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EMERGING OPPORTUNITIES FOR DIGITAL LENDING IN INDIA

REPORT

January, 2023

Contents

Foreword

The Digital Lenders Association of India (DLAI) is proud to present this whitepaper on Emerging Opportunities in Digital Lending. DLAI has formed a Knowledge Committee, which has been working with various partners and members to bring out whitepapers, podcasts, and webinars that cover important topics in the FinTech industry. This whitepaper is the latest in our ongoing efforts to provide valuable insights and knowledge to our members and the industry at large.

This whitepaper provides a comprehensive look at the history of lending, from its origins in ancient Greece to the current digital lending landscape both globally and in India. It covers the successes and growth drivers of the industry, as well as the opportunity of INR 12 trillion that awaits India in the digital lending space. The paper also delves into specific areas such as Rural lending, ONDC, Green financing, CBDC, Imperatives for digital lenders, infrastructure support required, and the 12 moves to crack 12 trillion.

We are proud to have collaborated with Praxis Global Alliance to bring you this whitepaper. We believe that this whitepaper will be a valuable resource for anyone interested in understanding the current state of digital lending and the opportunities that lie ahead.

We hope you will find this whitepaper informative and thought-provoking.

- **Digital Lenders Association of India**

INTRODUCTION

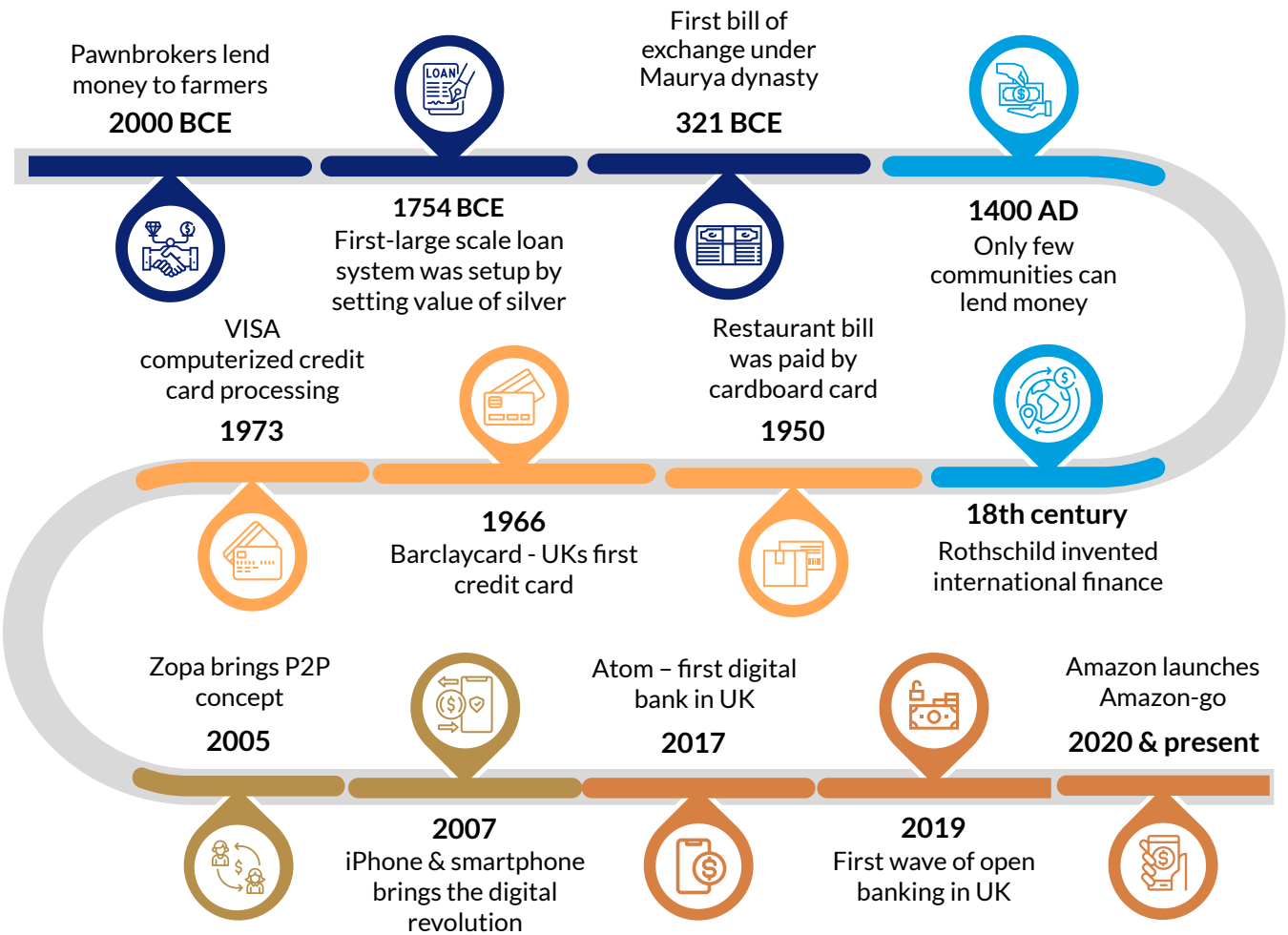
01 Introduction

The new fancy building which recently caught your eye or the new car which went past you in a zoom, and all the assets you see around, it is quite likely that most of them have been funded through credit in one form or another. Lending is ubiquitous - from high-ticket items like property, car, and post-graduate college fee to low-ticket items like appliances and even apparel.

You might think of verbal agreements with friends and family or even borrowing some money to buy drinks or asking for a bit of help for rent as a form of lending. Even the mention of the word lending was seen in the play written in the 1600s by the great playwriter Shakespeare - The Merchant of Venice, where the character Shylock lends money and actually demands a pound of his flesh as collateral. (Putting up your house as collateral does not sound so bad, right?)

But lending began much earlier than the 1600s and was discussed widely in art and literature all around the world. Lending has played a vital role from ancient times to our modern era.

Figure 01: The history of lending



1.1 Early forms of lending

The earliest known example of lending dates back 4,000 years all the way back to 2000 BCE, when loans were given out to farmers using seeds, grains, and livestock as repayment options to borrow capital. Perhaps lending existed even before that, but the oldest documented evidence dates to 2000 BCE in Ancient Rome and Greece. Pawnbrokers, prominent lenders in Ancient Greece, lent money by collecting collateral from borrower as a protection in case the borrower defaulted. This system involved exchanging of goods, for example, borrower used to give equal amount of goods in exchange for the money he/she intended to borrow from the lender. In the Zamindar system, borrower used to pay back by working for the zamindar.

In 1754 BCE in Mesopotamia, the first at-scale lending framework was set up by defining the value of a silver coin & regulating the interest rate to be charged on it. Silver, at that time, was gaining popularity and the need was felt to regulate lending arrangements to cater to the needs of the growing city. In 321 BCE, the first bill of exchange was issued under the Maurya dynasty, which involved a written order that bound one individual to another, instructing payment of a fixed amount at a fixed date in the future.

1.2 Middle Ages

In 1400 AD, certain reforms took place in communities and only a few selected communities were left to lend money. This continued till the 18th century when the huge economic benefits began to be realized by other communities, which eventually led to the dilution of the restrictions and created the foundation of the banking system we know today.

1.3 18th century: Industrial revolution

By the 18th century, there was a significant shift to indentured loans. In this practice, borrowers had to work off to repay their loans to the rich. With international trade booming, banking industry had a lot to catch up, it was then that the founding "father of international finance" Mayer Amschel Rothschild sent his seven children across Europe to set up different branches. At the same time, the Philadelphia savings fund society opened its door as a loan resource and became the very first savings bank in the US.

1.4 20th century: Cards are the new silver

In 1950, the first payment at a restaurant was made through a cardboard card, now called the Diners Club card. A few years later, Bank of America started issuing its own cards, the very good old Visa. The card was sent to 60,000 residents, this 'demand' enabled the bank to convince merchants to accept their cards. By 1959, FICO scores were widespread & used while evaluating mortgage loans. By 1966, Barclays also launched its own credit card - Barclaycard.

Before computerization, the payment process was slow & manual - calls had to be made between banks, merchants & customers to confirm the status of the payment. In 1973, the CEO of Visa, Dee Hock, computerized credit card processing, lowering the wait time to less than a minute.

1.5 Late 20th century: Online is the new buzzword

The growth of credit and the attendant processing requirements were powered by growing computing power, which allowed automation of many of these tasks. The development of analytics also transformed the lending process.

Quicken loans in 1985, offered most of its lending solutions online. In 1995, Freddie Mac & Fannie Mae recommended FICO scores for evaluating mortgage loans. By 1997, predictive modeling was widely accepted as a risk mitigation tool.

Jump forward to 2000s, First Internet Bank transformed the way banking was done, by setting-up an online only bank, offering home loans & other banking services. Now, borrowers no longer needed to step out of their homes to avail loans.

1.6 Early 21st century: Banking substitute in the making

Zopa revolutionized the concept of lending by introducing a Peer-to-Peer lending facility in the UK. Since its inception in 2005, Zopa has lent over £ 1.45 billion to UK customers primarily for cars, credit cards & for home furnishing. Followed by more players like Prosper, and Lending club, which kicked off the peer-to-peer lending market in the US. 2007 marked the entry of the iPhone and things were never the same again - mobile banking, online shopping & payments gained much more popularity due to the emergence of smartphones.

The lending market started to become increasingly competitive as lenders competed to meet rising customer expectations. BBVA, one of the pioneers of digital banking, saw a 45% growth in consumer loans through digital channels in 2015. In 2017, Atom the first app-based digital bank launched in the UK followed by Starling Bank. By 2019, the first wave of open banking hit the UK market with a sharp spike in the use of API calls across all the banks. While all of this seems quite commonplace today, it is indeed interesting and instructive to reflect on the journey of lending the history of finance and banking.

DIGITAL LENDING LANDSCAPE

02 Digital lending landscape

In today's world, the term 'digital lending' is rapidly becoming a tautology – can lending even be done any other way? Traditional lending is a long-drawn process involving several complicated steps right from origination till disbursement. The key steps involved in a traditional lending journey are:

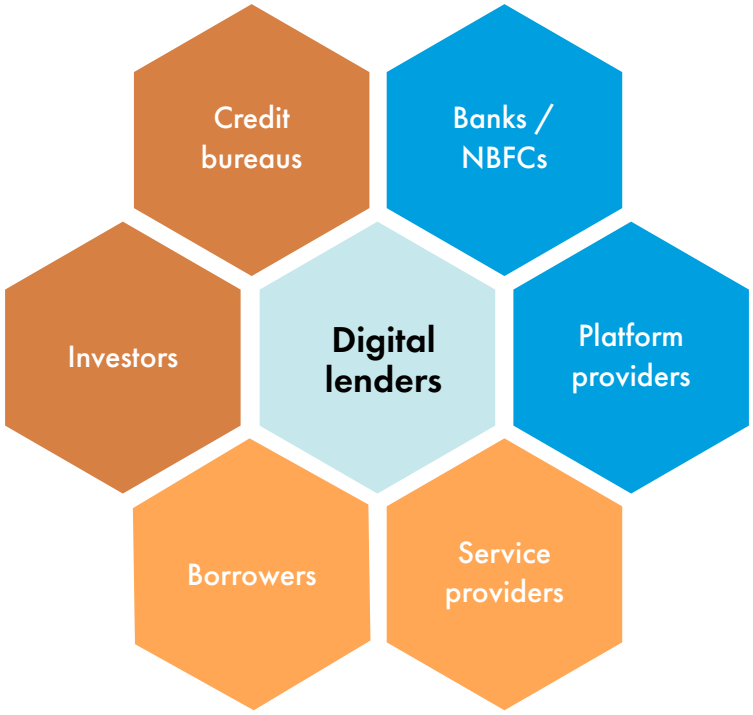
Figure 02 : Traditional lending process

On an average, the time to decision for business loans is easily upwards of a fortnight, and the average time to cash is nearly two months, which seems antiquated & unacceptable considering one can complete a world tour in a similar time frame. Leading banks have embraced the digital lending revolution, bringing "time-to-yes" to within hours or even minutes & "time-to-cash" within a day or perhaps a few hours.

2.1 Digital lending ecosystem

Digital lending involves lending through digital platforms be it web platforms or through an app-based interface. It makes use of automated technologies & algorithms for target marketing and lead generation to loan closing and auditing; digital lending can help improve the entire lending lifecycle by shortening and removing bottlenecks.

Figure 03 : Digital lending ecosystem



Let us look at the key benefits digital lending can provide:

- **Increased efficiency and lower costs**: Digital lending platforms can automate many of the processes involved in lending, such as loan application, underwriting, and servicing, which can reduce operational costs, increase efficiency, and can allow lenders to offer loans at lower interest rates.

- **Expand reach**: Digital lending platforms can expand the reach of lenders to a wider pool of borrowers, including those who may not have access to traditional forms of credit, and in new geographic areas or demographic segments.

- **Greater scalability**: Digital lending platforms have the capability to scale up or down depending on the market demand, providing more flexibility to the lenders.

- **Improved underwriting process**: By using advanced analytics and data-driven decision making, digital lending platforms can identify creditworthy borrowers more effectively and make more informed lending decisions, which can reduce the risk of default.

