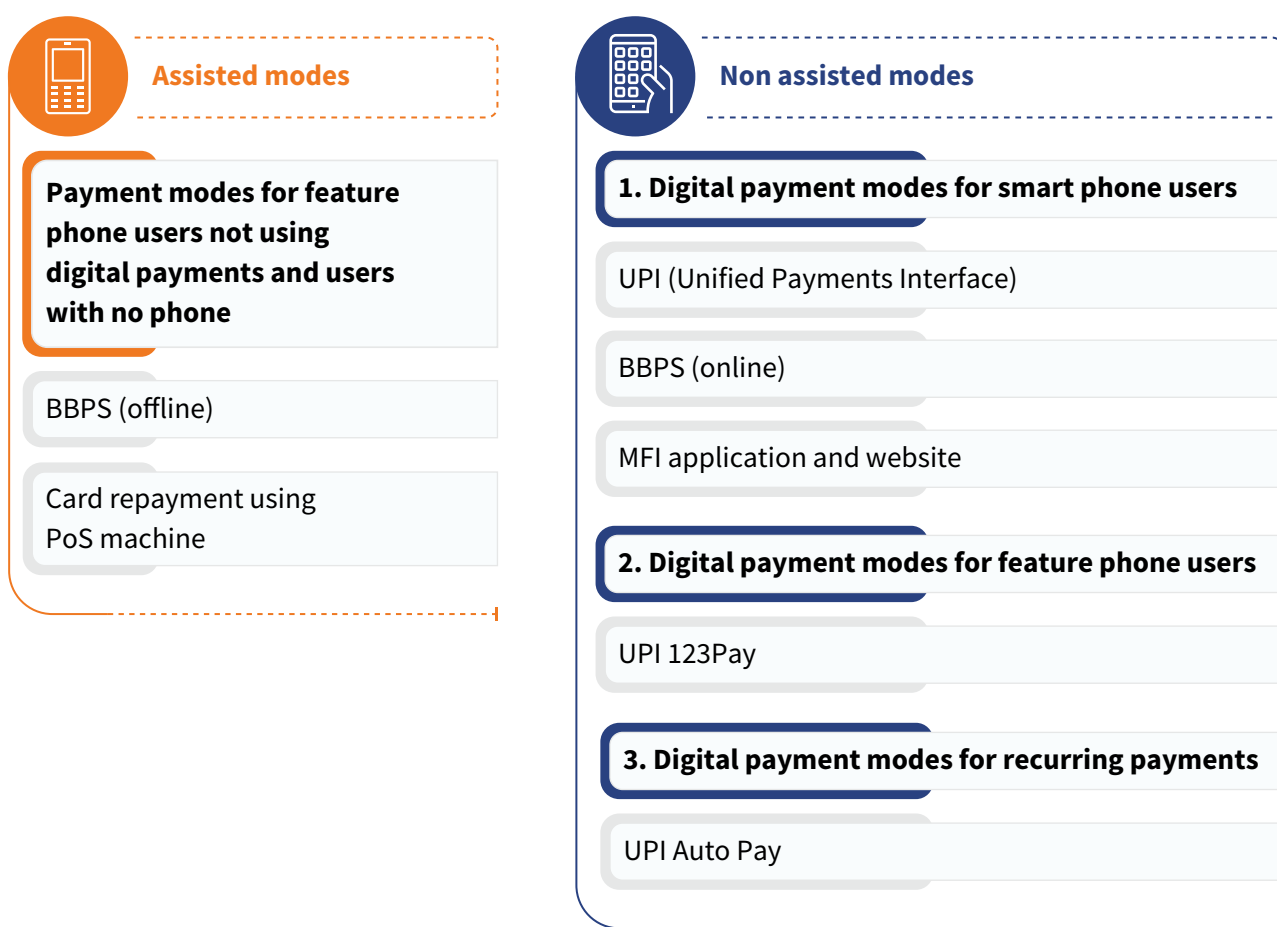


Figure 6: Current digitization initiatives for loan repayments by MFIs

BBPS can play a pivotal role to digitize (or solve) issues in MFI loan repayments

The current initiatives to digitize MFI loan repayments have seen limited uptake among borrowers due to a lack of interoperability of payment solutions, concerns about the safety of transactions, and issues in reconciliation. As a payment solution, BBPS can help improve the digital loan repayments of MFIs. BBPS can introduce the following key value propositions:

- 1. Safety and security of transactions:** A majority of the borrowers, including active users of digital payments, avoid digital loan repayments to MFIs due to concerns of transaction safety and security. As a payment solution, BBPS would help reduce these concerns for borrowers, along with the digital receipt provided for repayment.
- 2. Interoperability of the payment solution:** Some borrowers who currently make digital repayments stated the third-party payment solution provided by the MFIs often constrains them. The interoperability of BBPS will enable borrowers to pay through any platform of their choice.
- 3. Automated reconciliation with MFIs' loan management system:** While some MFIs have started to digitize loan repayments, they use manual reconciliation processes, which increases the time and effort involved in collections. MFI onboarding as billers on BBPS would benefit from an automated reconciliation process. This would help ease the process of reconciliation for MFIs. Further, it would help ensure accuracy in the settlement process since it is under the RBI's purview.

