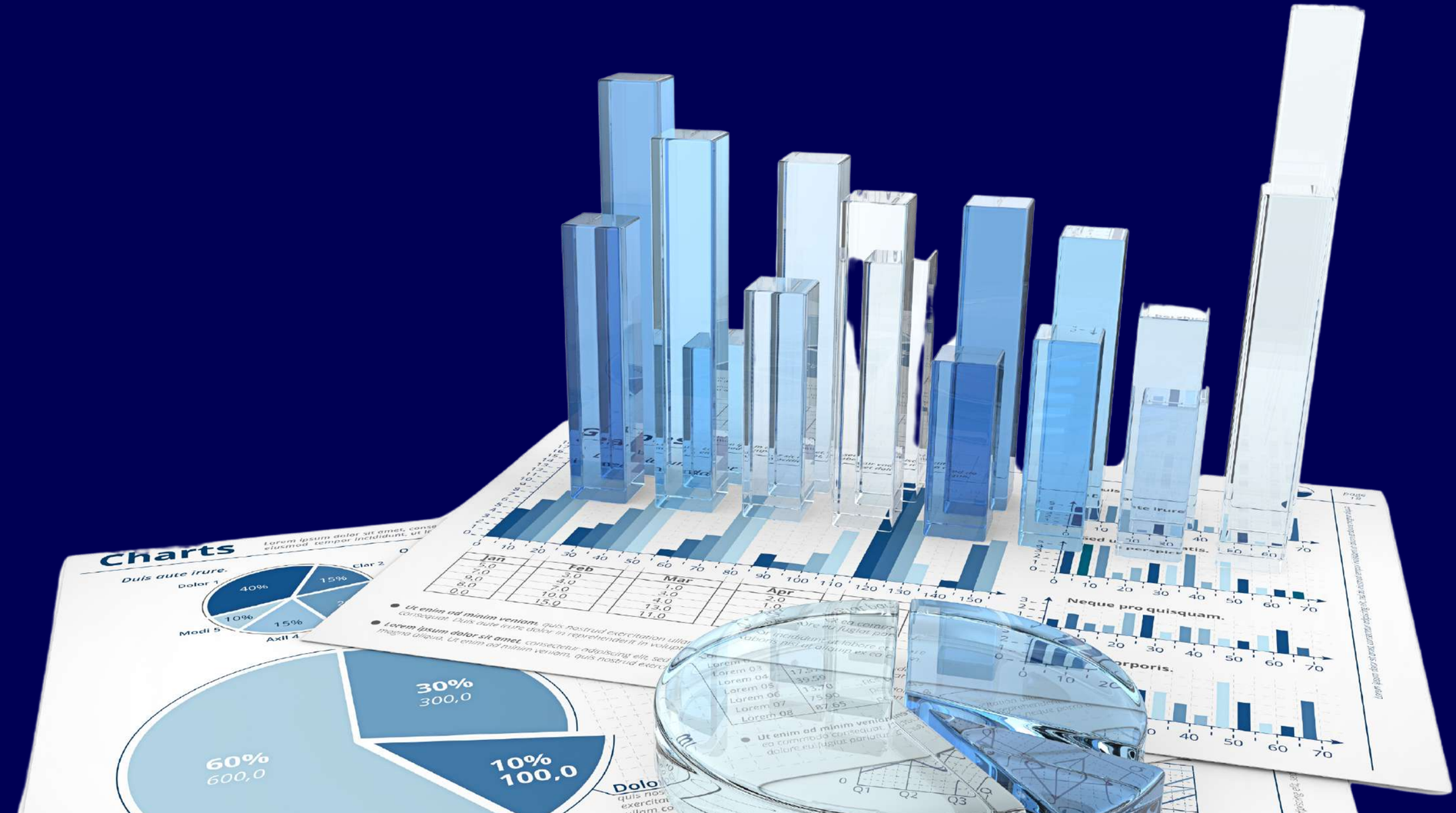
Eximius Ventures

CODE TO CREDIT

A THESIS ON DIGITAL LENDING IN INDIA



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ABOUT US

Eximius Ventures is a dedicated **pre-seed fund** offering smart capital with deep knowledge. As a **sector-differentiated** fund, we invest up to $500k in the pre-product/early traction stage, employing a **thesis-driven approach** across **FinTech, SaaS, Online Media & Gaming, and HeallthTech.**

We strive to support exceptional operators in building groundbreaking solutions for India. A substantial portion of our fund is reserved for follow-on rounds, showcasing our long-term support. Recognising the need for agility in the dynamic startup ecosystem, we've established an efficient and transparent decision-making process, ensuring founders receive capital without unnecessary delays.

Beyond capital infusion, our Eximius Edge Platform extends comprehensive support to founders.

- Strategy
- Network
- Hiring and GTM
- Investment

We aim to identify and back exceptional founders leveraging the strong demographic dividend of India to build from India to the world, helping them with a unique value-add.

Our Value-adds

- Empathy & Personal Chemistry
- Speed of Decision and Execution
- Sector-specific Knowledge and Expertise
- Functional Support for the Business

Our Portfolio

FINTECH

Jar, Finarkein Analytics, skydo, vegapay, ASPIRE, BIMAKAVACH, fleek, fego, iTRIBE

HEALTHTECH

eka.care

ONLINE MEDIA & GAMING

Oyela, SVG, SHURU, HOOD

FRONTIER TECH

Brance, Omnivio, blockfenders, alltius

Strong Brand Presence, But With Value-add

70,000+
LinkedIn Followers

200+
Hours of content

4 Mn+
Likes and Impressions

LENDING PORTFOLIO

Finarkein Analytics

Finarkein Analytics is a platform for consent-based data sharing across lending, insurance, and asset management, utilizing open data ecosystems like account aggregators.

- **Founded by:** Aakash Agrawal, Nikhil K., Dheeraj Kumar, Shrirang Kshatriya
- **Other Investors:** IIFL, Infoedge

vegapay

Vegapay is a plug-and-play solution for financial institutions and fintechs, integrating existing APIs for lending, co-branded cards, and multi-currency cards.

- **Founded by:** Gaurav Mittal, Puneet Sharma, Himanshu Agrawal, Abhinav Garg
- **Other Investors:** Elevation

ASPIRE

Aspire provides a UPI-based credit facility for self-employed individuals to avail of a credit line for personal as well as business use cases.

- **Founded by:** Tushar Garimalla, Manoj Rathi
- **Other Investors:** Orios, Picus

Jar

Jar is a micro-savings app democratizing access to digital gold, enabling users to invest, lease, and borrow against it in small amounts.