Digital lending is proving to be a potent force in reaching the target of financial inclusion for everyone. While curated innovative products can help overcome the challenges of geography, transaction costs, and transparency, distinct market conditions have led to the following different lending models:

Figure 04 : Digital lending models

Online lenders	P2P lenders	Marketplace platforms	Supply chain lender	BNPL	E-commerce & social platforms
Complete digital transformation where no human intervention or calls are required. The entire journey from customer acquisition to loan disbursement, everything happens online	P2P platforms provide a medium (or act as a centralized platform) for borrowers to match with a corresponding risk-taking individual, or institution to lend money	Platforms works on proprietary algorithms, which enable the borrower to match with the right lender by charging them a nominal origination fee.	Provides digital short-term loans for micro & small firms to meet their working capital requirements	Buy Now, Pay Later (BNPL) is a type of short-term financing that allows consumers to make purchases and pay for them at a future date, often interest-free	E-commerce and social platforms leverage the user data to offer need-based credit products to their customers

2.2 Global landscape

Digital lending has been on the rise across the globe with many case studies presenting alternative viewpoints and learnings in terms of products, customer journeys, technologies and regulatory framework.

How the world lends

- **UK - Peer-to-peer lending and invoice purchasing on the rise**

  Digital lending started off in the UK in 2005, since then market has evolved into several innovative product segments and enjoys the support of the government and regulators. MSMEs contribute around ~50% to the GDP and employ close to 60% of the workforce. Despite the value they add to the nation, there is a close to £ 56 billion funding gap. The government took multiple steps to address this gap; one such was open banking. This led to disruption in the lending space led by Fintechs and e-commerce companies who brought credit to the doorstep of 3.5 million SMEs, hitherto considered uncreditworthy by the banking system. While an emerging trend in the space is peer-to-peer lending and purchasing of outstanding invoices which enables high-net-worth individuals or businesses to lend to small businesses, overall, the industry has been slow to embrace other digital innovations like automated applications and underwriting models.

- **Singapore - SMEs seeking new financial horizons beyond traditional lenders**

  SMEs have traditionally struggled to raise credit from incumbents given their stringent collateral requirements, lengthy application processes and rigid lending criteria, and end up raising funds from their families and friends instead. To address these unmet needs, several Fintech players have emerged – these new-age lenders leverage data and technology to address the deep-rooted challenges of lending to this segment. To provide further impetus to the digital lending, Singapore has established itself as a regional Fintech Hub, with investments from private as well as government-sponsored funds. Coupled with strong policy support, the growth of Fintech is expected to accelerate in the coming years. Recently, Singapore's monetary authority issued 4 fully digital banking licenses, including to a ride-hailing & food delivery business.

- **China - Using tech to offer personalized terms to the unbanked**

  MSMEs which contribute 60% to the GDP and make up for 80% of employment in rural & urban areas are increasingly important for the healthy state of the economy. Digital lenders are giving new lease of life to these borrowers who were struggling to get credit at reasonable terms. MYBank, one of the leading online lenders, disbursed close to $290 billion to nearly 16 million small borrowers. According to Bloomberg, these platforms analyze close to 3,000 variables to approve and disburse loans within minutes. China's use of big data, and social credit system powered by AI is enabling them to be world leaders in terms of offering personalized loans to the unbanked & unserved population.

Policies & regulations: The worldwide rulebook

Fostering long-term quality growth of Fintech businesses while protecting consumers from any unfair practices and curtailing systemic risk is one challenge regulatory agencies worldwide face. We take a look at some of the developments in the regulatory framework across countries in the following section:

- **UK -** London is ranked as one of the most Fintech-friendly cities in the world. U.K. regulators and policymakers have embraced digital lending as an alternative to traditional bank financing. Under Small Business, Enterprise, and Employment Act of 2015, banks are required to refer borrowers they have turned down to a list of lending alternatives, such as digital lending platforms

- **China -** China, unlike the UK, has tightened its online lending regulations since 2022. Online lending platforms (including Digital banks, trust companies, consumer financing firms, and car loan providers) now need to contribute 30 percent of their own capital for loans they disburse through commercial banks. This is seen as an initiative by the regulator to address potential systemic risks emanating from at-scale digital lending.

- **South Korea -** South Korea has also passed a law on peer-to-peer (P2P) lending that is expected to provide greater protection to consumers. Under this law, all P2P lenders are required to have paid-in capital of at least $421,000 (KRW500m) each and register with the country's financial regulator within a year. State-registered P2P lenders are also required to publicly disclose their financial information and have appropriate information security safeguards. It is expected that this will provide credibility and validation to digital lenders.

Another important segment under regulators' lens worldwide is 'open banking-enabled lending'. Open banking is basically about providing access to customer financial data via APIs to third-party financial service providers. This enables them to use this information and provide customized solutions, including lending to their users. Several aggregators are now adding open banking to their customer journeys, allowing lenders to use open banking data at the quotation stage itself, thereby increasing the odds of sanctioning a loan.

To strengthen consumers' privacy and control over their financial data, several regulators have issued directives and guidelines on open banking:

- In the UK, the 'Open Banking Implementation Entity' instructs banks on how they should allow an API to access consumer information and request payments

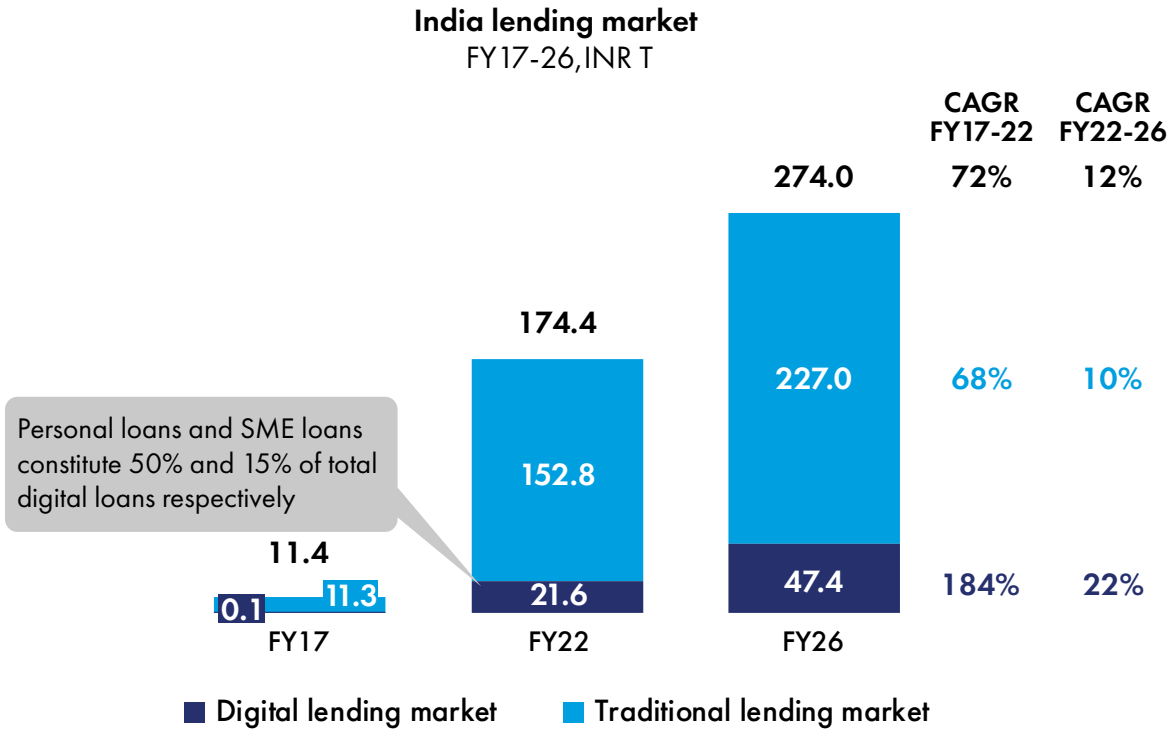
- The Monetary Authority of Singapore (MAS) has issued a legal framework called API Exchange (APIX) to encourage banks to open their systems and data for use by third-party companies and Fintechs

- Several other implementation guidelines revolving around Open banking are:
  - Open Data ATM API specification in Mexico
  - Open API Standards in Nigeria
  - The Open Banking Policy in Saudi Arabia
  - The Open Banking Framework in Bahrain

2.3 Indian Landscape

The Indian landscape has witnessed a sea-change in lending behavior, regulations, and policies to provide the required impetus to digital lending, while laying down the key regulations and principles for ensuring fair practices and acceptable systemic risks.

Figure 05 : India lending market



How India lends

Disbursement in the Indian lending market witnessed a growth of 11% and reached INR 174 trillion in FY22.

1. Banks and financial institutions are the main sources of lending in India. These include state-owned banks, private sector banks, and foreign banks, as well as non-banking financial companies (NBFCs).

2. To obtain a loan, individuals and businesses must typically meet certain eligibility criteria, such as having a good credit score and a steady income.

3. Interest rates on loans in India are generally anchored around the benchmark interest rates set by the RBI – these rates are typically used as a reference point for setting interest rates on loans.

4. In addition to interest rates, borrowers may also be required to pay other fees and charges, such as processing fees and pre-payment penalties.

5. There are a variety of loan products available in India, including personal loans, home loans, auto loans, and business loans, each having its own specific requirements and terms.

With NBFCs and other digital lenders focusing on consumer and small business loans (home loans, personal loans, vehicle loans, small business loans, microfinance loans, etc.), whereas traditional banks adopt a universal banking strategy, competing in all the key customer-product markets.

Other than meeting the demand for the MSME and other industrial sectors, digital lenders also expanded their horizons to tap into the rapidly growing retail credit market, which grew at ~20% CAGR post-pandemic.

The Fintechs focused on building intuitive customer journeys, partnerships with large ecosystems (especially e-commerce) and analytics. APIs which enabled these allowed third-party vendors, be they public or private organizations, to swiftly assess loans and deliver a decision to the customer with unprecedented swiftness.

Policies & regulations: The Indian rulebook

The digital lending market in India is undergoing exponential growth fuelled by collaboration between the Fintech sector and traditional financial players. With the Government and regulators pushing for improved digital financial infrastructure, digital lending has provided a strong push to financial inclusion, especially helping borrowers who are otherwise unlikely to benefit from formal sources of finance.

Regulators have played a crucial role in creating a favourable environment for both Fintech and incumbent lenders by spearheading several initiatives to improve the country's digital infrastructure. For instance, the Government of India, the Reserve Bank of India, and the National Payments Corporation of India have launched India Stack. India stack is a plug-and-play platform created with open APIs that can be used by lenders to get insight into consumers and offer them innovative credit products.

Considering the vulnerability of India's borrower base and in order to ensure that consumer trust in the financial sector is maintained, the RBI implemented the Digital Lending Guidelines on 10 August 2022, basis the recommendations of the Working Group on Digital Lending which was constituted in January 2021.

Figure 06: Focus of digital lending guidelines

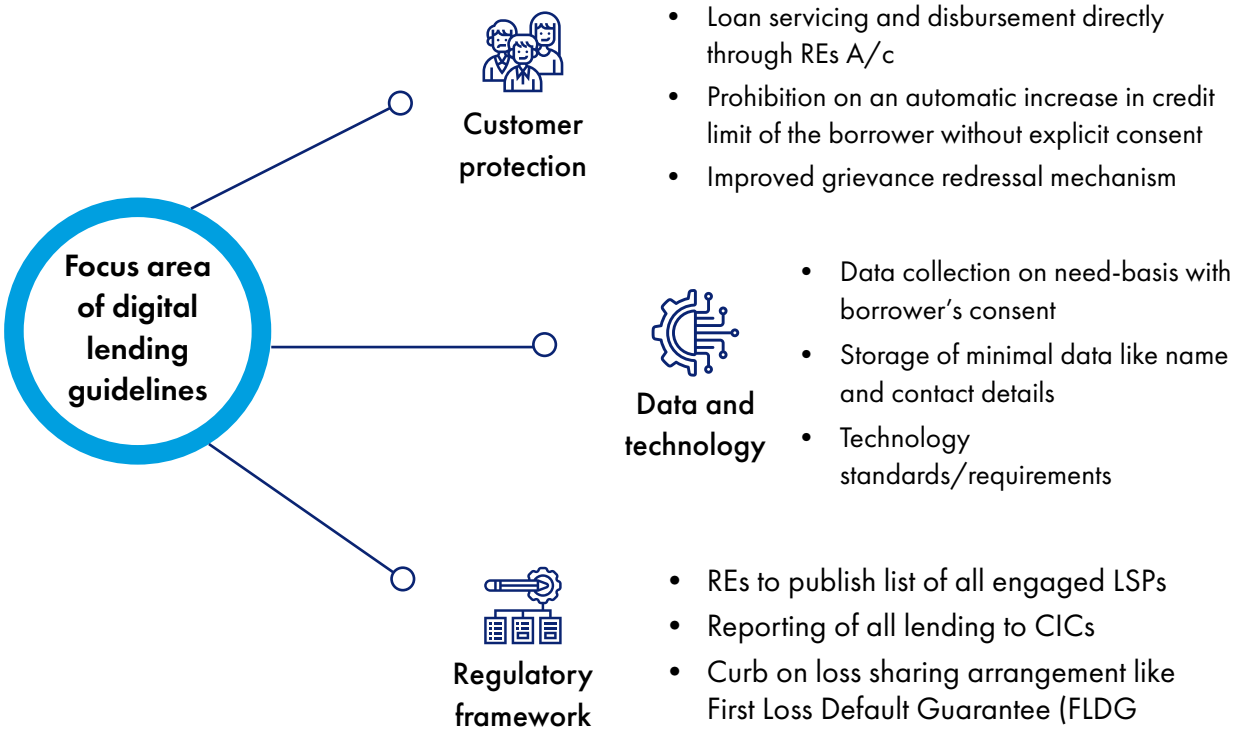
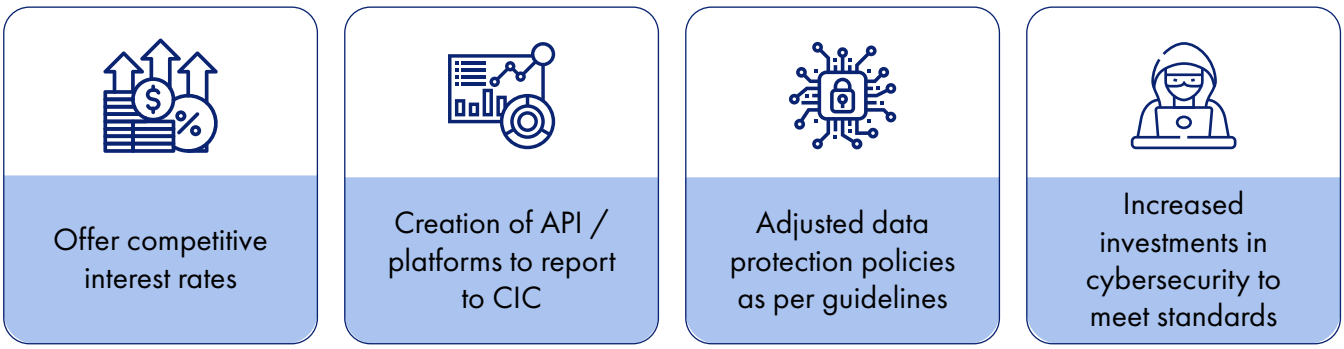


Figure 07: Impact of digital lending guidelines



With these guidelines, the RBI is ensuring that all sensitive personal data is protected, customer grievances are addressed and asymmetry in information in the system is reduced, the guidelines will also ensure that lending businesses with good intent thrive over the long term. Responsibility entrusted to regulated entities will create additional transparency in the system. Moreover, the guidelines will help prevent excessive engagement of third parties in digital lending transactions and keep a check on unethical business conduct by lenders. In summary, the new guidelines will lead to increased trust and eventually to the growth of the sector.