User journey of an MFI loan borrower who uses BBPS:

The borrowers can avail of both self-initiated and assisted modes of repayment through BBPS. MFIs can thus address the diverse repayment needs of their borrowers by using BBPS for collections. In this section, we map the user journey for these borrowers using BBPS:

- 1. MFI borrower who uses assisted mode for repayment:** The majority of borrowers lack the digital and financial literacy to initiate repayments using digital payment solutions. BBPS agents can serve as a reliable payment solution for these borrowers to make their weekly or monthly repayments by visiting their nearest CSC or agent outlet. The figure below maps the user journey of a borrower using an assisted mode of repayment through a BBPS solution (Figure 7)

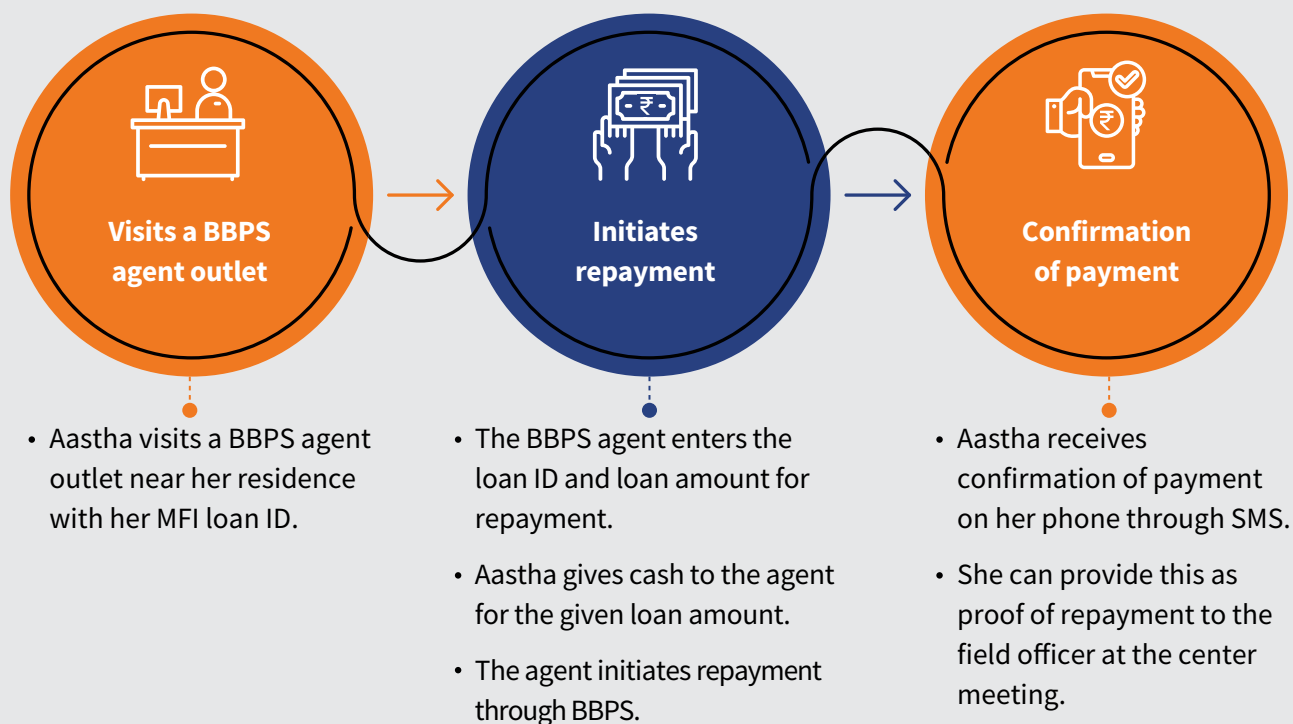


Figure 7: Customer journey of a borrower who uses the assisted mode for repayment

Using the assisted mode of repayment through BBPS agents would help MFI borrowers as it reduces the time taken and cost incurred to visit center meetings, provides them with proof of payment (confirmation of payment through SMS), and helps build trust in digital payments. The figure below maps the customer journey of an MFI borrower using assisted mode, and the benefits that follow. (Figure 8)



Aastha is a 26-year-old homemaker who regularly takes loans for household expenses under the joint liability group (JLG) model of microfinance institutions (MFIs). She makes the repayments weekly during the group meetings.

Location:

Tier 3 (rural)

Ownership of phone:

Owns a feature phone

Education:

Up to class 10

Key challenge before BBPS:

Time taken in making offline loan repayments and handling cash

Since Aastha is her household's sole caregiver, she finds the group meetings time-taking and often struggles to manage her household responsibilities. Further, she has to visit the nearest bank branch to withdraw cash to make her weekly repayments.

Role of BBPS:

Ease of loan repayment process

The loan officer of the MFI recommended that Aastha could make her weekly repayments at the nearest agent point. This would reduce the hassle of handling cash, and she would not lose out on time during group meetings. She has been making her weekly repayments through the nearest agent point since the past six months.

Figure 8: Role of BBPS to ease the MFI repayment process for the borrower

2. MFI borrower who uses the self-initiated mode for repayment: 30% of borrowers use smartphones for digital payments, with an increasing number of borrowers looking for digital payment solutions for MFI loan repayments. BBPS can provide an interoperable, and reliable payment solution for these borrowers which allows them to pay through their preferred payment mode. The figure below maps the user journey of a borrower making MFI loan repayments through BBPS. (Figure 9)