- **Founded by:** Nischay AG, Misbah Ashraf
- **Other Investors:** Tiger Global, Arkam Ventures

fego

Fego.ai provides open banking APIs for businesses to connect with customer financial accounts via the Account Aggregator framework, enabling personalized engagement and tailored use cases.

Founded by: Kumar Srivatsan, Kumar Srikanthan

- **Other Investors:** Acquired by Perfios

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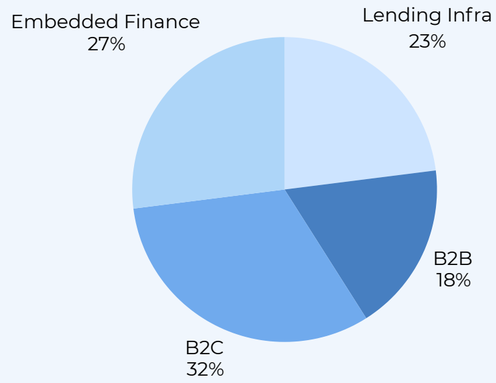
Investments Team

RESEARCH METHODOLOGY

This report is a culmination of insights graciously shared by contributors who played a pivotal role in its compilation. We would like to thank all those experts for their support. Our research methodology primarily involves sourcing information via the following sources, ensuring a comprehensive and well-rounded presentation of the content.

Conducted interviews with over 200 early-stage founders in Lending Tech.



50+

Interactions with PMs and growth experts from top lending companies

Engaged in discussions with more than 50 banks and NBFCs.

Referenced sources for secondary research, provided in the respective slides.

FOREWORD

Credit serves as the foundation of economic growth for countries like India, facilitating both business expansion and consumer spending as the economy strives to achieve its ambitious $10 trillion vision by 2030. However, despite this vision, credit penetration remains relatively low, with the country's conservative financial culture contributing to only a 50% credit-to-GDP ratio.

Nevertheless, with the emergence of a younger, tech-savvy demographic, this trend is expected to shift. Gen Z and Millennials are already exhibiting increased demand for credit, signalling a need for the lending ecosystem to adapt and embrace digital solutions to cater to diverse demographics.

As this socio-economic transformation unfolds, the digital landscape is witnessing a surge in platforms aiming to capture a larger market share from traditional lending companies. However, alongside this growth in digital lending, there is a critical need for regulatory frameworks to evolve to ensure sustainable economic development.

This report delves into the growing demand for credit, the emergence of solutions to meet this demand, the rapidly changing technological landscape, and the importance of collaboration between regulated and unregulated entities to support this growth.

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SECTION 1

EMERGING CREDIT GAP IN INDIA

With the economy projected to reach $5 trillion by 2027, a significant credit gap of around $1 Trillion by both individuals and businesses is anticipated, which cannot be addressed solely by physical institutions.

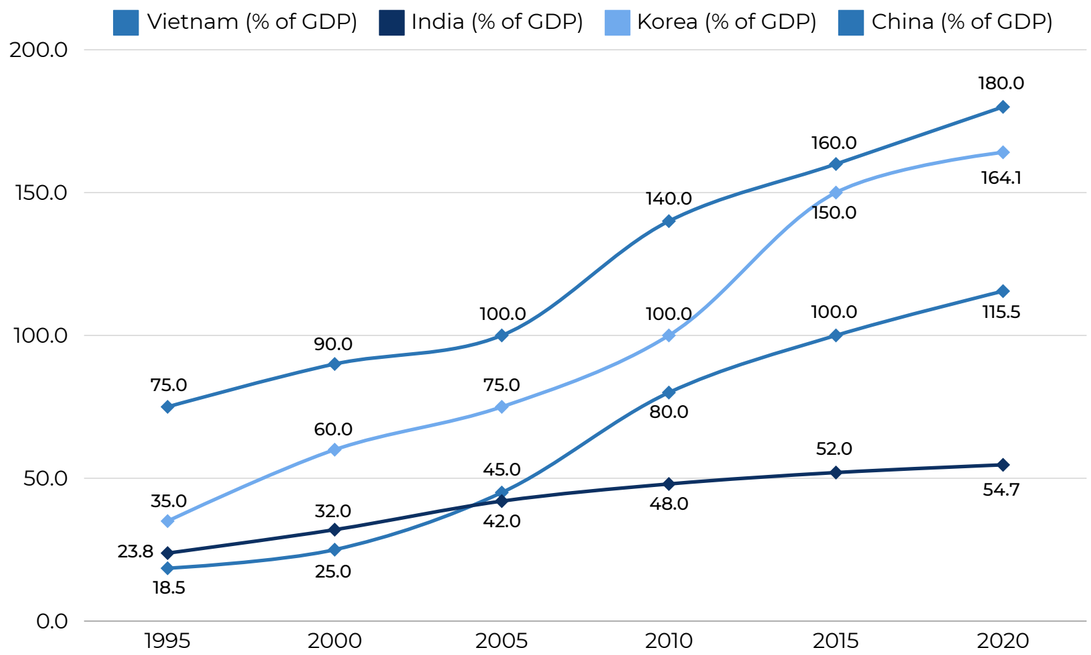
1.1 OVERVIEW OF DIGITAL LENDING IN INDIA

The lending sector in India encounters distinctive challenges related to credit penetration and financial inclusion, presenting substantial opportunities for digital players to fill this gap.

Economy and Credit Gap Existence

- The Indian economy is expected to grow by 7.8% to reach $5 Trillion by 2027. Digital lending solely will grow to $400 Billion by 2024, contributing 55% of FinTech.
- Digital Lending can reach the last mile, unlike traditional lending institutions. Despite the innovative UPI and India Stack initiatives, there are still over 500 Million Indians who have not yet achieved complete financial inclusion.
- The credit-led opportunity gap between India vs the United States and China is significant.
- India's domestic credit is only 50% compared to over 100% for other Asian countries. Globally, digital lending is transforming access to finance for SMEs.
- In the UK, government and fintech initiatives like open banking are bridging a £56 billion credit gap, fostering peer-to-peer lending and invoice purchasing.
- Singapore, positioning itself as a fintech hub, issues digital banking licenses and encourages FinTechs to lend to SMEs, traditionally underserved by banks.
- China leverages big data and AI in platforms like MYBank to disburse loans swiftly to millions, enhancing financial inclusion.
- In India, digital infrastructure, like India Stack, and regulatory measures are facilitating a similar transition, though India still faces challenges in reaching unbanked MSMEs and users.