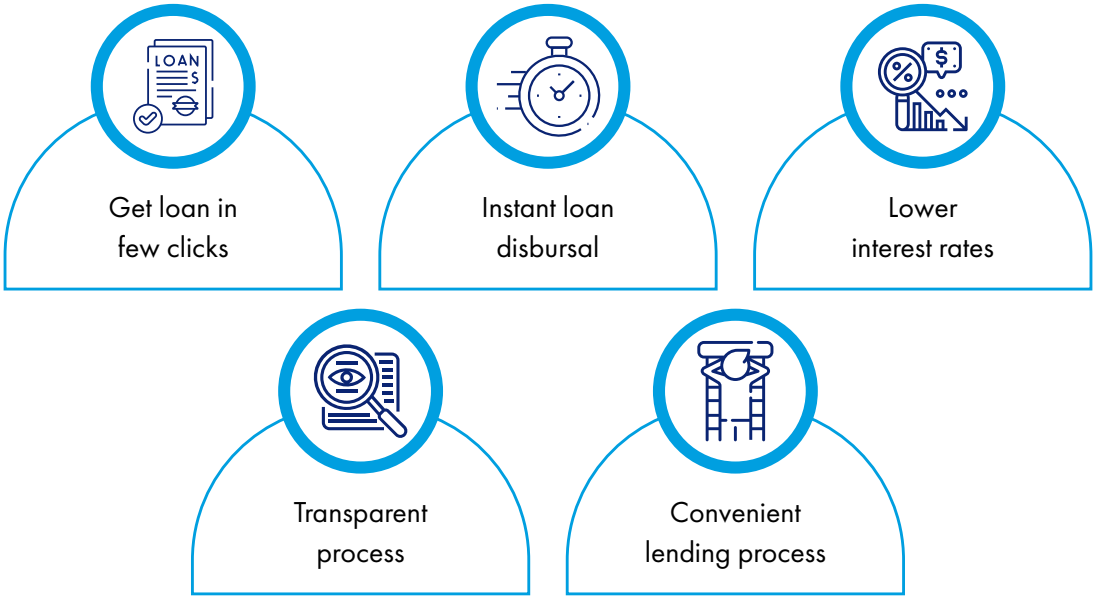
2.4 Digital Lending in India – Key success drivers

Fintechs have increased digital lending exponentially in response to rising customer expectations. Let us examine the success realized so far & the growth drivers providing the necessary impetus to the Indian landscape.

Success realized so far

The void created by traditional financial institutions was filled by new-age digital lenders by leveraging their cutting-edge technology and alternative credit assessment models to widen the customer base by targeting low-income credit-starved segments. Technological advances and a conducive policy environment have enabled Fintech lenders to address the pain-points and needs of borrowers across the value chain – from one-step KYC / onboarding to instant disbursals in a seamless manner have largely improved the customer experience.

Figure 08: Success realized by digital lending



- **No more queues**: With digital lending, customers can apply for a loan from the comfort of their homes; no more queuing up at the bank for hours. SIDBI aims to bring down the processing time for business loans to 72 hours with digitization of the underlying processes.

- **Speed and agility**: Digital lenders can process loan applications and disburse funds in minutes, making them the fastest way to access cash. A recent report by CIBIL-SIDBI highlights significant reduction in TAT from 23 days to 18 days for micro firms mainly because of digitization initiatives.

- **Cost-savings**: Digital lenders often offer competitive interest rates and fees, which means that customers will pay less in the long run. And who does not love a little extra cash?

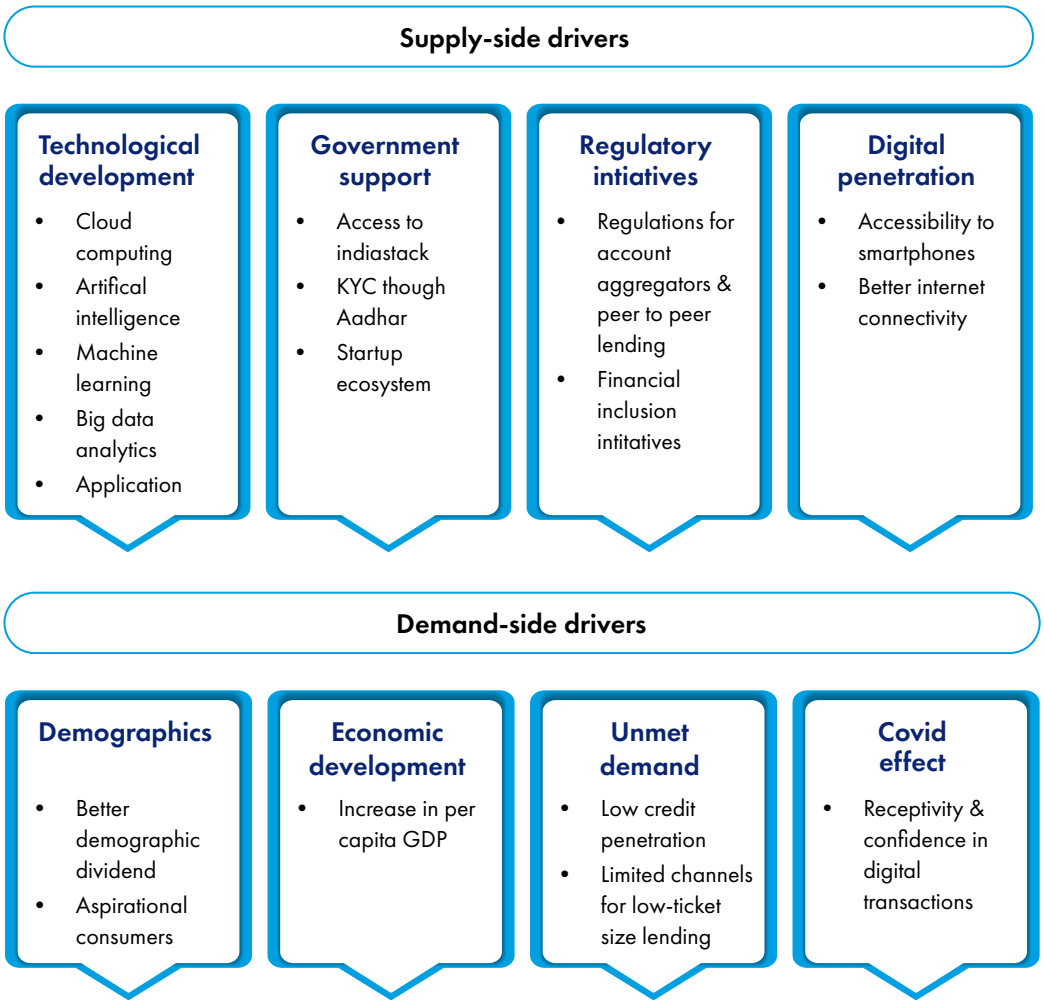
- **Transparency**: Digital lending platforms are known for being transparent, so borrowers know exactly what they are signing up for - no more hidden fees or fine print. In a survey by the National Bank for Agriculture and Rural Development (NABARD), 87% of digital lending platform users in India reported being satisfied with the level of transparency provided.

- **Convenience**: With digital lending, customers can apply for a loan anytime, anywhere. No need to take time off work or brave traffic just to get to the bank!

Growth drivers

The ubiquity of information and technology has led to the creation of many ground-breaking products, digital lending is no different. Driven by a combination of demand-side & supply-side factors, Digital lending can help India envision its aim of becoming a cash-less economy and achieving financial inclusion. Unmet credit demands among younger customers, technological advancements clubbed with high internet penetration & low level of financial inclusion currently are going to be the key growth drivers.

Figure 09: Supply side and demand side growth drivers



The following are the major drivers for the rapid growth of digital lending:

- **Increased smartphone penetration**:
  Availability of low-cost smartphones and the proliferation of cheaper 4G internet connections have made the digital dream possible for every individual. This has enabled users to have various lending options at their disposal just a few clicks away.

- **Big data analytics**:
  Smartphone revolution has led to massive volumes of data being generated and shared. This presents an opportunity to extract information through technological advancements like AI & ML models from this valuable data to create more personalized lending products, perform timely underwriting of loans & improve fraud detection.

- **Bridging technological developments**:
  A collection of APIs can be used to harness India's public digital infrastructure to design & develop more efficient lending platforms. Say, digital lenders can access Aadhaar data to authenticate & perform e-KYC, UPI can be used as a pull function to collect EMIs or Digi-locker can be used to eliminate paperwork.

- **Conducive environment**:
  Favorable policies and supportive regulations have promoted the growth of digital lending. Collaboration-based business models and availability of capital in private markets has helped digital lenders build the ammunition to target the untapped population and enable the growth of the overall industry.

ARE LENDERS RISING TO THE CHALLENGE?

03 Are lenders rising to the challenge?

Think of a departmental store at the corner of your street that seeks credit to stock up before Diwali or a small trader who wants to ramp up its production before Holi arrives. A large segment of people is still deprived of the credit to meet at least their working capital needs let alone funds for purchasing assets.

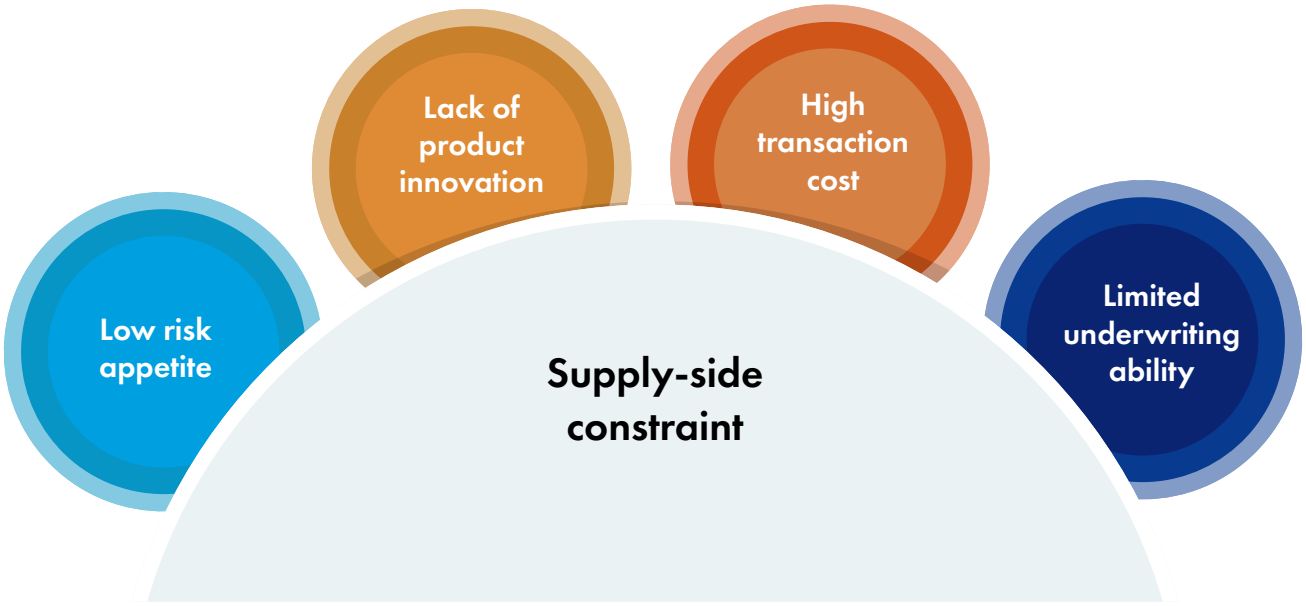
Being the fastest growing and fifth largest economy, household debt as a % of GDP is 15%, approx. 40% lower than that of USA & China, clearly a large gap that could potentially get filled. The access to credit is so limited that rather than asking who cannot have access to funds, the right question will be to question who has the access?