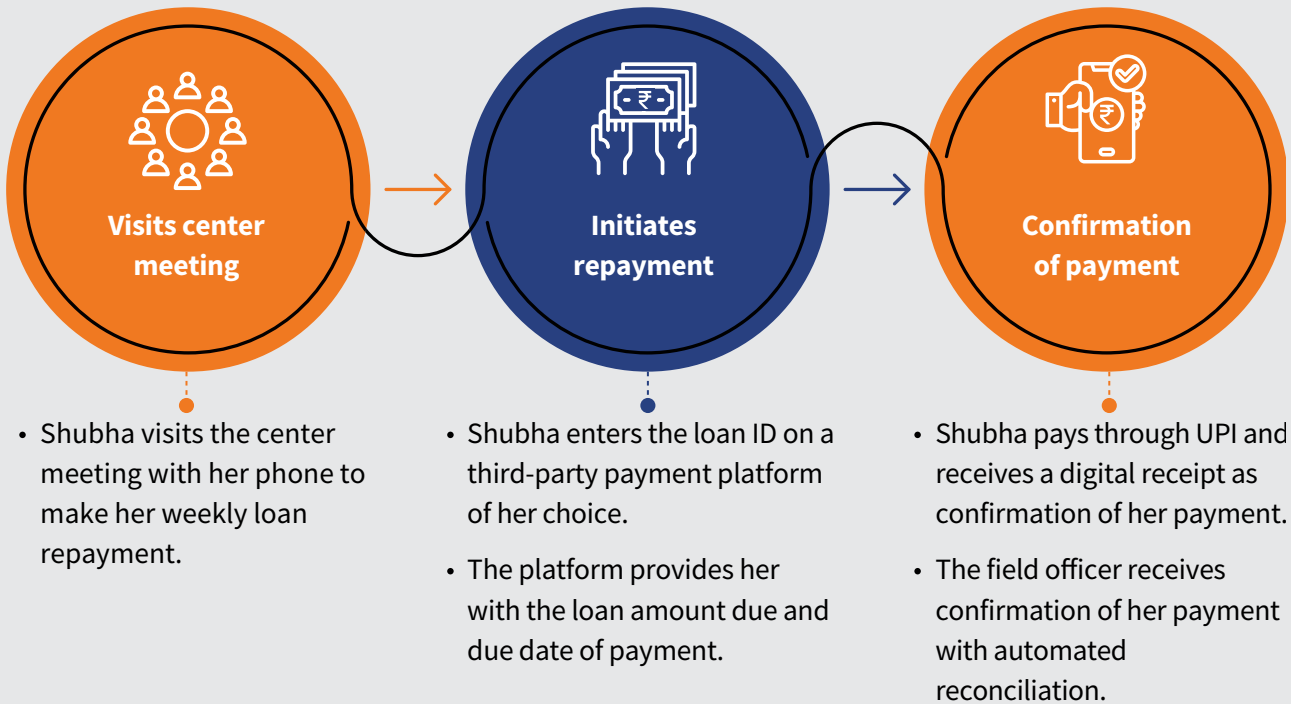


Figure 9: Customer journey of a borrower using a self-initiated mode for repayment

Using the self-initiated mode of repayment through BBPS, MFI borrowers can pay their loans with ease through third-party payment applications they use for other digital payments. Further, the borrowers would save the time and cost incurred in visiting center meetings. The figure below maps the user journey of a borrower using self-initiated mode through BBPS. (Figure 10)



Shubha is a 32-year-old domestic worker who takes income generation loans under the joint liability group (JLG) model of microfinance institutions (MFIs). She uses digital payments actively but the MFI app is cumbersome and difficult to use. Hence, she makes cash repayments.

Location:
Tier 2 (semi-urban)

Ownership of phone:
Owns a smartphone

Education:
Up to Class 12

Key challenge before BBPS:
Lack of online payment options

Shubha would prefer to make loan repayments digitally, as she uses digital payments for merchant payments, mobile recharge, and other transactions. However, she has often faced transaction failures with the MFI app and website.

Role of BBPS:
Ease of loan repayment process

The loan officer informed Shubha about BBPS and the multiple payment modes through which she can make payments. She can save time and cost she would otherwise incur when she has to visit center meetings and withdraw cash beforehand.

Figure 10: The role of BBPS to ease the MFI repayment process for the borrower

Opportunities with the digitization of loan repayments:

MFIs adopting digital payment solutions for repayments can reduce hassle in collections, and employ their resources towards other value-added services for their customers. The figure below lists the key opportunities for MFIs with the digitization of repayments:



Figure 11: Opportunities for MFIs and their customers with digitization of repayments

3.2. Digitization of retailer-to-distributor payments in the dairy sector

Context and problem statement

The dairy sector in India contributes more than 20% of India's agricultural GDP annually, with a market size that exceeds INR 14.8 trillion (USD 178 billion). It comprises organized segments, such as cooperatives and private dairies, and unorganized segments that include traditional dairy farmers and vendors. The payment flow in the dairy value chain in organized segments comprises upstream and downstream payments, which vary based on the type of dairy product.

An MSC study in 2022 revealed that in the case of fresh milk products, retailers are linked directly to dairy manufacturers. In the case of processed products, the retailers get their supplies through distributors. The majority of the retailers make downstream payments to distributors and manufacturers through cash or cheques. This increases the time and cost retailers incur in daily visits to the bank to withdraw cash and reconcile payments manually.

Since most retailers continue to make cash payments to the distributors, an opportunity has emerged to digitize payments across the dairy value chain. Digitized payments would benefit retailers with reduced cost of cash management, ease of payment reconciliation, and reduced effort in bookkeeping.



Key issue in the digitization of B2B payments:

Low uptake and usage of digital payment solutions by retailers for distributor payments.

Needs assessment of retailers in the dairy value chain:

An MSC study in 2021 identified the digital and financial behavior of retailers to understand the barriers to the uptake of digital channels for B2B payments. The key barriers are listed below:

- 1. Limited digital readiness of retailers:** Retailers prefer to pay their distributors in cash due to several reasons, such as poor infrastructure, lack of awareness of digital financial services, limited skills to make digital payments, and low willingness due to a lack of trust or tax compliances and a fear of transaction failure, among others.
- 2. Concerns on the safety of digital payments:** Some retailers hesitate to use digital payments for B2B payments as they worry about the transaction's safety and security, and tax liability issues, among others.
- 3. Limited bandwidth to manage bills and inventory:** Retailers usually have limited time and resources to manage their bills and payments. This remains a key challenge that hinders their adoption of new payment and management tools.
- 4. High dependency on customers and their payment mode preference:** Customer preference for digital or cash guides the retailers' payments to distributors and plays a key role in the payment cycles and processes in the value chain.

Industry initiatives toward digitization of retailer-distributor payments:

Some dairy manufacturers and distributors have taken initiatives toward digitization by developing manufacturer-led mobile applications and online platforms to manage retailer-to-distributor orders and payments. Innovations in B2B payments, including online B2B marketplaces and downstream payment management systems for manufacturers, have enabled dairy retailers to make payments through digital payment modes. The retailers benefit from efficient inventory management, overdraft facility for payments, and availability of a wide variety of products. Yet, more than 80% of retailers continue to depend on the traditional distribution channel.