Total Number of MSMEs	64 M	32 M	44 M
MSMEs Credit Penetration	14%	50%	37%
Retail Credit Penetration	11%	75%	55%
Credit Card Penetration	5%	67%	38%



Domestic Credit to Private Sector (% of GDP)

1.2 SOLUTIONS ACROSS THREE SEGMENTS

There is a significant potential for growth in India's digital lending sector, aiming to bridge the credit gap and foster financial inclusion amidst a rapidly expanding economy.

Business-to-Business (B2B)

- $400 billion, 10% of India’s GDP is untapped in the MSMEs market which hampers the growth of the sector and the economy even though they account for 30% of India’s GDP.
- Many MSMEs, unable to provide collateral, are often excluded from traditional lending, pushing them into a cycle of high-cost debt due to reliance on informal credit sources with steep interest rates.
- Conventional lending metrics reveal that only 14.8% of MSMEs consistently grow their revenue over two years, and a scant 15% are eligible for a one-year working capital limit.
- So far only 14% have capitalised on credit, unveiling an immense potential for short-term business loans that can be digitally disbursed.

Business-to-Consumer (B2C)

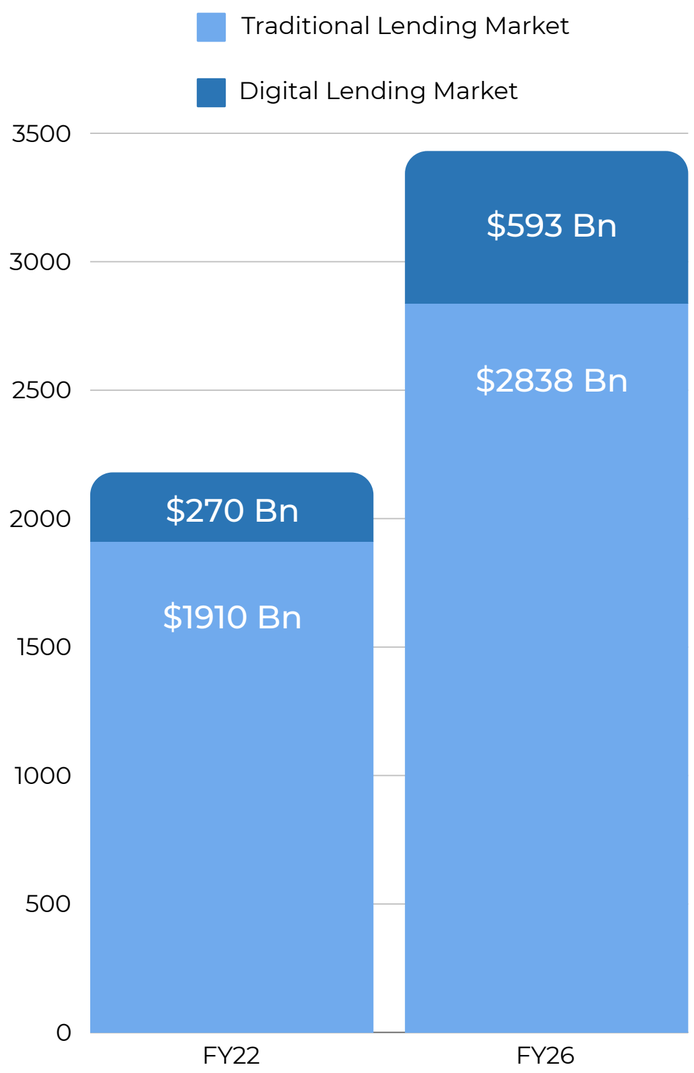
- There are over 500 million new-to-credit (NTC) individuals in the country.
- FinTechs outpace private lenders in engaging with the NTC segment, successfully transitioning over half to higher credit scores (>700), demonstrating the low-risk nature of NTC with alternative assessment methods.
- FinTechs also have a broader reach in smaller towns, alleviating credit access disparities, and showing increased popularity with Gen Z and millennials.

Infrastructure

- As new solutions and businesses emerge, infrastructure will need to keep pace to be able to cater to the diverse segment.
- The evolution of infrastructure from monolithic, on-premise solutions to micro-service-driven, cloud-based ones will promote flexibility to customise products.
- With generative AI and new-age technology, lending companies can target longtail products and customer profiles.

1.3 KEY DRIVERS OF LENDING IN INDIA

Several socio-economic and technological factors are contributing to the growth of lending in India.



Digital Lending Market and Traditional Lending Market ($ Billion)

While lending is projected to experience overall growth, the digital lending sector is anticipated to grow at a faster pace.

Demand

Socio-Economic Factors

- Increased employment and worker participation (54.1% in 2022).
- Improved banking access with 77.3% bank account penetration (2021).
- Higher income levels with GNI per capita grew by 1.6x from 2011-21.

Demographic Trends

- A tech-savvy younger generation with ~52% Gen-Z and millennials in 2021.
- Significant untapped MSME market with a credit gap of ~$400 billion.
- The gig economy is expected to reach 23.5 million workers by 2030.

Consumer Behaviour

- Better demographic dividend with aspirational consumers.
- High receptivity to digital transactions post-Covid.

Supply

Technology & Digital Penetration

- Smartphone penetration is ~46.5% (2023), the highest data use globally (12GB/user/month).
- Extensive digital footprint via Aadhar, PAN, and GSTIN, facilitating credit evaluation.
- Cloud, Big Data, AI, and automation advancements.

Enabling Environment

Government support with IndiaStack by leveraging Digital Public Infrastructure (DPI) for efficient lending platform operations.