India's ~90 million MSMEs which contribute one-third of the GDP and employ one-fourth of the workforce face a much larger challenge, with only one in ten having access to funding from formal sources of finance. IFC estimates that the total addressable credit demand for MSME is INR 37 trillion, out of which banks, NBFCs, and other financial institutions can cater to only INR 11 trillion, which means close to INR 26 trillion remains inaccessible. Over the years, RBI has pushed for financial inclusion but there is still a huge vacuum to fill. There is a substantial credit gap, which we describe below:

1. **MSMEs Lending**:

   MSMEs continue to remain outside the formal sector's ambit and continue relying on the informal sector for faster disbursal without documentation. They often get trapped in a vicious cycle of usurious interest rates. The following are a few constraints in MSME lending:

Figure 10: Supply side constraints



a. **Limited underwriting ability**: Traditional brick-and-mortar financial institutions do not have the risk appetite for small ticket-size loans in the range of INR 100K to 1 million for micro and small enterprises.

b. **Informal sector**: Left to rely on the informal sector, this forced opting out means borrowers never build their credit history for formal lenders/ banks to evaluate against. And even if the MSME has exposure to personal or credit loan, their debt profile is so blended with formal & informal loans that the cost banks will incur for due diligence, which will eventually make the credit risk adjusted terms to be unviable for the borrower.

c. **Documentation**: The other part of this conundrum is documentation. Even if the financial institutions will be willing to lend money, the borrower has to make this long & hard journey from "thin file" to "thick file", leading to several 'drop-outs' for borrowers. The high number of touchpoints and high wait time pushes them in the direction of informal lending channels – which offer instant money with a light-touch process.

d. **Rise of new digital businesses**: Moreover, with entrepreneurship, new kinds of business models are evolving; one such is "digital-native" businesses. These emerging businesses, typically a bakery or gourmet café, have subscription-based SaaS vendors for their operations, which require them to have a customized credit line tailored to their billing and payment cycles. Traditional institutions struggling to meet the needs of conventional micro & small businesses see this as a behemoth challenge.

2. **Retail lending**:

The market is clearly underpenetrated at the retail end. A CIBIL report highlights that out of 220 million credit-eligible retail customers, only 33% are being serviced by banks. The same is evident from the credit card penetration, there are approximately 66 million outstanding credit cards vs 892 million outstanding debit cards. Clearly, the difference is huge, and innovation & policy support will provide impetus to growth in this segment.

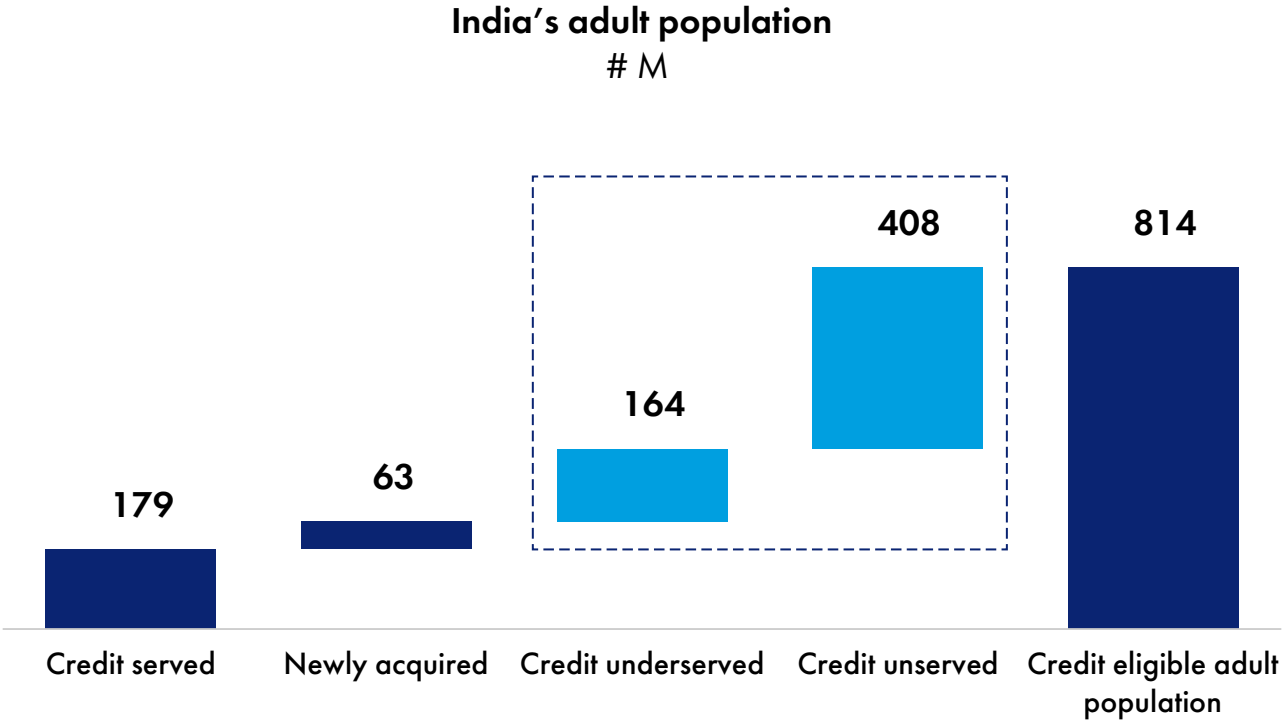
a. **Lack of credit history**: In India, there is a significant portion of population who are not formally served by the financial system and thus do not have a credit history. This is particularly true for low-income individuals, small and micro-entrepreneurs, and rural residents, who often rely on informal sources of credit such as moneylenders and friends and family. As per a CIBIL report, 50% of adult population is unserved with credit and 20% of adult population is currently underserved.

b. **Low credit score**: The average credit score in India was around 715 in FY22, with scores ranging from 300 to 900. A score above 750 is generally considered good for loan eligibility.

c. **Geographical constraints**: Many areas of India may be hard to reach for formal credit institutions, such as remote rural areas. This can make it difficult for lenders to serve these regions, and for individuals in these areas to access credit.

d. **Lack of trust and easily available informal credit sources** are additional factors responsible for under penetration in retail segment.

Figure 11: Break-up of India's credit eligible adult population



AN INR 12 TRILLION OPPORTUNITY AWAITS INDIA

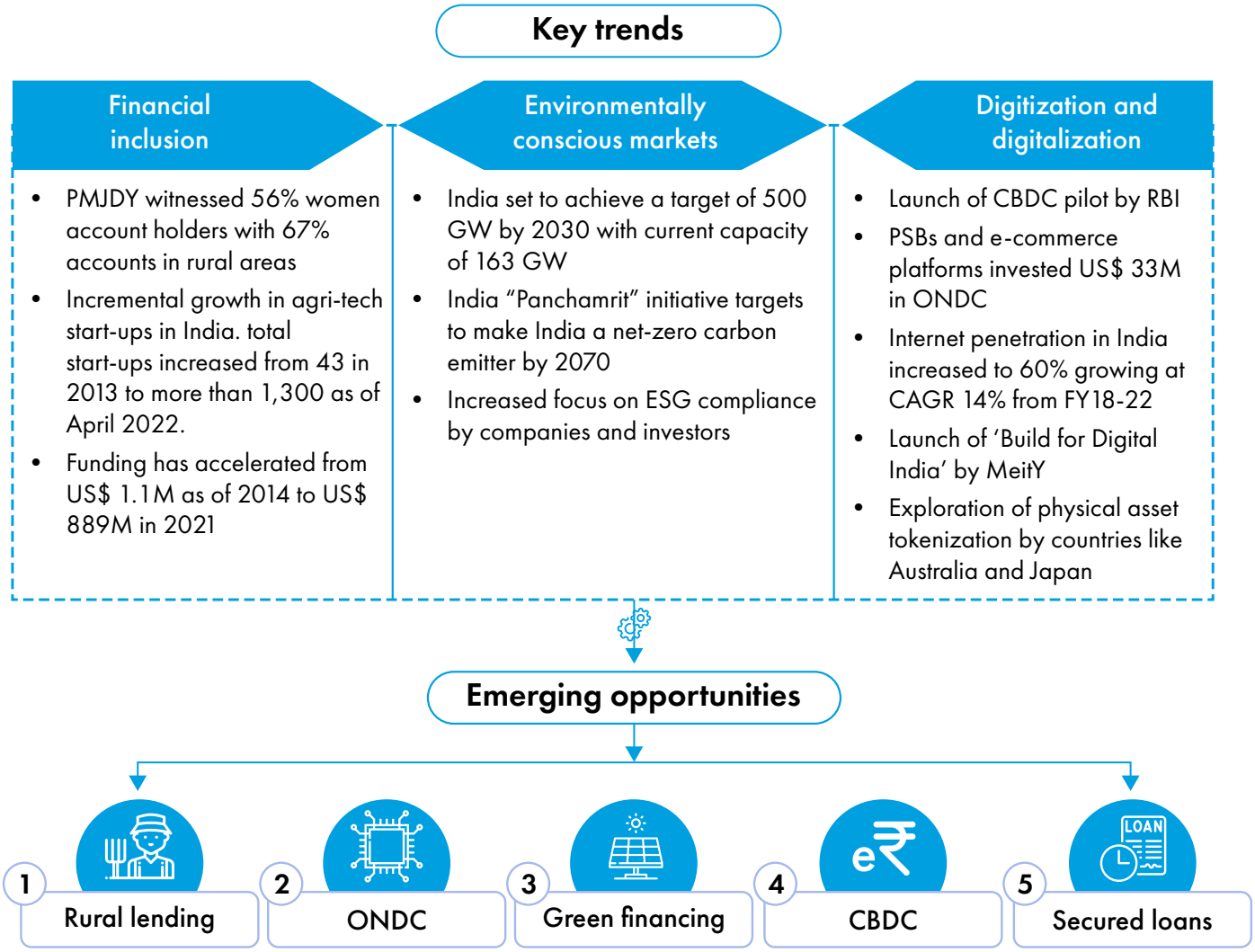
04 An INR 12 trillion opportunity awaits India

India has been waiting for its own "Banking anywhere but never at a bank" opportunity. Digital lending has been one of the most prominent off-shoots of Fintech in India. Superior customer experience and faster credit disbursals have led the way for the exponential growth of digital lending market. It is expected by 2030, digital lending can offer an opportunity of approximately INR 104 trillion.

While digital lending is certainly mainstream, it has tended to focus on unsecured consumption loans delivered at the point of sale. Embedded finance has certainly gained popularity and prominence, with its ability to offer credit at the appropriate context and juncture within the customer journey. However, the glass is certainly less than half full as far as digital lending is concerned. India stacks and Open banking have the power and potential to reshape the industry. Government-sponsored ecosystems like OCEN have onboarded close to 5.6 million sellers on its platforms, an addressable base of borrowers who really need credit available for digital lenders to tap into.

We have identified five opportunities for digital lending, emerging from three key trends (financial inclusion, sustainability and digitalization):

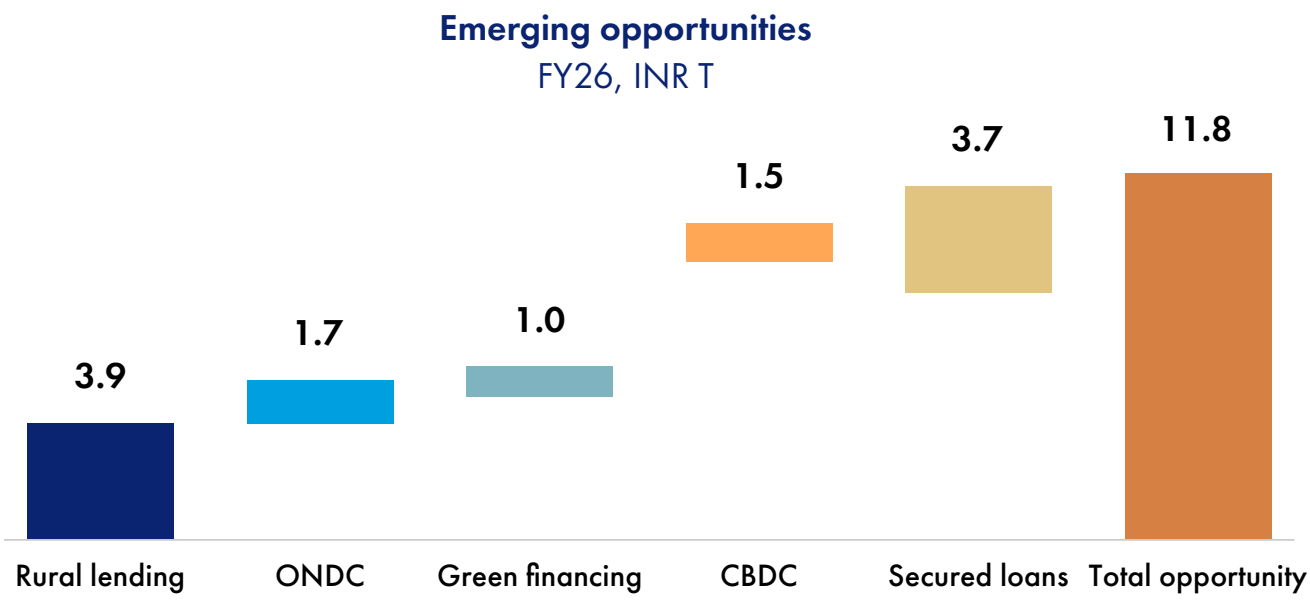
Figure 12: Emerging opportunities



- Rural lending aims to target the 60% of rural population which has been underserved and underbanked
- ONDC potentially offers a 1.2M seller base in the form of MSME merchant and an equally large buyer base to lend
- Green financing provides credit to the growing base of green consumers who are buying environment-friendly products
- CBDC as a new currency and cutting-edge technology is likely to revolutionize how payments and lending will be done
- Secured loans via end-to-end digital journeys will become possible as asset records get digitized and added to India stack

We believe that these five opportunities can be an INR 12 trillion AuM opportunity over the next three years:

Figure 13: Market of emerging opportunities (AuM) by FY26



Let us delve into the emerging opportunities that have the potential to revolutionize lending.