As per the MSC study, a retailer typically sources products from at least two to three distributors mapped to different manufacturers. (Figure 12) A retailer that uses manufacturer-led online payment solutions would thus need to use multiple applications. This increases the hassle for retailers when they have to pay distributors and provides them a limited incentive to shift toward digital payments. A standardized, interoperable payment solution is needed that can help traditional retailers to pay multiple distributors.

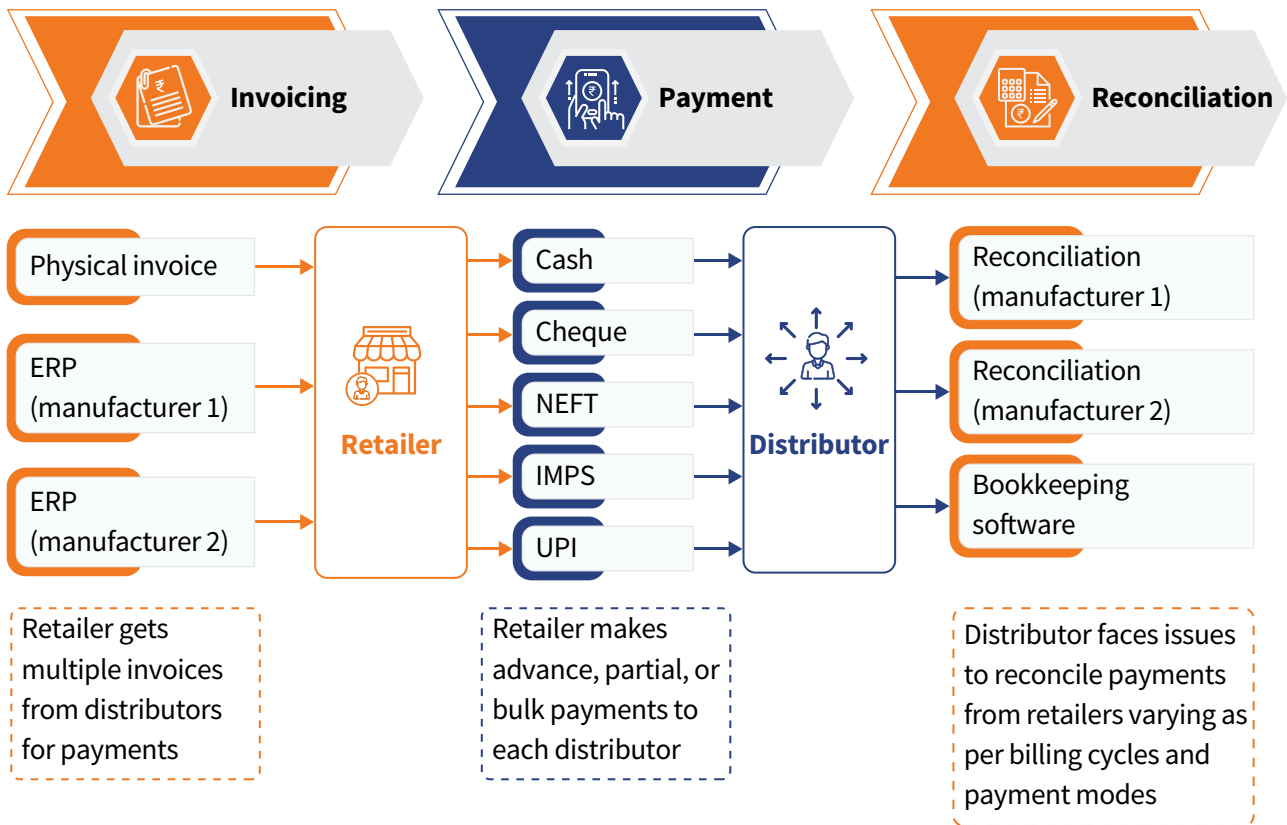


Figure 12: Current structure of retailer-to-distributor payments in the dairy value chain



BBPS can play a pivotal role in the digitization of retailer to distributor payments in the dairy sector

The current initiatives to digitize retailer payments have seen limited uptake among traditional retailers due to a lack of interoperability of payment solutions, lack of availability of partial payment options, and concerns around the safety of digital payments. As a payment solution, BBPS can help resolve the retailers' pain points while it eases the payment process for stakeholders across the supply chain. (Figure 13)