Source: Morgan Stanley

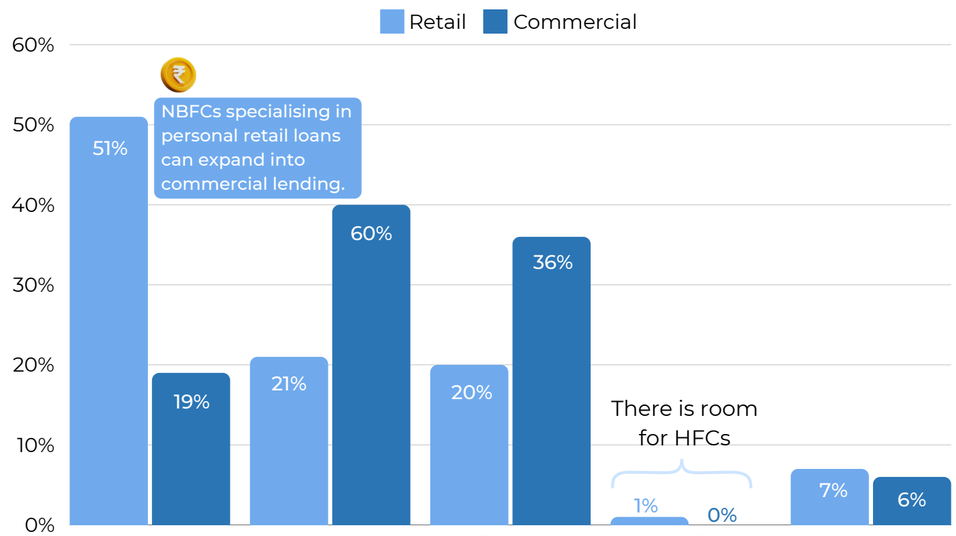
1.4 CURRENT PLAYERS IN THE MARKET

Private Sectors/ Public Sectors banks and NBFCs have diversified exposure, whereas fintech are concentrated on personal loans and BNPL. This creates a massive room for growth of other products.

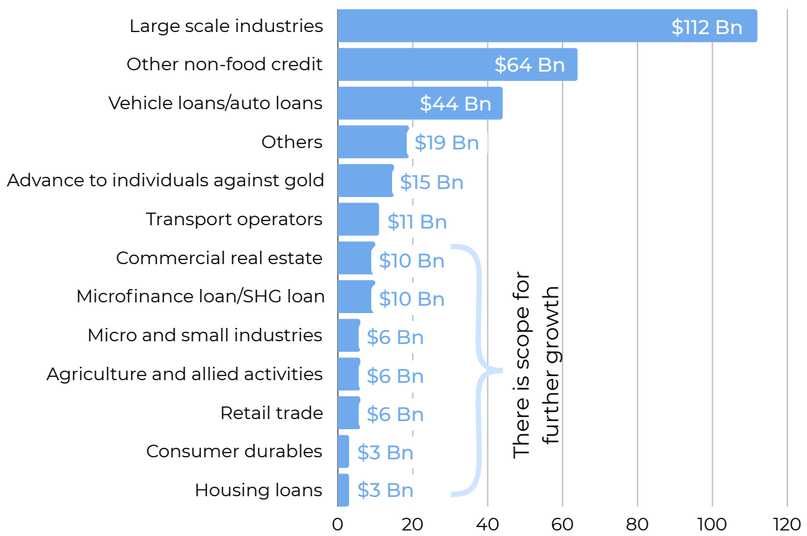
Existing Traditional Players

Banks	Banks in India serve as the cornerstone of traditional lending, offering a broad range of secured and unsecured financial products with an established, regulated framework.
NFBI	NBFIs complement the banking sector by providing specialised lending and investment services, often catering to niche markets with more flexible terms.
MFIs	MFIs focus on small-scale loans to underserved populations, aiming to enable economic development at the grassroots level with microcredit as their primary tool.

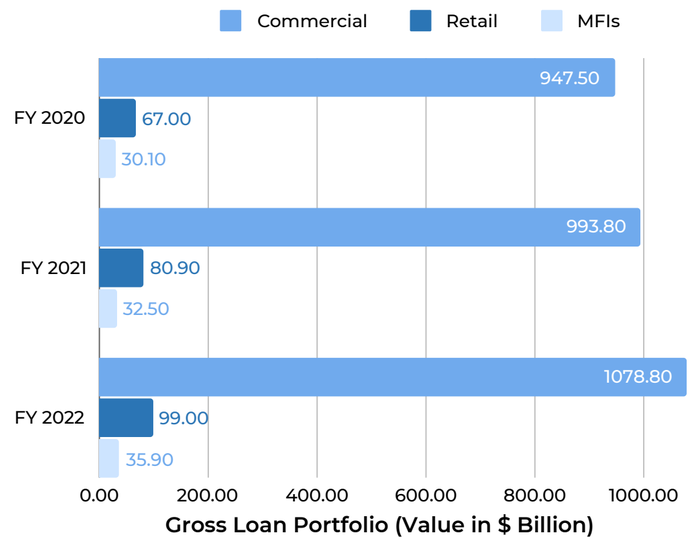
Market share of retail and commercial lenders in India in FY22, by number of loans.



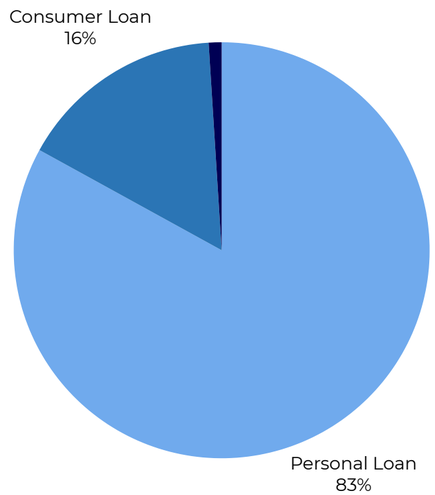
Financial credit in $ Billion vs Industry/Sector



Portfolio outstanding of Retail and Commercial in India from FY20-22



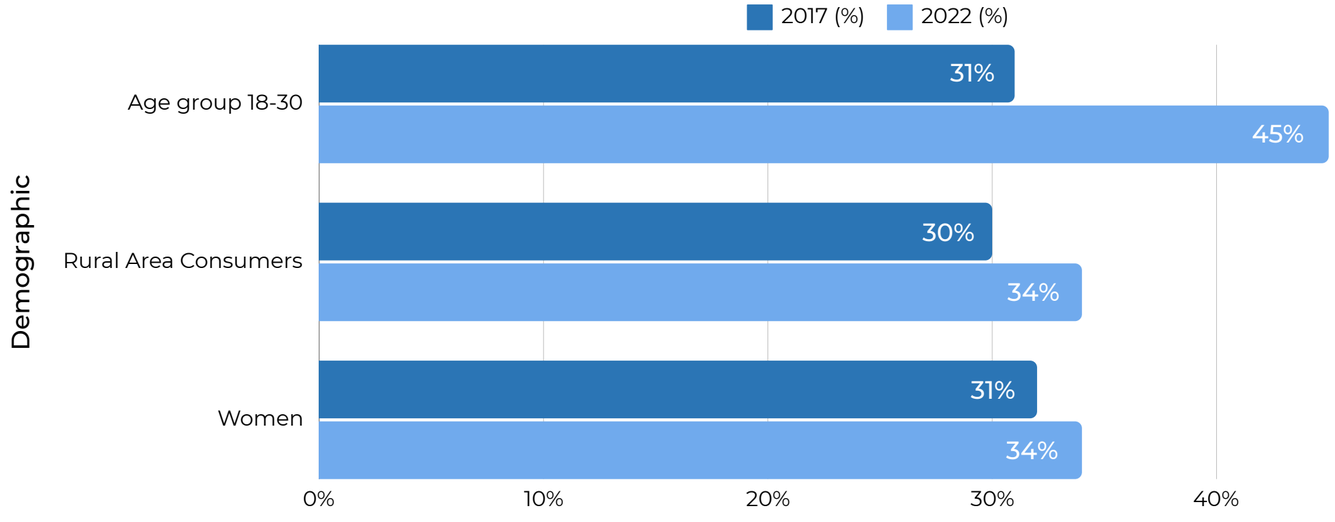
Distribution of FinTech loan value in India in FY23, by type