4.1 Rural lending

Mahatma Gandhi once said, "The soul of India lives in its villages". Even today, it is estimated that nearly three-quarters of our population reside in villages.

Despite accounting for nearly 70% of India's population, the contribution of rural India to the GDP is less than a third. One of the primary reasons for the underutilization of the massive potential of rural India is the lack of access to formal credit for its population. Credit is an important facilitator that enables the adoption of technology and is an effective lever of rural development, however, dependence on usurious informal sources still afflicts the rural poor.

Access to formal credit is limited due to lack of adequate financial data and collateral as well as lengthy application processes and extensive paperwork. Considering these factors, digital lending comes across as an attractive solution to provide access to credit to the underserved and underbanked rural population. Rising adoption of internet and smartphones have powered not just digital payments, but also several agritech businesses (businesses that develop and provide technology solutions for the agriculture industry) who are addressing the issues of discovering customers and assessing their creditworthiness using the enormous amount of transaction data they are generating.

Figure 14: Internet penetration and active UPI transacting users

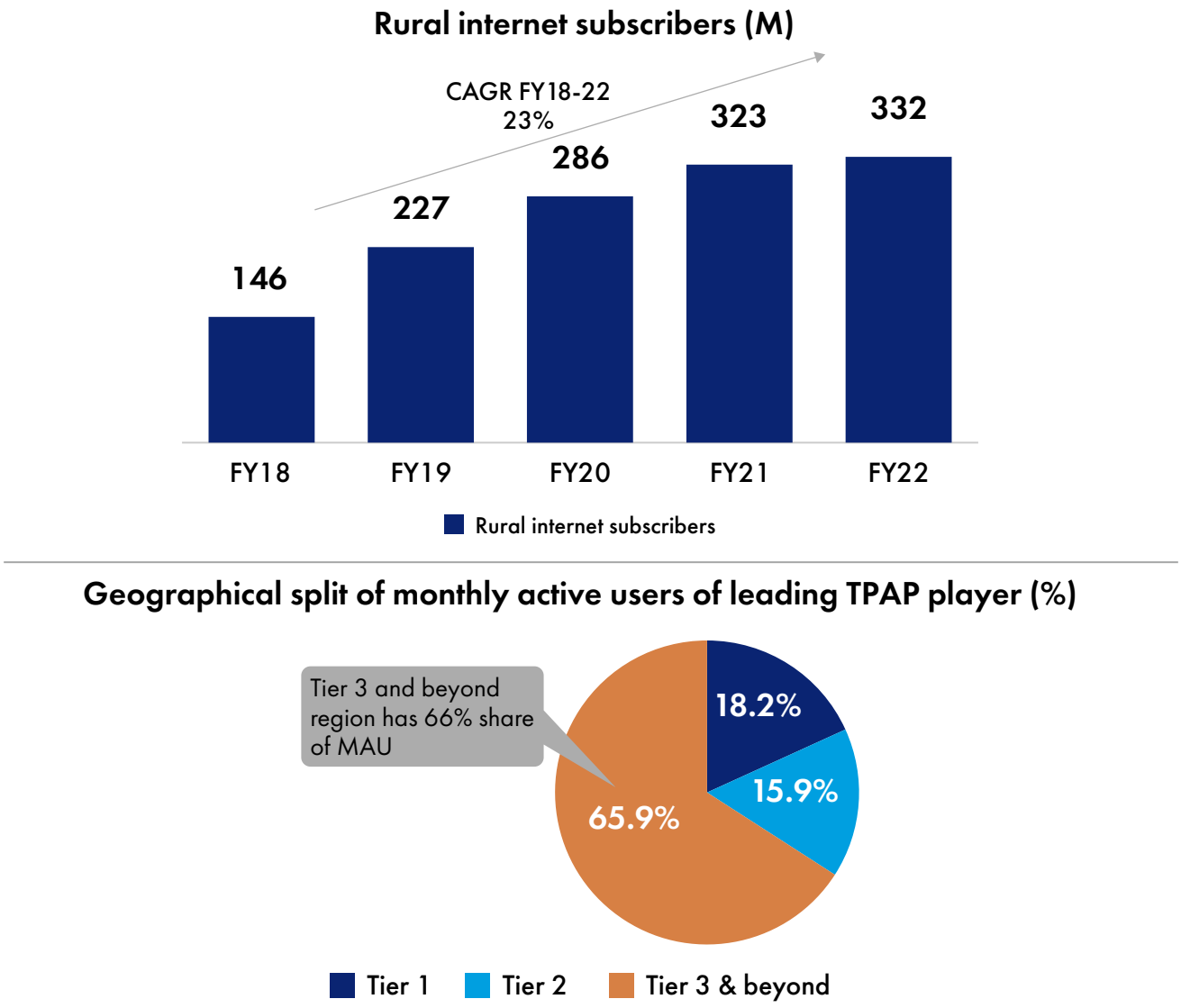


Figure 15: Agri-tech landscape in rural India

With the right resources and efforts by different Fintech companies and the Government, the rural population is becoming well-versed with digital modes of banking and lending. Fintechs are coming up with innovative technologies suited to the sensibilities and requirements of the rural population, e.g. voice-based payment solutions that do not require an internet connection.

Private players are also making efforts to unlock the potential of the rural lending segment. Amazon, for instance, infused INR 10B in its Indian digital payments arm in 2021 to scale up its presence across the subcontinent with rural India forecast to account for 63% of the market share by 2025.

Digitization of the KCC (Kisan Credit Card) lending developed by the Reserve Bank Innovation Hub (RBIH) is a landmark project, which would entail the end-to-end automation of various processes within banks along with integration of bank systems with the service providers to make the process more efficient and significantly reduce both TAT and costs for borrowers.

OTP-based profile updation to improve customer onboarding experience to target tier 3 & rural regions and creation of ML/AI models to assess borrower profiles not only on the basis of their credit score and track record, but also using other factors like inflows, outflows, crop produce, etc are some of the promising developments that can help Fintechs make a dent in this market.

Spice Money and Israel based Fintech player Tayra group have entered into a joint venture partnership for launching a lend tech platform based on a community lending m odel enabling rural borrowers to access creditt

Agriculture holds the key to a vibrant rural economy, and to the extent that access to formal credit can be provided to this sector, it has a multiplier effect on the rural economy. The agriculture ecosystem in India is plagued with multiple (well-known) challenges, such as lack of direct access to markets, influence of intermediaries/ middlemen, fragmentation of farmland, etc. Innovative business models of agri-techs can potentially provide pathways to address these issues, not least by creating organized access to markets and supporting sustainable livelihoods for farmers. As customers get discovered by agri-techs, and their creditworthiness proved by their transactions with agri-techs/ organized supply chain platforms, digital lenders can leverage the access and data provided by these platforms to deliver credit which finds its way for productive use. We are very optimistic that a new era for rural lending on the back of smart agri financing awaits us.

How big is the market?

Reporting a CAGR of 3.7% between FY18 and FY22, agricultural sector's performance has been impressive during the last few years.

More than 80% of the rural credit supply comes from formal/institutional sources, according to the National Bank for Agricultural and Rural Development (NABARD), agricultural credit in FY22 reached an all-time high of INR 17 trillion, having grown at a CAGR of 10.5% during the last five years (FY18 to FY22)

Rural population in FY22 is about 900 million while the rural lending penetration is close to 39%. The rural digital lending market is projected to be worth about INR 3.9 trillion in FY26, with rural population expected to rise to 910 million and rural lending penetration to rise to 45%.

Barriers to overcome

Despite all the efforts by the government, regulatory bodies, and private players a multitude of factors pose a challenge to digital lending and financial inclusion in rural parts of India.

- **Lack of credit history**: Heavy dependence on informal lending channels, creates a challenge for lenders to evaluate the creditworthiness of the borrowers. Thus, this creates a challenge while accessing funds from formal sources as the credit history never gets build.

- **Lack of credit score**: Lack of an acceptable credit score is another challenge faced by borrowers in rural segment

- **Ease of access to informal lending channels**: Faster disbursal of funds without documentation from informal channels have led to high reliance among poorer rural households. Formal channels which operate in the ambit of rules and regulations shuns away the borrowers due to its cumbersome processes & requirements.

- **Lack of trust**: A lack of trust and confidence in digital payments lead to the exploitation of consumers by usurious moneylender.

- **Geographical constraints**: Reaching the remotest region of India, is itself a large barrier to overcome. Thus, a lot more needs to be done in the rural segment of the country to that still lacks adequate access to formal ecosystems.

What are the prerequisites?

- **Growth of agritech**: Agritechs, who have established supply chains, can enable digital lenders to reach to the remote regions and provide with the data which can enhance the precision of evaluating credit worthiness. Thus, the growth of digital lenders is directly correlated with the speed and depth with which agritechs can penetrate the rural market.

- **Access to affordable devices**: Making sure that rural residents have access to affordable devices, such as smartphones and laptops, can help increase digital penetration and in turn digital lending

- **Safety**: A lending model that is simple, smart, and safe for its customers by simplifying finance with technology is what rural households look for when it comes to their credit requirements

- **Awareness and education**: There is also a need to educate rural farmers about digital lending process and its advantages. The Ministry of Electronics and Information Technology (MeitY) has announced plans to set up Common Service Centers (CSCs) as digital financial hubs to spread awareness among consumers regarding governmental policies and available digital finance options for rural citizens. Partnering with local organizations and community groups can help increase awareness of digital technologies and services in rural areas and encourage adoption.

- **Robust technology ecosystem**: Advanced modelling needs to be done to assess borrower's profile not only on basis of credit score and past lending history but also on other factors such as crop produce etc.

- **Other requirements**: Convenience, interoperability, and swiftness enabled by Fintech solutions is crucial to achieving mass adoption in rural digital lending space. Eliminating multiple layers of governance is also important to build a better delivery infrastructure in rural India

Policy support

The Hon. Finance Minister, Ms. Nirmala Sitharaman recently urged the Indian Banks Association to increase the presence of banking services in rural India, encouraging the banks to decide where they need to be physically present and where digital services can be extended.

A lack of infrastructure is one of the key challenges that the government has aimed to address through initiatives such as the PM's Digital India program and Bharat Net Project. In the same vein, the RBI has recently operationalized the Payment Investment Development Fund (PIDF) with an initial investment of INR 3,450 million aimed at adding 3 million digital payments touch points in tier-3 to tier-6 regions and in north-eastern states.

In addition to this, there is a need to state guidelines to access loan not only on basis of credit history but also other factors in rural parts of India. RBI also needs to come up with plan to develop and operationalize an integrated and standardized technological platform to facilitate credit to the rural section of society Furthermore, conducting risk assessments, investing in audit studies, and reducing the risk of agent misconduct are some areas that need to be considered while framing policies and regulations by the regulatory bodies.

In a Nutshell: Empowering rural communities

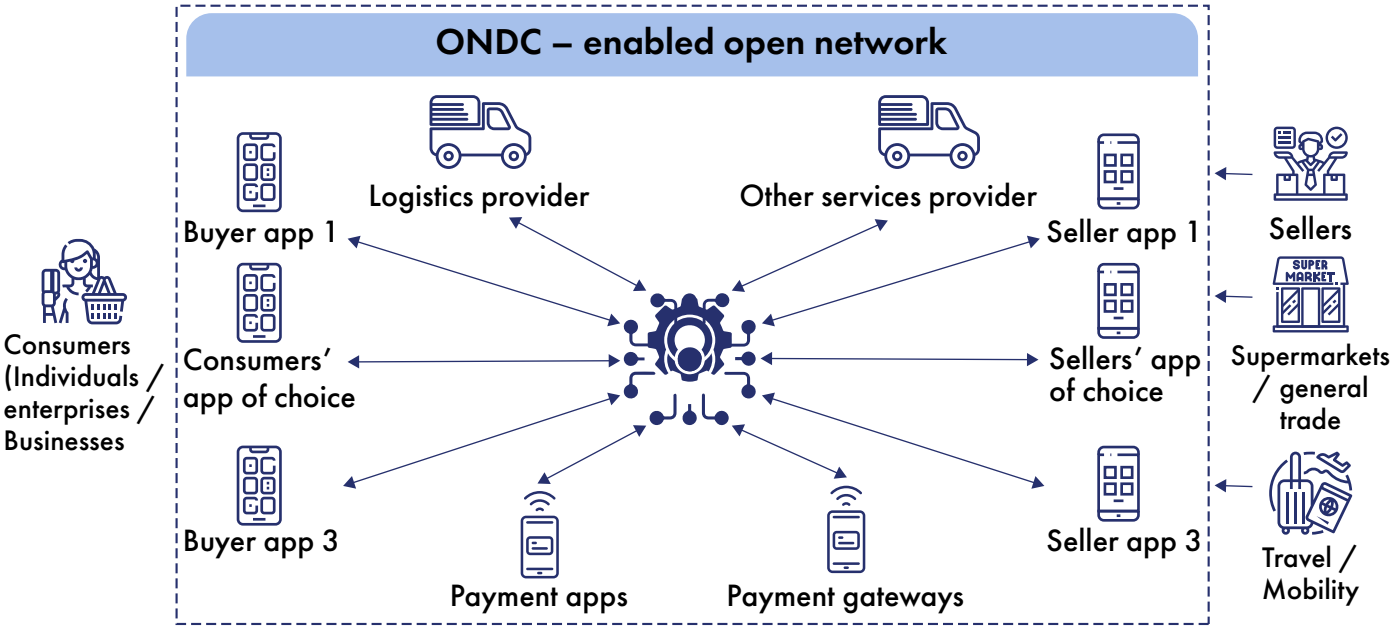
Recent years have witnessed growth of new microfinance approaches designed to serve rural households. Through the array of digital services in rural India, Fintech and banks are spreading digital empowerment. The 900 million rural population presents an INR 3.9 trillion market for digital lending. The most powerful use case for digital lenders is to crash the TAT, which is currently at approximately 12 days for loan sanction and 15 days for additional pre-disbursement verification. With digitization of the customer journey and one-step KYC process, there is a substantial upside in terms of crashing the end-to-end TAT to a few hours or days instead of weeks. Digital lenders have the platform to co-create a vibrant rural economy by unleashing the power of formal credit.