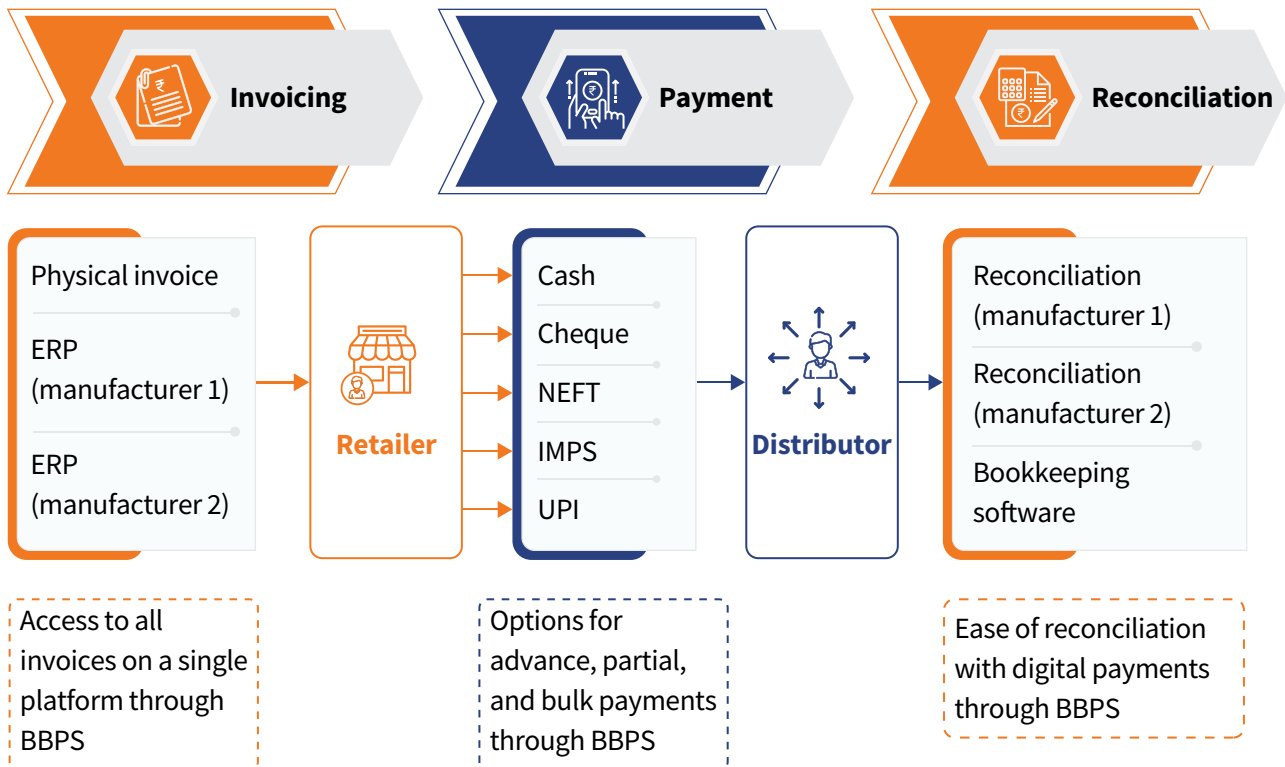


Figure 13: Ease of retailer-to-distributor payments in the dairy value chain using BBPS

BBPS can be integrated for retailer-to-distributor payments through manufacturer-led payment applications or through integration with downstream payment management systems used by dairy manufacturers. BBPS can offer the following key value propositions:

- 1. Safety and security of transactions:** Most traditional retailers prefer to pay distributors in cash due to limited awareness of digital payments and concerns about the safety and security of digital payments. As a payment solution, BBPS would help build retailers' trust in digital payments through a standardized receipt for distributor payments.
- 2. Interoperability of the payment solution:** The retailers that currently use digital payment solutions are restricted to payment modes accepted by the distributor-led and manufacturer-led payment solutions. As a payment solution, BBPS would provide retailers with the option to pay through their preferred payment channel and mode.
- 3. Ease of business operations:** Distributors currently struggle to track retailer payments due to different payment cycles and modes. Through BBPS, distributors would be able to accept partial and full payments from retailers with varied payment cycles. BBPS would ease the reconciliation and

settlement process for the distributor with detailed transaction histories and digital invoices. Similarly, the invoice received through BBPS payments would help retailers track payments made to distributors and ease the accounting and bookkeeping processes.

User journey of a retailer using BBPS

Using BBPS would help ease the payment process for retailers, with instant confirmation of payment, and a digital invoice for distributor payments. The figure below elucidates the retailer's payment journey through BBPS (Figure 14)

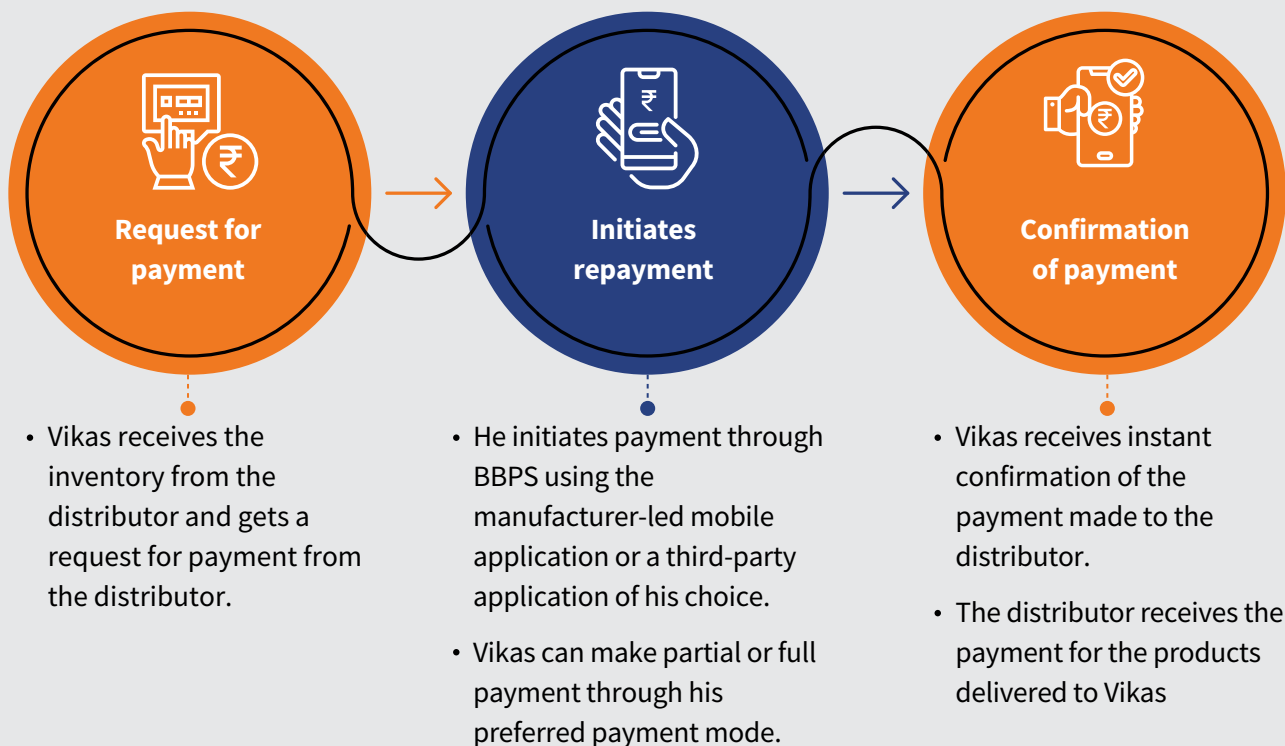


Figure 14: Customer journey of a retailer in the dairy sector using BBPS for B2B payments