1.5 WIDER REACH AND POTENTIAL OF DIGITAL LENDING FOR RISING NTC CUSTOMERS

Digital lending in India leverages technological advancements to offer more inclusive financial services, surpassing traditional methods in reach and efficiency. This makes it a better option for new to credit customers.

Growth of NTC Customers in Different Demographics in India (2017 vs 2022)



- In India, 35 million new credit histories began in 2021; an additional 31 million within the following nine months.
- Millennials constitute 42% and Gen Z 29% of new credit users, with 67% from rural and semi-urban areas.
- Female participation in new credit uptake increased from 32% in 2017 to 34% in 2022, where women make up 29% of consumer durable loan borrowers, with higher credit uptake rates in less serviced areas and specifically in the 18-30 age group, female participation grew from 31% to 45%.

NTC Customers prefer Digital Lending due to several advantages over Traditional Lending

	Digital Lending	Traditional Lending
Key Players	Involves progressive financial institutions like tech-forward banks, alternative non-banking financial companies, digital banks, and lending technology firms.	Primarily composed of traditional banks and non-banking financial companies.
Funding Sources	Access to a wide array of investors including venture capital and private equity firms, startup accelerators, and government funding.	Investment avenues are generally confined to a select group of venture capitalists or private equity firms.
Credit Evaluation	Utilises improved credit scoring methods integrating non-traditional data and sophisticated algorithms powered by AI/ML.	Dependent on traditional credit scores and financial statements for risk assessment.
Operational Efficiency	Leverages online platforms and digital tools to streamline processes and use data analytics for efficiency.	Heavily reliant on paper-based processes, which can lead to longer processing times.
Consumer Feedback	Provides tailored experiences to consumers using data analytics and AI.	Potential for human bias and errors, resulting in a less optimised customer experience.
Reach & Inclusion	Prioritizes widespread accessibility, indicating a commitment to extend services beyond traditional geographic limitations.	Concentration in urban centers, often overlooking rural or less developed regions.

1.6 DEMAND CHALLENGES: NEW TO CREDIT (NTC) INDIVIDUAL AND MSMEs

New-to-Credit individuals and MSMEs face multiple challenges, including a lack of formal credit history, collateral requirements, and high-interest rates, impacting their ability to secure loans.

Challenge	NTC Individuals	NTC MSMEs
Credit History and Scoring	Lack a formal credit history	Operate informally without documented credit history
Collateral Requirements	May not have assets for collateral	Often lack required collateral for loans
Documentation and Compliance	Struggle with loan application documentation	Face daunting compliance and paperwork
High Interest Rates	Subjected to higher rates due to unknown risk	Cost of credit can be prohibitive due to high rates
Loan Size and Terms	Offered smaller credit lines, less favorable terms	Need smaller loans, terms often unsuited to their needs
Financial Literacy	Lack knowledge for informed borrowing decisions	May not have knowledge and access required for financial products
Digital Divide	Lack access to digital credit platforms	Data not digitalised to avail online credit.
Operational Constraints	Difficulty meeting lender's operational requirements	Inefficiencies, like delayed payments, affect cash flow
Regulatory Hurdles	Confused by regulatory requirements	Impacted by changing regulations affecting loan management
Market Volatility	Income stability affected by market changes	More vulnerable to economic downturns or sector issues

1.7 SUPPLY CHALLENGES FACED BY LENDERS IN INDIA

Lenders in India face challenges such as extended credit acquisition times, complex data in underwriting, and evolving collection and recovery landscapes, highlighting the need for streamlined processes and digital integration.

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1. Prolonged Turnaround Time for Formal Credit Acquisition

- Documentation and Verification Delays:
  - Inadequate or under-reported financial documentation from MSMEs, along with a lack of registration data due to non-compliance with GST or NSIC, significantly prolongs the credit approval process.
  - The geographically dispersed credit teams and the need for physical document verification and in-person assessments in remote areas further extend the turnaround time (TAT).
- Digital Infrastructure and Demand Urgency:
  - Issues with accessing digital land records and correcting data due to cumbersome form-filing processes pose significant hurdles.
  - The immediate financial needs of MSMEs drive them towards local lenders for faster credit solutions, bypassing formal sources with longer processing times.