4.2 ONDC

While e-commerce marketplaces like Amazon and Flipkart have assumed humongous scale, there are still several swathes of white space - penetration of digital sales in India is still only ~7.8% compared to 36% and 46% in UK and China respectively.

Open Network for Digital Commerce (ONDC) is a transformational initiative launched to bring a larger cross-section of buyers and sellers on an open-architecture digital platform – we see this as the UPI moment of e-commerce. ONDC architecture is designed on the principles of interoperability and democratization and has the flexibility to allow all types of sellers ranging from the large modern retail formats to the humble kirana stores at the corner of your street to compete with a level playing field. In the same vein, the ONDC platform allows for buyers and logistics providers to participate and thrive.

Figure 16: ONDC Model



Digital lenders can tap this immense base of buyers and sellers. The use cases emerging from the ONDC platform are business loans and supply chain financing for sellers and embedded lending products in the form of buy-now-pay-later options or other financing options for buyers. The use cases are not just limited to this, Fintechs can also potentially plug in as a lending marketplace, which can allow both buyers and sellers to avail credit based on their transaction patterns. Moreover, AI & ML models can enable digital lenders to predict and underwrite the risk more precisely by combining transaction data with other data available in the broader India stacks.

ONDC, as a democratic and cost-effective platform, has the power to bring a diverse base of sellers and buyers together. This innovative way of sales can fuel the digital lending to reach to potential borrowers who were until now unserved and unbanked. The limitations that traditional lenders face can now be overcome effectively.

How big is the market?

It is estimated that within the next 5 years another 1.2 million sellers and 900 million buyers will be onboarded on the platform, with gross merchandise value (GMV) of INR 3.8 trillion. This will create a GTV opportunity of ~INR 7.7 trillion (including both buyer & seller side). Given the white spaces in merchant as well as consumer lending, we believe that the ONDC ecosystem could provide an opportunity of INR 1.65 trillion AuM by FY26.

Barriers to overcome

- **Building reliability and trust**: The platform currently has a limited number of buyers and sellers and is in the process of sorting out the teething issues encountered during the pilot launch. RBI is also conducting a public consultation to invite feedback on how to build trust.

- **Evolving rules and regulations**: ONDC framework is yet to come up with rules and regulations on data protection of users and grievance addressal for partners onboarded. This will be a critical stage to lay out the rules of the game, especially for digital lenders who will need information on transactions conducted on the platform to assess the creditworthiness of the borrower.

- **Information security**: As a large ecosystem, ONDC can also become a single point of failure, and will need to continue to work on building defenses against cyber-attacks.

What are the prerequisites?

- **Adoption**: Like in any other network, there needs to be widespread adoption not only from buyers and sellers but also from other partners like logistics, payments service providers, etc. to create a virtuous cycle and a flywheel for further growth.

- **API integrations**: There is a need for open and intuitive APIs to integrate with other apps/ platforms – no mean task given the scale and complexity of the ONDC framework.

- **Cyber-security**: Since the threat to the ecosystem is immense, there is a need to up the cyber-security to safeguard against theft and losses.

- **Technological advancements**: Given the large number of transactions projected to be consummated on the platform, advanced technological tools like AI, ML models, and big data analytics will be required to analyze and derive benefits for better underwriting and risk management.

Required regulatory & policy support

ONDC is still in the stage of framing its rules with regards to the protection of personal information and grievance resolution for its stakeholders – buyers, sellers, and service providers, be it financial service providers or logistic partners. As the platform has already taken off in various cities and onboarded close to a million buyers, the need

Currently, a seller must go through multiple rounds of KYC to onboard on different platforms. Norms for standardized KYC can be laid down which allow KYC completed on one platform (be it ONDC) to be accepted universally across financial & non-financial institutions.

In a Nutshell: ONDC is a game-changer for lending

The growth of the digital lending market from ONDC seems imminent, with a large number of buyers and sellers joining the platform. It is expected that GMV will touch INR 3.8 trillion in next 5 years, with buyer base expected to increase to 900 million and seller base to 1.2 million.

As the ONDC ecosystems brings a large number of sellers and buyers on an interoperable platform, it really has the opportunity to become "the hero app for kirana stores" especially in smaller towns where local businesses have neither the funds nor the required supply chain support to scale their business. Watch this space as the UPI of commerce takes shape!

4.3 Green financing

As nations deliberate on resource allocations at the United Nations Climate Change Conference – COP27 in Egypt, the focus is now shifting rather quickly to financing of green projects or assets. The Covid pandemic and the Ukraine war which have resulted in the disruption of supply chains globally as well as an energy crisis especially in Europe, have brought environmental issues right up to the centerstage.

Even in India, there is an urgent need to increase the flow of finance to green energy projects in the light of India's environmental targets. According to Climate Policy Initiative, India needs INR 160 trillion for Nationally Determined Contributors (NDCs are 5-year targets to reach net zero eventually) by 2030 and INR 720 trillion to achieve net zero emissions by 2070, under the Paris agreement.

In 2021, India put forward an ambitious plan for climate change and announced "Panchamrit targets". These plans include meeting 50% of the energy requirements through renewable sources of energy and adding 500GW of non-fossil-fuel-based energy capacity. Since the targets are ambitious, higher mobility of green funds needs to happen at a very fast pace. As per the estimates, to meet the NDCs & Panchamrit targets, India needs to increase its green finance to INR 11 trillion annually by 2030.

Figure 17: Funding in green finance and Government initiatives have increased the focus on clean energy and clean transportation

Players	Sources
Private US$ 22.13B 57% of total green finance	Commercial FIs (US$ 12.50B)
	Corporations (US$ 2.61B)
	Foreign direct investments (US$ 1.13B)
	Residential, commercial and institutional (US$ 5.64B)
Public US$ 16.50B 43% of total green finance	Bilateral and multilateral FDIs (US$ 3.4B)
	Public sector undertakings (US$ 6.15B)
	Union and state government budget (US$ 7.18B)

+

Government initiatives
PANCHAMRIT
Reach non-fossil energy capacity to 500GW by 2030
Full 50% energy requirements via RE by 2030
Reduce 1 billion carbon emission by 2030
Reduce carbon intensity > 45% by 2030
Achieve the net target of net-zero by 2070

=

Focus sectors
• Energy efficiency • Clean Energy (Solar energy) • Clean Transportation (EVs)

Several digital businesses are getting created to bring innovative and 'green' products to the market. There businesses are natural allies for Fintechs to pitch in with lending products. Together with these green innovators, digital lenders can potentially build an ecosystem to facilitate green financing. One use case can be to use big data and AI/ ML models to calculate carbon footprints from financial transaction data, which will enable individuals to evaluate the environmental impact of their purchase. This information can then be clubbed with credit score to get the true and complete picture of the borrower's sustainable practices. Such practices will nudge users towards more sustainable consumption and promote investment in green products.

SolarCoin foundation issues solar coins, a crypto-currency, and rewards individuals investing in producing solar energy. These coins can then be exchanged with currencies or redeemed at businesses that accepts them

How big is the market?

Clean energy and clean transportation are the two major themes for the green financing. With electric vehicles and residential rooftop solar panels being the major area of interest.

EV financing is expected to touch INR 300 billion in FY26, from INR 170 billion in FY22. In case of residential rooftop solar panels, the disbursements for FY26 are expected to be INR 2.2 trillion and digital lending market to be INR 874 billion. Given that both of these are sunrise industries, there is a great opportunity to build a digitally native lending ecosystem around this. In our view, the AuM potential (note that EV as well as solar rooftop financing is likely to have a tenor of 3-5 years) from green financing is to the tune of INR 1 trillion by FY26.

Barriers to overcome

The market presents a tremendous opportunity both in the clean energy and transport sectors, but there are still significant obstacles to be overcome before this can be realized.

- **Lack of suitable terms**: Although lenders are offering discounts on green loans (EV loans are offered at 20 to 50 bps lower than other auto loans), the high capex involved makes the segment unattractive for buyers.

- **Information asymmetry**: Though RBI has pushed this as a priority sector for lending the repayment period and amounts remain unsuitable for the borrower. One of the main reasons could be the asymmetry in the information available. Traditional lending methods fail to consider the alternative method of credit scoring.

- **Technology risks**: Given that green products are still in the nascent stage, the risk perception of financing them is higher than current alternatives. While this is a chicken and egg issue, it is certainly fair to assume that comfort of lenders will increase only as they see the technology mature.

What are the prerequisites?

- **Ecosystem development**: In order to meet the targets, set by India, support from every stakeholder – Government, private & public institutions and Fintech, is required, as the financing needs are substantial. An ecosystem needs to be developed, which will foster the development of market infrastructure, in order to tap the underpenetrated market opportunities.

- **Leveraging partnership**: Banks can leverage the digital nature of Fintechs to reach a wider audience, while still keeping their costs low. Usage of AI and ML models to incorporate green parameters into credit scoring methods can help both borrowers and lenders. A retail-driven lending system can be developed, which incorporates the carbon credit and assesses the borrower's capability on the basis of energy generated to pay back.

- **Mitigating risks of nascent technology**: In order to drive usage of green technology and financing for the same, it may be worthwhile for the Government to set up a fund to support losses incurred due to technology obsolescence or setbacks. Further, creating awareness about green products and green financing amongst consumers will also help gain scale.

Policy support

Comprehensive support is required from the Government to tackle the issue of green literacy and building market infrastructure, including synchronization between investment and environmental policies. Digital green lending frameworks need to be developed which promotes sustainable development led innovation in the sector.

Any proposed policy action should explore the possibility of encouraging financing of such innovative technologies so that the promise of sustainable investment and financing becomes real.

In a Nutshell: Green financing opens new doors to lending

Meeting the "Panchamrit" targets set by India would require an aggressive nature of lending to happen in the market. Lending in the range of INR 160 trillion by 2030 to just meet the NDCs is itself a huge space. Just two use cases (EV financing and residential rooftop financing) present an INR 1 trillion opportunity in the next 4 years, much of which can be catered to by digital lending models. There is a concerted attempt on part of the Government and regulators to pushing financial institutions to scale up green/ sustainable lending via collaboration among Fintechs, banks and NBFCs.

Although policies and regulatory frameworks are still in a very early stage and require focus and persistent efforts to gain traction, we believe that this is a very relevant and interesting opportunity to build digital lending models right from the inception of these products/ asset classes.

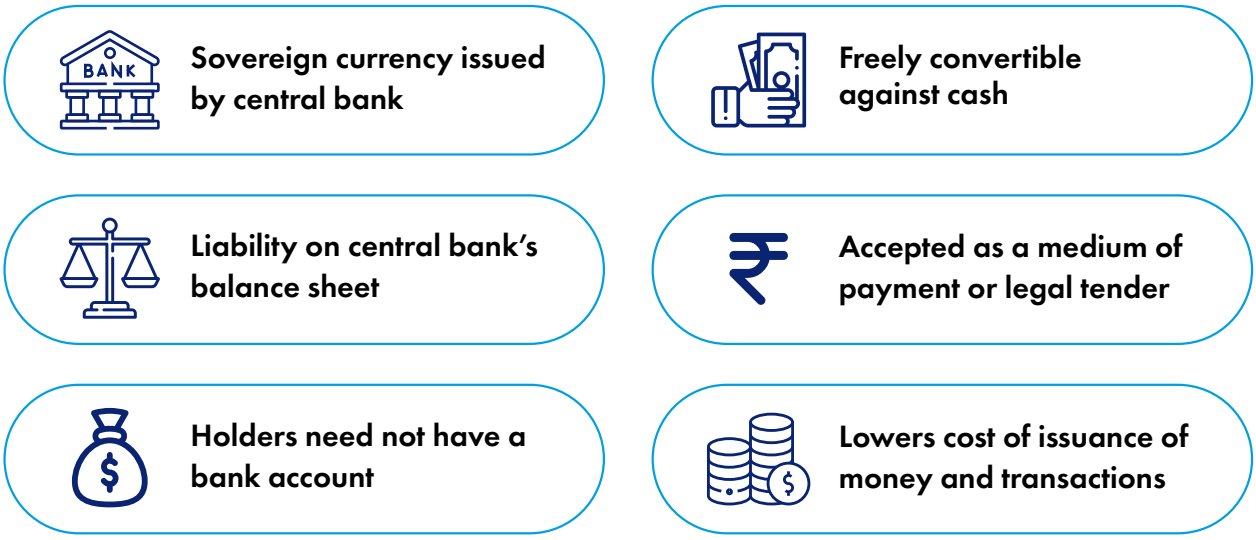
4.4 CBDC

Simply put, the central bank digital currency (CBDC) is a digital form of the current fiat currency, with the exception that records are maintained using blockchain or similar distributed ledger technology (DLT). India has been one of the pioneers in introducing a CBDC, thanks to swift and decisive action from RBI. Here is a quick recap of the progress on e-Rupee (India's CBDC):

- **Oct 2022**: RBI took a step towards realization and released the concept note
- **Nov 2022**: Introduced the first pilot for the digital rupee in wholesale sector
- **Dec 2022**: Announced the launch of the first pilot for retail digital rupee on December 1, 2022