Retailers using BBPS for distributor payments can improve their business operations with a simplified reconciliation process, and improved ease in management of accounts and bookkeeping. The figure below illustrates the role of BBPS in improving the ease of B2B payments for retailers. (Figure 15)



Vikas is a 30-year-old milk vendor who runs his own store in Tumkur. He regularly uses digital payments through mobile applications. He is digitally savvy and uses multiple bill payment applications for personal and business purpose. He accepts digital payments from his customers on a regular basis.

Location:
Tier 2 (semi urban)

Ownership of phone:
Owns a smartphone

Education:
Up to Class 12

Key challenge before BBPS:
Cash payments to distributors leading to issues in reconciliation

Currently, Vikas sources his stock from three distributors for fresh milk and processed milk products. He makes cash payments for the inventory purchased. This leads to issues in the reconciliation and bookkeeping process. He needs a payment solution to ease the process of distributor payments.

Role of BBPS:
Streamlined and standardized bill payments

Vikas became aware of BBPS through a distributor. He has adopted digital payments through BBPS for all distributor-related payments. This helps Vikas confirm the payment instantly and manage bookkeeping.

Figure 15: Role of BBPS in easing B2B payments for retailers in the dairy sector

Opportunities with digitization of retailer to distributor payments

Retailers and distributors adopting BBPS for B2B payments can help improve efficiency in business operations which would help in the growth and expansion of their business. The figure below lists the key opportunities for retailers and distributors:



Figure 16: Opportunities for dairy retailers with digitization of distributor payments

4. BBPS: The decade ahead

4.1. Evolution of BBPS

The bill payment market in India was highly fragmented until 2016 and had limited biller aggregators and multiple billers across different geographies that provided limited payment options to customers. The Reserve Bank of India (RBI) identified these gaps in bill payment services and conceptualized the Bharat Bill Payment System (BBPS) as an integrated solution that brings together billers, banks, biller aggregators, and other stakeholders on a single platform for instant bill payments.

Moreover, BBPS includes both physical and digital channels of bill payments using a variety of payment modes. The central bank authorized the National Payment Corporation of India (NPCI) as the centralized standard-setting body to manage BBPS, and initiated a pilot project in 2016 with 26 BBPOUs (Bharat Bill Pay Operating Units) to assess the viability of the new bill payment system. After the initial pilot project, the RBI granted approval in October 2017 to launch BBPS as a live payment system for bill payments in India.

Since its inception in 2017, BBPS has revolutionized India's bill payments landscape. It provides customers with the convenience to make round-the-clock bill payments to multiple billers from a single platform. BBPS has grown at a CAGR of 73% by volume from 2017-18 to 2022-23. Estimates suggest the transaction volume of BBPS will increase to more than 3 billion by 2026. Several factors lead to the growth in value and volume of transactions. These include a responsive regulatory framework, growth in the number of participants, and expansion of biller categories. (Figure 17)