2. Data Complexity in Credit Underwriting

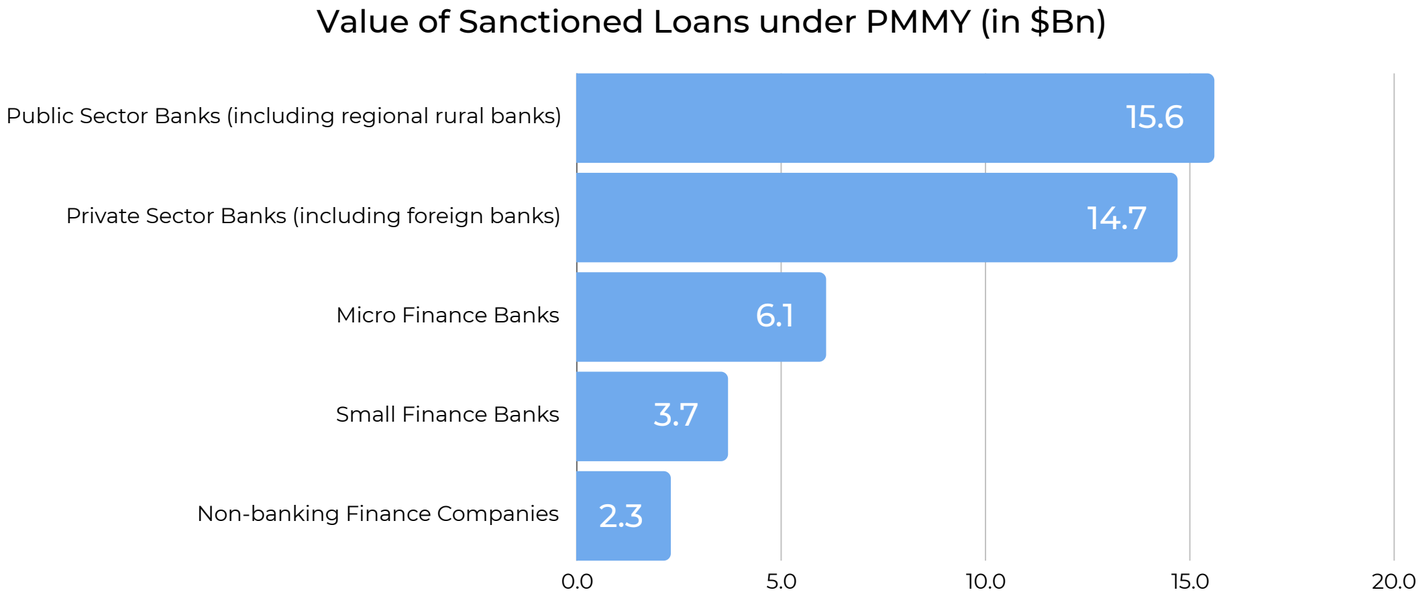
- Absence of Lending Records and Data Sharing:
  - A substantial portion of MSMEs lack formal lending records, and there is no established mechanism for the exchange of lending data among financial institutions yet.
  - Limited use of credit scoring for MSMEs, such as CIBIL SME Score or SMERA ratings, complicates the credit underwriting process.
- Banking Information Silos and Upcoming Solutions:
  - Currently, there's no system to link banking information across different banks which impedes a unified financial overview for underwriting purposes.
  - The forthcoming Account Aggregator framework and the proposed Public Credit Registry (PCR) are anticipated to streamline the linkage and availability of financial information for more efficient underwriting.

3. Collection / Recovery

- Key issues include the risk of borrower default and bankruptcy, necessitating thorough background checks and analysis of financial statements to pre-empt default risks. Corporate dealings are fraught with bureaucratic hurdles and communication gaps, requiring direct higher management contact for smoother operations. The slow legal system and expensive arbitration options further complicate debt recovery.
- Post-COVID-19 challenges have intensified with the Reserve Bank of India (RBI) imposing stricter recovery norms, complicating quick loan disbursal, especially for small, unsecured loans. A significant shift towards digital debt collection is observable, leveraging data analytics for more efficient, empathetic, and cost-effective recovery processes. Modern consumers, particularly younger ones, show a marked preference for digital repayment options, necessitating the integration from the start of the lending cycle.

1.8 GOVERNMENT SCHEMES PROMOTING LENDING

The Indian government has increased its scrutiny to identify and weed out unethical digital lending apps. In addition, initiatives like Jan Dhan and Pradhan Mantri Gramin Digital Saksharta Abhiyaan are also helping to increase digital uptake.



Indian banks' weak loans (better known as non-performing assets or NPAs) are projected to drop to 4.5% at the end of Fiscal Year 2023-24, and to 3.5% at the end of Fiscal Year 2024-25. (S&PGlobal).

$40 Bn disbursed under PMMY; government's pushes for adoption of digital infrastructure, which can play a critical role in solving digital lending.

Scheme Name	Purpose & Use	Features & Benefits
MSME Loan Scheme	To provide working capital to MSME sector industries.	• Loans up to ₹1 Crore • Low-interest rates • 3% reservation for women entrepreneurs • Quick approval process
Credit Guarantee Fund Scheme (CGTMSE)	To facilitate collateral-free loans for MSMEs.	• Working capital loans up to ₹10 Lakhs without collateral • Covers primary security for loans above ₹10 Lakhs and up to ₹1 Crore
MUDRA Loan	For micro/small businesses in manufacturing, trading, and services.	• Three loan categories: Shishu (up to ₹50,000), Kishor (up to ₹5,00,000), Tarun (up to ₹10,00,000)
Credit-Linked Capital Subsidy Scheme (CLCSS)	To fund technological upgrades in businesses.	• Up-front capital subsidy of 15% for eligible businesses • Aims to reduce production costs
National Small Industries Corporation (NSIC) Subsidy	Offers funding benefits for raw material and marketing assistance to MSMEs.	• Raw material assistance for indigenous and imported materials • Marketing assistance to enhance competitiveness
SIDBI Loans	Provides direct loans to MSMEs and indirect loans to NBFCs and SFBs.	• Loan amounts between ₹10 Lakhs to ₹25 Crores • Tenures up to 10 years • Loans up to ₹1 Crore without collateral

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SECTION 2

DRIVERS OF DIGITAL LENDING

Digital lending has proliferated in the last decade due to rapid advancements in technology, India's unique demographic distribution and the rising need for credit to continue supporting growth.

2.1 DEMOGRAPHIC BEHAVIOUR OF INDIAN BORROWERS

India's borrower demographic reveals a youthful, tech-savvy population with increasing financial inclusion, pointing to a ripe market for diverse digital lending products.

Growing Technology Adoption

Internet Users

1.2 billion internet users in India, expected to reach **1.6 billion** by 2050.

Smartphone Users

As of 2023, there are **659 million** smartphone users, with a penetration rate of **46.5%**.

Social Media Users

76% of internet users in India use social media platforms such as Facebook, WhatsApp, and Instagram.

Internet Penetration

Internet penetration in India is **55%**, with **821 million users**, split 54% in rural areas and 46% in urban areas.

Payment Users

UPI in India facilitated over **100 Billion** transactions in 2023 from **300 million** UPI users.

Credit-driven Consumption

Credit Penetration

55% of people and 39% of businesses have availed credit facilities.

GDP Growth

GDP growth is forecasted to be 6.2% in FY2024-25.

Credit to GDP Ratio

In FY24, the credit-to-nominal GDP ratio is expected to increase from 1.2x to 1.7x.

Average Leverage

With GDP growth and higher credit penetration, there's an increasing demand for absolute credit.