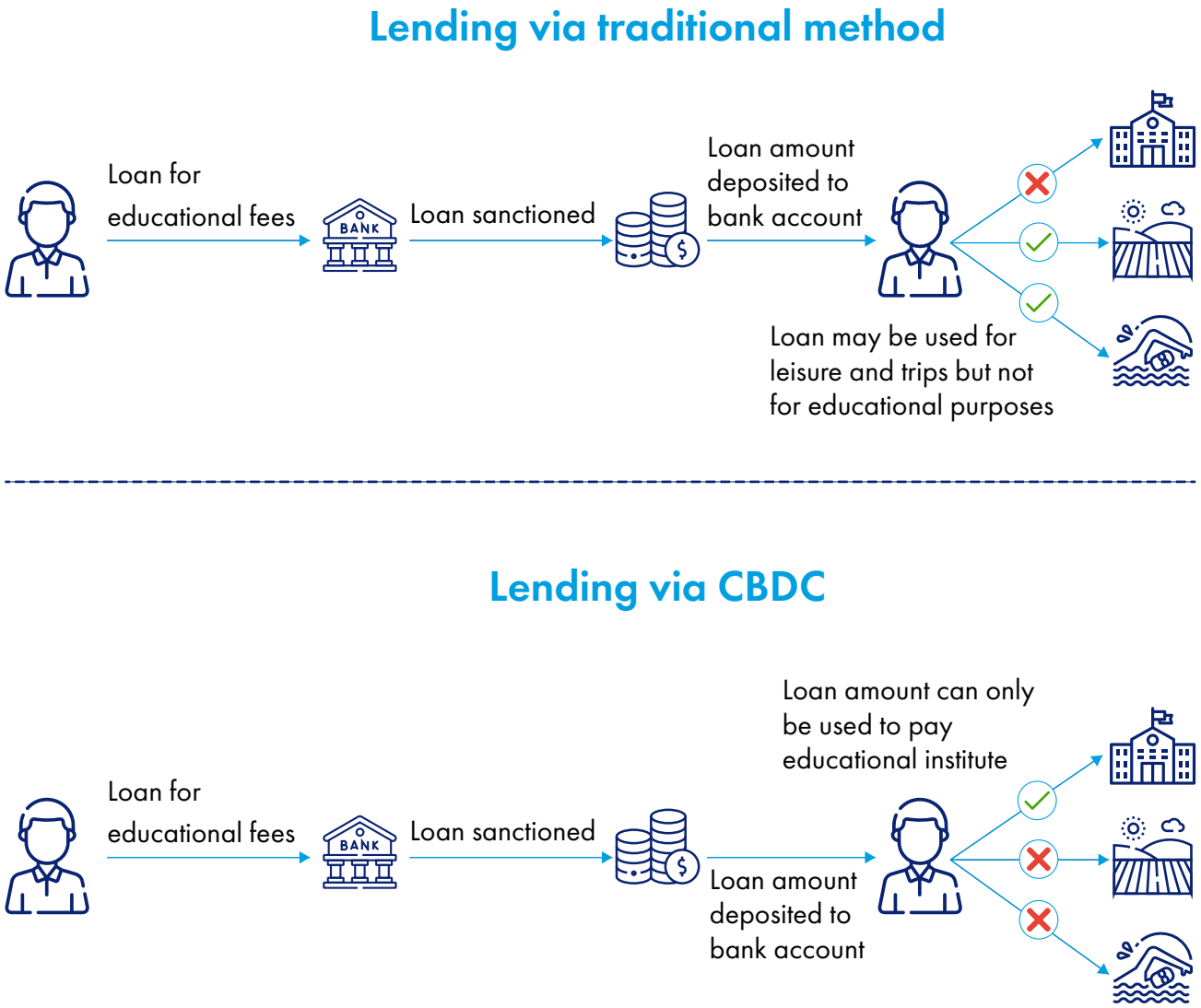
Key drivers for launching CBDC in India include reduction in operational costs involved in physical cash management, fostering financial inclusion, bringing efficiency, and innovation in the payments and the settlement system, and providing the public with uses that any private virtual currencies can provide. According to the MD of the International Monetary Fund (IMF), Ms Kristalina Georgieva, "If CBDCs are designed prudently; they can potentially offer more resilience, more safety, greater availability, and lower costs than private forms of digital money"

Figure 18: Features of CBDC



The killer app in the CBDC framework from the perspective of digital lending is undoubtedly the capability to create a **programmable currency** which can be programmed to be used for specific purposes. **Every lender dreams of monitoring end use of loans – finally here is a technology that makes it possible**. For instance: education loans given in the form of CBDC that can be programmed such that it can be used only to pay to fees to educational institutions. Another example is of working capital finance, wherein disbursement in a programmable currency can ensure that the loan is used only for buying raw materials, or other relevant expenses needed for business operations.

Figure 19: Lending via traditional methods vs via CBDC



Instant lending to micro, small and medium enterprises (MSMEs) in India can also be possible with the help of CBDC. Traceability of CBDC's can also help MSMEs demonstrate their creditworthiness by showcasing 'good behaviour' in terms of ensuring promised end use of loan proceeds.

How big is the market?

In theory, all digital transactions including disbursement of loans can be processed in CBDC once a full-fledged launch of CBDC is enforced by the RBI.

The specific use cases can be working capital financing and education loans since traceability solves an important issue in such loans. The education loan AuM is expected to touch INR 970 billion by FY26, assuming it grows at the historical CAGR of 2% (FY18-22). Other use cases include supply chain financing, loan against securities & export finance, with AuM for each of these expected to be INR 4.9 trillion, INR 600 billion and INR 1 trillion respectively, by FY26. With the use cases of programmability and traceability, we believe that the AuM potential from lending in e-Rupee could be upto INR 1.5 trillion by FY26.

Barriers to overcome

- **Limited digital penetration**: Approximately 825 million Indians (nearly 60% of the 1.4 billion population) currently have internet access. This means that over 40% of Indians will not be able to use CBDCs due to a lack of internet connectivity. Offline capabilities thus need to be incorporated to ensure the widespread use of CBDC, potentially on the lines of UPI for feature phones.

- **Cyber-attacks**: In addition to this, cyber-attacks pose similar risks to the CBDC ecosystems as it does to the current payment systems. Cyber-security is currently one of the most important operational challenges for central bank systems and the financial industry generally. Cybersecurity considerations need to be taken care of at all levels. For example, while the token creation process should ensure the highest levels of cryptography to ensure security at the item level, the transaction of tokens also needs to be secured to ensure a trusted environment.

- **Fraud detection**: The potential effect of fraud could be more significant than in physical or phygital systems due the 'single point of failure' concept. Robust mitigation methods of fraud detection would therefore be important for CBDC issuance and ensure that CBDC gains trust of citizens despite being a new form of currency.

What are the prerequisites?

- **Awareness and incentivization**: Education of consumers and inducement of trial are crucial to kick-start e-Rupee's journey. Creating a seamless user experience akin to UPI is a prerequisite to generate trials and eventually regular usage. If the thesis that programmable currencies pave the way for better monitoring of end use, then it would be worthwhile to create incentives for digital lenders to make the required investments in building the technology and user journeys. This could be one of the asks from the upcoming Union Budget as well.

- **Features**: The use of the offline feature in CBDC would also be beneficial in remote locations and offer availability and resilience benefits when electrical power or mobile network is not available.

- **Stakeholder coordination**: Fintechs would need to collaborate with banks or alternatively, be provided with licences from RBI to facilitate CBDC transactions.

- **Effective grievance redressal system**: Robust processes to ensure speedy issue resolution

Policy support

New rules and regulations are required for issuance and usage of CBDC's keeping in mind the requirements of customers, market participants as well as intermediaries. There will be a need for strong cooperation between different government agencies and regulatory bodies to ensure that the appropriate incentives as well as risk mitigants are built in, thereby increasing the security and safety of transactions.

It is also important to draw out the principles as well as procedures for AML/CFT concerns, this is especially relevant in current times given that the CBDC is ultimately a tokenized currency. Recent events in the crypto world warrant that special attention be paid to this issue, and the right balance between anonymity and traceability is maintained.

In a Nutshell: CBDC the right tool for lending

CBDC will complement current forms of money and create addition payment avenues for users. With its affordability, accessibility, convenience, efficiency, and security, CBDC will further bolster India's digital economy.

In addition to the substantial lending opportunity (INR 1.5 trillion AuM), there are several other cost benefits possible that can eventually be shared with borrowers. Savings in operational expenses and loan losses could be substantial and would eventually be shared with consumers in terms of low interest rates or processing fees.

4.5 Secured Loans

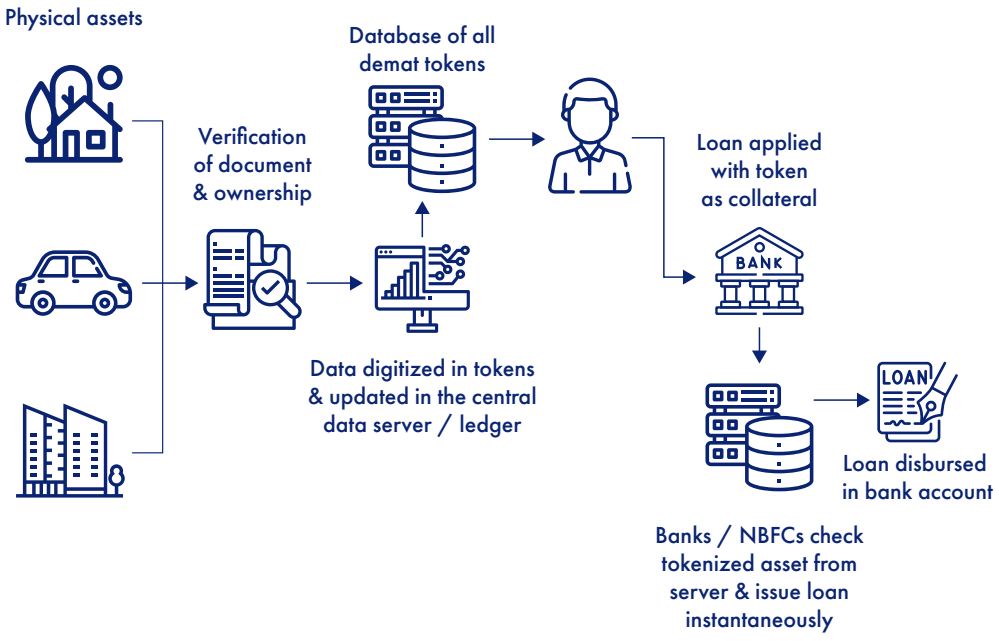
Out of retail lending market in India which had an AuM of INR 85.2 trillion with 230 M loans disbursed in FY22, home loans had an AuM of INR 25.5 trillion, AuM of two-wheeler loans was INR 0.8 trillion and auto loans (including commercial vehicle loans) had an AuM of INR 7 trillion. Secured loans are document intensive and require a significant time and effort for due diligence, which reflects in the high TATs for loan sanction and disbursement.

Digitization of ownership records of assets like property, vehicles, and financial assets and leveraging the digitized records for underwriting would be a vital breakthrough in the lending journeys for secured loans. If title records could be dematerialized and then transferred and pledged very much like securities, imagine the transformation it could bring about to both borrower and lenders. The daunting task of repeated visits to the bank to submit various documents into a "thick-file" (no pun intended!) would simply disappear! Digitized asset-based secured loans would be a great opportunity for digital lenders as well as platforms which could help lenders assess and underwrite risk as well as enhance the experience for borrowers.

Residential mortgages which currently appear to have missed the digital transformation wave, alone account for 30% of retail loans, and would be a very powerful category for digital lenders to disrupt.

If, in addition to underwriting the customer risk, if a large part of the property risk could be underwritten digitally, it would be no mean achievement. The entire application process - onboarding of the borrower, documentation, verification, disbursement of the loan – everything in the value chain could then be done seamlessly with minimal need for physical presence – clearly a win-win situation for both lenders and borrowers. This also has the potential to penetrate rural lending, where availability of collateral can dramatically increase flow of credit from formal sources and allow borrowers to stay away from the unfavorable terms of informal sources of funding. There could be other ancillary opportunities for financial infrastructure providers, for instance acting as a 'depository participant' for property records, offering text mining services for scrutiny of documents, etc.

Figure 20: Process of asset digitization and loan disbursal



How big is the market?

Secured lending has multiple use cases in various asset classes be it real estate, consumer durables, or auto loans. By FY 2026, the disbursements for new home constructed in both urban & rural is projected to touch INR 13 trillion from INR 7 trillion in FY22. This creates an AuM potential of INR 45 trillion. Even if 4-5 states get their land records digitized in urban areas and other states make a beginning, lenders can start to build digital journeys around the home loan process. This could translate to an AuM potential of INR 3.7 trillion by FY26, assuming that less than 10% of home loan journeys are digitized. Even if we ignore other asset classes for now, this is still a substantial opportunity.

Barriers to overcome

Although secured lending presents a great opportunity, there are still some vexing issues to be addressed to reap the potential benefits:

- **Asset digitization**: The basis of secured lending is on the digitization of the title records, which is a huge task needing surveying, mapping, and digitization of 800 million land parcels across the nation. Some states have started working on this, and as this digitization gets completed, it creates the infrastructure on which digital lenders can build their product and underwriting journeys.

- **Legal framework for contract enforcement**: Even after the land/ property records are digitized, the legal framework needs to unequivocally enable transfer and mortgage of property that is dematerialized, similar to the framework for shares. Thus, the lender can either mark their charge on the property electronically, and the same needs to be protected under law.

- **Building trust in digital title**: Homeowners need to repose faith in the sanctity of their digital title such that they are encouraged to dematerialize their property holdings. While this is a common practice in securities market, the stakes involved for individuals is significantly higher when it comes to their homes, and hence there is a need to build credibility in the overall framework.

What are the prerequisites?