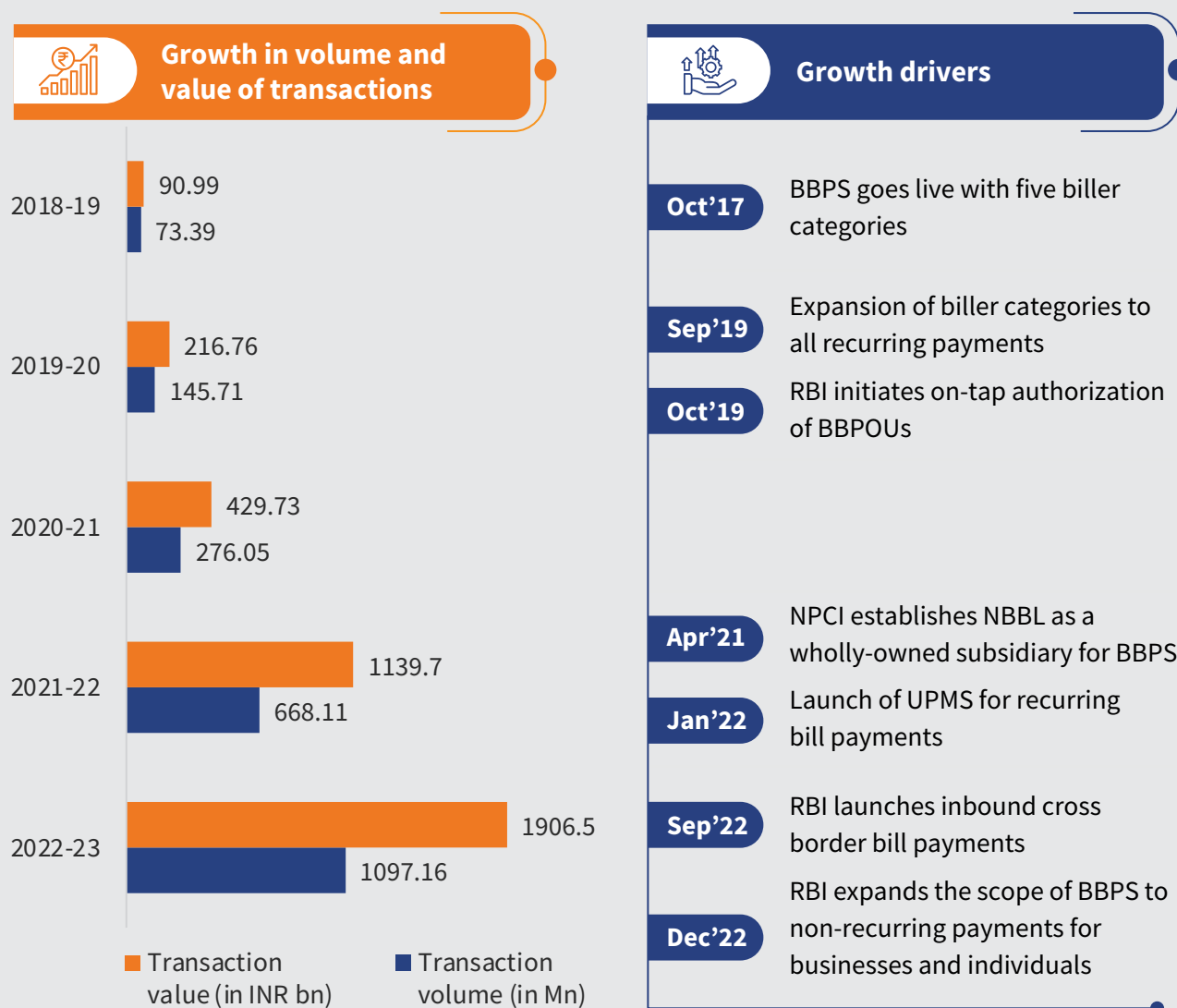


Figure 17: Key growth drivers leading to the rise in volume and value of transactions for BBPS

4.2. BBPS ascends in its journey with a focus on collections

During 2017-2022, BBPS has onboarded more than 21,000 billers that cumulatively make more than INR 1.1 trillion (USD 13.3 billion) in collections across multiple categories as of March 2023. BBPS has introduced use cases relevant to individuals and businesses alike to provide the convenience of payments across P2P, P2B, and P2G. However, the scope of expansion in BBPS portrays immense potential after RBI allowed BBPS to foray into non-recurring payments. Customers who pay through BBPS use it for a wide category of payments, such as loan repayments, utility bills, FASTag, and mobile postpaid, among others. BBPS has the potential to serve more collections use cases for individuals and businesses that are yet to come under the digital payments purview.

This untapped market provides BBPS with the opportunity to expand payment categories and offer a holistic solution for all types of mandate-based payments, especially collections. In its next phase of growth, BBPS intends to become the operating system of collections in India. It shows the potential to be universally capable of supporting all types of collections in India and empower its ecosystem partners to

innovate further and engage with customers. BBPS seeks to include more relevant use cases that have a huge addressable market, which would lead to an increased inclusion of different customer segments and increase its relevance for the masses. Further, BBPS intends to expand to tier 3 and below areas in India to ease the process of collections for the underserved and unserved segments countrywide. This would also increase the overall volume and value of collections across categories of payments made to individuals, businesses, and the government.

BBPS intends to become the de facto collection platform by leveraging its strength as an interoperable, standardized payment system that facilitates both physical and online collections through various payment modes. In its next phase, BBPS will work with ecosystem partners to develop solutions for P2P and P2G transactions while expanding the uptake of the current P2M, P2G, and B2B payments within its ambit.

BBPS seeks to tap into the opportunities for digitization across use cases, and build innovative solutions to improve access, convenience, and security in collection payments. The key value propositions that BBPS can bring within the collections ecosystem:

1. Standardization and consolidation of stakeholders in collections
2. Reduced barriers of entry for new players
3. Enhanced user experience

The expansion of BBPS toward non-recurring payments will enable it to serve a variety of use cases and develop payment solutions for its ecosystem partners. In its next phase, we expect BBPS to make bill payments and collections inclusive for users across varying digital and financial literacy levels. This would help drive the growth of digital collections in India, and thus improve the uptake of digital payments in India for the next billion customers.



Annexes

Customer segments for assessment of digital readiness

1. An MSC study from 2018 highlights that India’s population can be divided into five segments based on their daily household income. The figure below provides an overview of these customers’ digital and financial behavior for each of these segments as of March 2023. (Source: NCAER-CMCR, SEC classification, MSC analysis)