Digital Financial Inclusion

77.3%

Financial Coverage

510 Mn

Pradhan Mantri Jan-Dhan Yojana Bank Accounts

100 Bn

UPI Transactions

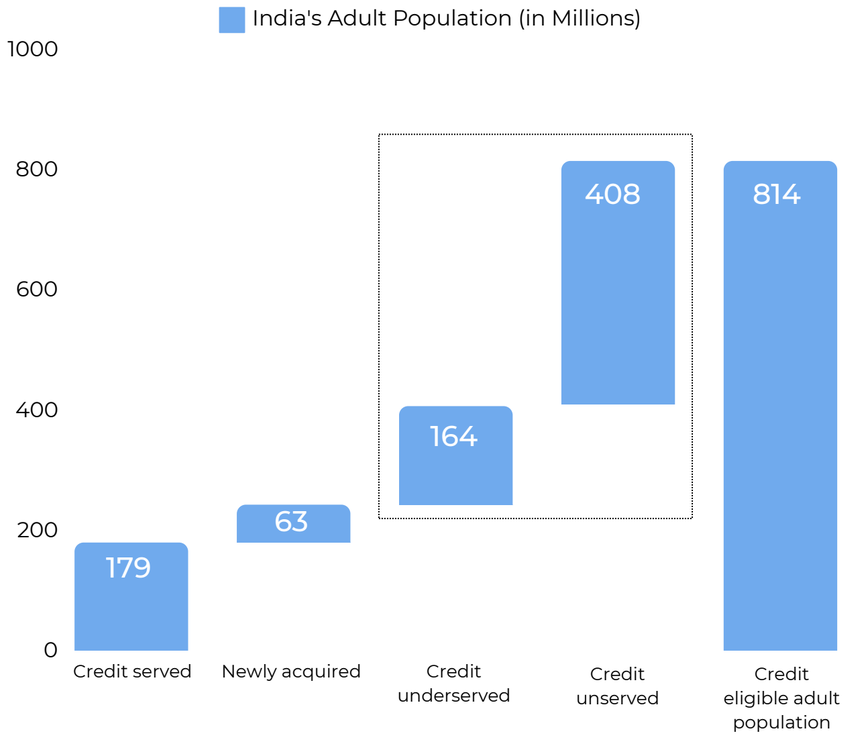
6.65 Mn+

Aadhar Enabled Platform

Source: Inc42, DataReportal, Internet in India Report 2023 (IAMAI) and Kantar

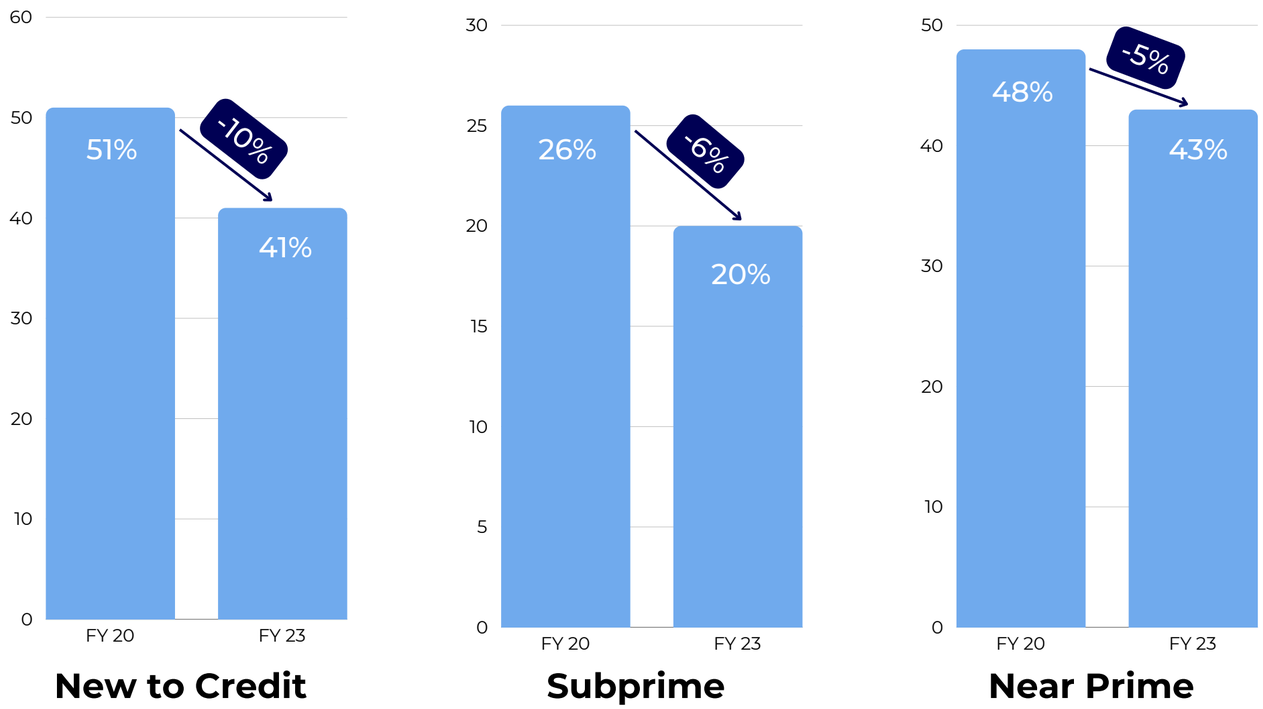
2.2 LARGE, UNDERSERVED NEW TO CREDIT USERS

As internet penetration grows, there's a rising population of New-To-Credit (NTC) customers with intent and eligibility for credit but lacking credit history. Alternate lending is needed to serve this demographic.



The Growing NTC Segment

- Banks and existing players have reached approximately 250 million people.
- There are over 500 million unserved and underserved individuals with banking access in need of credit.
- Serving this diverse user base demands creative and alternative approaches.