To overcome these challenges, several stakeholders need to come and join the forces to make it happen. Digitization of assets needs to be done to create bankable assets. Collaboration with tech players and government support is required to map and store these assets. The enablers do not stop here, the following are the four points that carve out the necessary steps to be taken:

- **Amendment of the legal framework**: The extant laws and regulations need to be updated to recognize digital land records and safeguard the interests of the homeowners as well as lenders in the property.

- **Data management**: Investments in digitization technology (e.g. OCR, AI/ML) are required to enable digital lenders to retrieve and analyse documents of title that are stored digitally.

- **Fraud detection**: Usage of artificial intelligence & machine learning models to establish systems to detect and prevent fraud in the loan application process. Text mining and data scrapping are some of the examples which can help detect forgery or fraud happening during the application process

- **Automated decision-making**: In addition to maintaining and storing big data, Fintechs should have the capability to analyze and draw out insights that present a true picture of the borrower in the eyes of the lender to better underwrite the risk

Policy support

Concerted action from Central as well as various State Governments is needed to design and implement a time-bound program for digitization of property records. Further, there is a need for a review and updation of the legal framework to enable digital mortgages (the Information Act, 2000 does not apply to immovable assets or property currently).

In a Nutshell: Secured lending 2.0

Secured lending 2.0 has immense potential to transform the lending market especially for property-backed loans, provided there is adequate and accurate digitization of ownership records and an enabling legal framework to protect the interests of homeowners as well as lenders. Residential home loans alone present an opportunity of ~INR 3.7 trillion for digital lenders and several benefits in terms of cost savings and reduced risks. Digitization of home (or land) records can save homeowners close to INR 600 million annually, assuming saving in documentation costs per file of INR 1,500. Savings in processing costs for lenders by creating digital mortgage/ charge on assets could save INR 50 billion per annum by way of reduced operational expenses, a lot of which could be passed on to borrowers as lower fees. Digital ownership of assets can then pave the way for asset tokenization, which can create new use cases such as fractional ownership or leverage. The opportunity at hand certainly seems worth our while to expend efforts to set up the stage for digitization of land records.

IMPERATIVES FOR DIGITAL LENDERS

05 Imperatives for digital lenders

In this section, we try and describe the key imperatives for digital lenders should they choose to explore and participate in the emerging opportunities described above:

Rural lending

- **Partnerships**: Agri-tech startups be it e-distributors like DeHaat or precision agriculture management like Cropin have penetrated the rural market to quite an extent. These businesses can be ideal partners for digital lenders to collaborate with and offer customized and convenient lending products to rural borrowers.

- **Intuitive journeys, products, and user interfaces**: Given that several potential customers would be first timers to formal credit, it is critical that lenders design intuitive and simple journeys on their apps. Product design will need to be thought anew, for instance, can interest rate be expressed in absolute amounts per INR 10,000 instead of in percentage terms? How would lenders deliver their products in vernacular languages? How should the customer service be set up – is voice a better medium than an app? These and several other very interesting challenges will need to be addressed in the course of building a large lending franchise.

- **New underwriting models**: As digital lenders come face-to-face with new borrower segments with different (and more volatile/ variable) income streams, understanding of risk and hence product design will need to evolve considerably from the current products that digital lenders are used to.

ONDC

- **New sourcing models**: As the Indian MSME moves to digital commerce platforms, lenders will need to follow suit, and adapt to sourcing models that need partnerships with buyer and seller apps on ONDC to source loans. This will also need sharper rules to determine eligibility and eventual decisions and create an algorithm for allowing the buyer and seller apps to offer pre-underwritten offers to their users.

- **Enhanced use of analytics**: Digital lenders will need advanced tools like AI/ML models, big data analytics to leverage the massive amount of data that will be generated on the platform to design tailored products with acceptable risk at competitive pricing.

Green financing

- **Green products**: Lending products need to be designed which provide competitive interest rates and terms to borrowers. There is potentially a slew of products that digital lenders could design as part of their sustainable financing strategy – here are some examples:

- Green credit card with benefits tied to environment-friendly purchases on the card – these could be provided with back-to-back deals/ programs with providers of such products

- Green home loan - for consumers installing green appliances or switching to houses with green power can be provided with better terms (which could involve pricing of the energy savings in future)

- Green car loans - Where the lending rates can be adjusted according to the fuel efficiency & CO2 emissions

- **Assessing the (commercial) value of benefits** from usage of green products that would accrue in future, which need upfront financing to make the purchase of such products affordable will be a key driver.

CBDC

- **Designing use cases**: As described above, the power of loans in e-Rupee arises from the feature of programmability. Digital lenders will need to think through use cases where this feature will enable them to monitor end use, to create a differentiated product not just in terms of features, but also pricing and other terms and conditions

- **Partnerships**: Digital lenders will need to partner with banks and any other entities approved to issue, store, and manage the e-Rupee, somewhat on the lines of wallets where the funds remained with the banking system

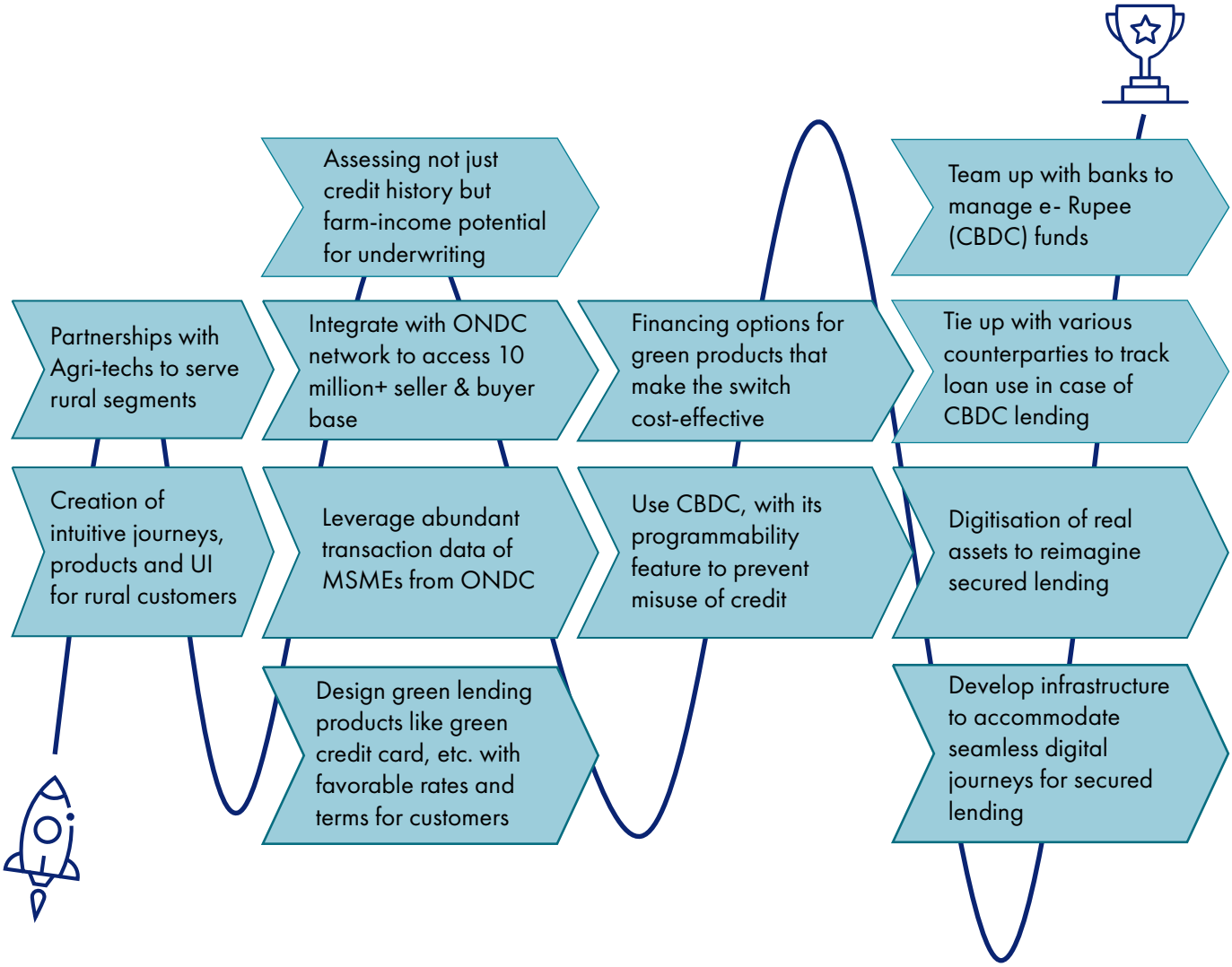
- **Point of sale integrations**: In order to track end-use, digital lenders and their banking partners will have to tie up with various counterparties to ensure that only approved end use of the loan proceeds can be processed.

Secured lending

- **Digitization of assets**: Digital lenders can shift their focus towards secured lending, by creating a complete digital journey. They can form partnerships with tech-startups or invest in forming data repository of digitized assets.

- **Seamless digital journeys**: With the advent of digitization/tokenization of assets, Digital lenders will need to stitch together the entire journey right from customer onboarding, documentation & verification of asset, underwriting and loan disbursal, all done digitally. This will need extensive customer immersion sessions to understand how the current journeys will need to change, and how the digital journeys for secured lending will have to be different from those for unsecured loans, which are the current forte of most digital lenders.

Figure 21: 12 point action-plan to capture INR 12 trillion worth of digital lending opportunities



FACTORS CONDUCIVE FOR CAPITALIZING ON THE IDENTIFIED OPPORTUNITIES

06 Factors conducive for capitalizing on the identified opportunities

In order to capitalize on the opportunities identified above, not only will digital lenders have to reinvent their operating and business models, but a host of changes will be required in the external environment for these opportunities to translate into reality. We summarize some of these interventions below (these are over and above the policy support envisaged hitherto in the report):

- **Access to data stacks**: In order to unleash the full power of digital, lenders will need access to relevant data, most of which will lie in external ecosystems. Needless to say, this is subject to consent and privacy frameworks. In our view, focused action is needed to APIfy several repositories of data to enable lenders and other financial services providers to access and incorporate data in their business decisions and processes, for instance obtaining data on corporates from MCA to analyze financial and other information submitted by companies, data on registered charges, etc. One option would be to add this to the roadmap for Account Aggregators.

- **Universal KYC**: As platforms become interoperable, borrowers will find offers for loans from various lenders curated by the platforms they are part of, a case in point being ONDC. As borrowers try to find the best loan for them, they could end up engaging with multiple lenders, and would be required to go through a KYC verification in each instance. To save them this inconvenience, if a framework could be created wherein their platforms could be permitted to carry out KYC as per a universally agreed definition, which could be made available for subsequent usage in the CKYC or Digilocker framework, it could considerably simplify their interactions with lenders.

- **Ease in data extraction**: The current consent frameworks require customers to provide consent every time they commence a lending journey, following which lenders can fetch information from relevant sources, leading to higher cost as well as complexity in the process. If data once fetched could be saved in a Digilocker or equivalent facility, it would enable re-use of information, depending on the comfort of the lender.

- **Creation of digitization fund for specific use cases**: As digital lenders seek newer opportunities, they will need to build new capabilities, often working with external stakeholders. This is likely to entail significant expenditure in the initial years for building the product and underwriting journeys, customer education, etc. The benefits of these initiatives would accrue to the industry over a period of time. This is akin to the conundrum faced for social goods (e.g., digital lending), where the innovators do not have adequate incentive to make investments since their economic returns may not be commensurate with the investment outlay. However, there is no denying the deep-rooted positive externalities of digitalization. In our view, there is a case for designing an incentivization model either by creating a fund for the initial experimentation and outlay or bringing in active Government support to soften the initial impact of the investment outlay needed. It might be pertinent to deliberate on this issue in industry forums and present a case to the Government.

- **Partnership with banks**: Lack of access to funds at a reasonable cost often restricts digital lenders from providing desirable interest rates to the borrowers. Partnering with banks will open access to resources which can lower the cost of funds for end consumers. Establishing a regulated formal network with financial institutions can pave the way for smooth growth of digital lenders. Digital lenders can also in turn offer advanced technological tools for underwriting assessment and present with the access to customers, which are often unserved due to geographical constraints.

QUESTIONS TO PONDER

07 Questions to ponder

In the above sections, we have attempted to present our take on 3 of the 6 W's – what are the emerging opportunities, why do we believe that they will add value and where could the impact be felt. The other three Ws are still somewhat unanswered:

- **When** will all of this happen? It is quite difficult to foretell when the stars will align for each of the five opportunities, or when we could reach an inflection point after which these become mainstream. We may have overestimated the short-term impact of the opportunities, but we are quietly confident that if we were to look back from the vantage point of the 2030's each of these opportunities would have become 'business as usual'.

- **How** will the operating models for successful players? While it is clear that Fintechs and digital lenders will have a critical role to play, it is plausible that the operating models may get redrawn as we roll forward, with pieces of the puzzle re-organizing themselves as in a kaleidoscope?

- And finally, **who** will the winners be? Will they be the innovators, or will the incumbents have a place at the table? The likely hypothesis, of course is that it will have to be a collaboration, with respective capabilities drawing the boundaries of each player's operating model. But the specifics are indeed difficult to predict.

- And if one might add a fourth question, what could be the risks to realizing this potential – there could be several, starting with macroeconomic factors to cyber-risk and or the time taken to set up a suitable legal-regulatory framework.

Notwithstanding the unknowns, digital lending is an idea whose time has come. In fact, the term 'digital lending' is almost a tautology – it is increasingly difficult to imagine a lending without a digital fabric. To end with a few lines from Shri Rabindranath Tagore's immortal poem:

"Where the clear stream of reason
has not lost its way into the
dreary desert sand of dead habit;
Where the mind is led forward
by thee into ever widening
thought and action
Into that heaven of freedom,
my father,
let my country awake."

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