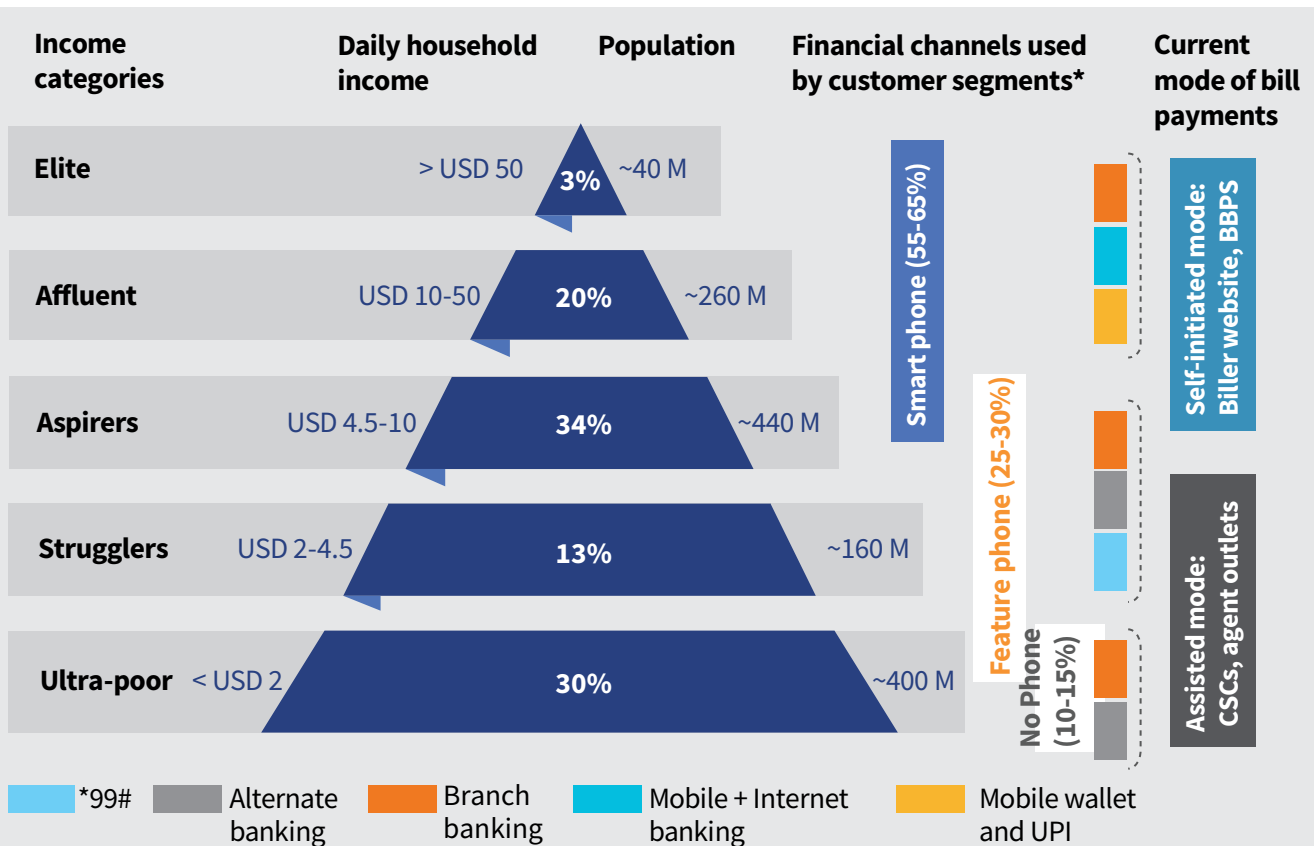


Figure 18: Customer segments based on digital readiness, and bill payment modes used

We have identified the key customer segments for each use case to assess the digital readiness of the customers for the use case:

Payment category	Target customer segment	Current payment mode used for collections	Digital readiness of customers	Cost and effort in digitization
P2P				
Domestic remittances	Ultra poor, strugglers, and aspirers	Assisted: CSCs, agent outlets	Low	High

Payment category	Target customer segment	Current payment mode used for collections	Digital readiness of customers	Cost and effort in digitization
Blue collar worker segments	Ultra poor, strugglers, and aspirers	Assisted: CSCs, agent outlets	Low	Low
P2M				
Residential payments	Affluent and elite	Self-initiated modes	High	Medium
MFI loan repayments	Ultra poor, strugglers, and aspirers	Assisted: CSCs, agent outlets, MFI branch office	Low	Medium
Mobility-related payments	Ultra poor, strugglers, and aspirers	Self-initiated: Third-party payment applications	Low	High
Wallet recharge	Affluent and elite	Self-initiated: Third-party payment applications	High	Low
P2G				
<i>Challan fees</i>	Aspirers, affluent, and elite	Assisted: RTO office	Medium	Low
Tax payments	Aspirers, affluent, and elite	Assisted and self-initiated modes: Government portal	High	Low
Unreserved category payments in railways	Ultra poor, strugglers, and aspirers	Assisted modes: Railway booking counter, travel agents	Low	Medium
B2B				
Corporate vendor payouts	Affluent, and elite	Self-initiated modes	High	High
Retailer-to-distributor payments	Strugglers, aspirers, and affluent	Assisted modes	Medium	Medium
Loan repayments by small businesses	Strugglers, aspirers, and affluent	Assisted mode: Bank branch Self-initiated: Auto-debit from the bank account	Medium	Medium
B2G				
<i>GST challan</i>	Aspirers, affluent, and elite	Self-initiated mode: Online government portal	High	High
Corporate payments to urban local bodies	Aspirers, affluent, and elite	Assisted and self-initiated modes	Medium	High

List of abbreviations

Abbreviation	Full form
AWS	Amazon Web Services
B2B	Business-to-business payments
B2G	Business-to-government payments
BBPS	Bharat Bill Payment System
CSC	Customer service centre
FMCG	Fast-moving consumer goods
GST	Goods and Services Tax
JLG	Joint liability group
MFI	Microfinance institution
MUDRA	Micro Units Development and Refinance Agency Ltd.
NABARD	National Bank for Agricultural and Rural Development
NCMC	National Common Mobility Card
P2G	Person-to-government payments
P2M	Person-to-merchant payments
P2P	Person-to-person payments
QR code	Quick response code
RTO	Regional Transport Office
SIDBI	Small Industries Development Bank of India
TAM	Total addressable market
UPI	Unified Payment Interface
UPMS	Unified Presentment Management System
UTS	Unreserved Ticketing System

Glossary

Term	Explanation
Biller collection point	A biller collection point is a physical location where customers can pay their bills in person. This can be a retail store, a bank branch, or a post office. Biller collection points are often used by utility companies, telecommunications providers, and other businesses that bill their customers on a regular basis.
Bill aggregator	A bill aggregator is a company that provides a single platform for customers to pay their bills from multiple providers. This can be a convenient way for customers to manage their bills, as they can see all of their bills in one place and pay them with a single payment.
Billers	Billers are the service providers who collect payments from customers. Billers of all recurring nature, i.e., periodic or repetitive, would be part of Bharat BillPay. These entities participate in the BBPS through a Biller BBPOU, authorized by the Reserve Bank of India.
BBPOU	BBPOU stands for Bharat Bill Payment Operating Unit, which is an entity authorized by the Reserve Bank of India (RBI) to operate the Bharat Bill Payment System (BBPS). The BBPS is an interoperable bill payment system that allows customers to pay their bills through a single platform. BBPOUs are responsible for onboarding billers and agents, and for providing bill payment services to customers.
Payment collection	Payment collection refers to the process of collecting money that customers owe to a biller. This can include payments for utilities, telecom, insurance, and other recurring bills. The biller or a third-party collection agent can initiate the collection process.

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