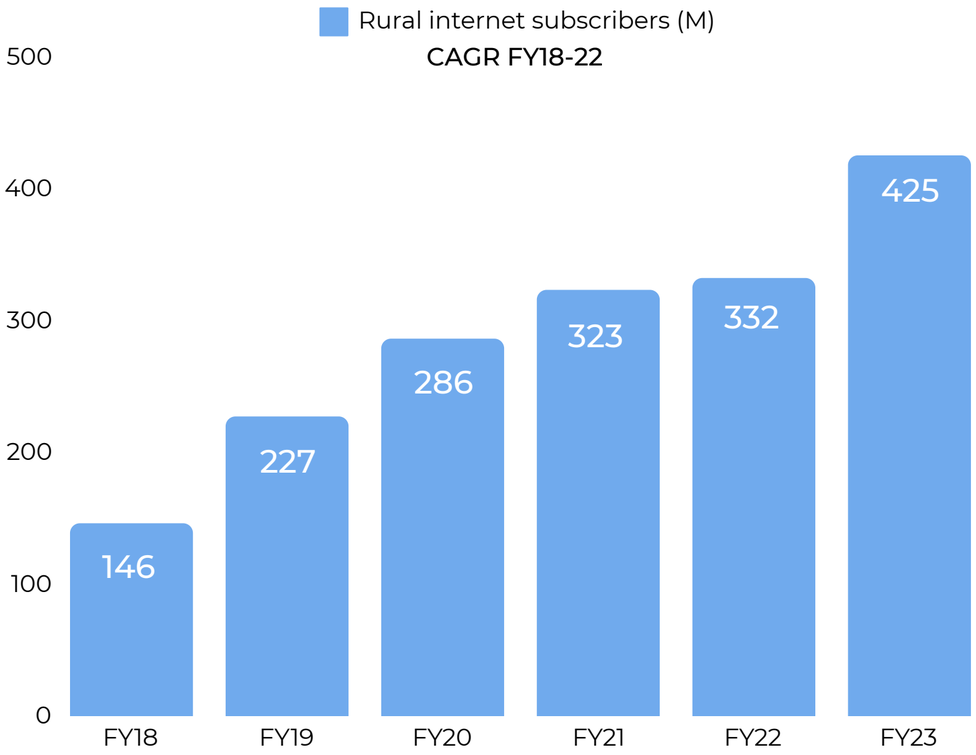
Approval Rates Declining

- Credit approval rates have declined across segments due to increasing new-to-credit (NTC) applicants and decreasing risk appetite.
- This trend is evident not only in unsecured but also in secured asset classes.
- The new-to-credit segment has experienced the most significant drop in approval rates.

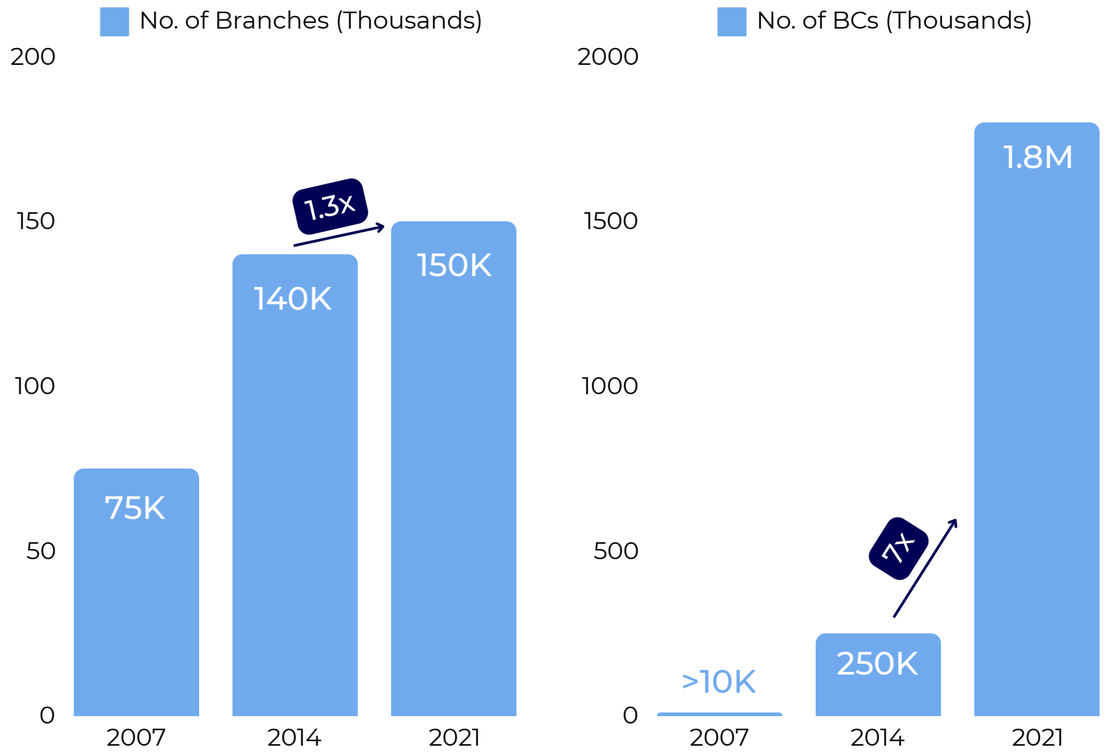
Robust digital lending platforms must emerge to include the vast, underserved population in the credit system.

2.3 RURAL CONNECTIVITY - A CHALLENGE

India's expansive rural areas, with 720 districts and 5 lakh villages are served by only 154,725 post offices. To access the rural areas, we need to adopt hybrid and digital touchpoints, providing efficient solutions for enhanced credit accessibility.



Growing Rural Internet Subscribers (in Millions)



Number of Physical Branches in India

- Limited access to formal credit in rural India due to geographical inaccessibility underscores the urgent need to stimulate rural growth.
- Bridging the credit gap is crucial, especially considering that despite 70% of the population residing in rural areas, their contribution to GDP stands at only 30%.

- The expansion of digital penetration has outpaced the growth of physical branches.
- The no. of business correspondents and digital users has seen remarkable expansion, growing by 7x and 2x respectively, while physical branches have only grown 1.3x.

The only way to access this population is via hybrid and digital approaches.

Source: Economic Times, BCG Report

2.4 DIGITAL PUBLIC INFRASTRUCTURE - INDIA STACK

Over the past decade, the establishment of India Stack has empowered lending platforms to utilise digital public infrastructure and data, enabling them to reach and underwrite a previously unreachable large population.

IDENTIFICATION & ONBOARDING LAYER

- **Aadhaar:** The database encompassing 99% of India's adult population, recorded approximately 2 billion authentic transactions in January 2023, serving 1.4 billion users.
- **eKYC:** Witnessing active participation from 170 entities and 105 banks, eKYC transactions surged to 2.31 billion by March 2023.
- **DigiLocker:** Integration with DigiLocker for various entities, including banks, has reached its zenith, boasting over 150 million users.

ENABLER & DATA LAYER

- **Account Aggregator (AA):** Onboarded 146 FIs enabling 1.9 Bn+ accounts, where usage penetration is growing at 50-60% monthly.
- **ONDC:** To register 900 million buyers and 1.2 million sellers, ONDC aims to achieve a Gross Merchandise Value (GMV) of $48 billion.
- **OCEN:** A set of open standards to facilitate the various aspects of the lending value chain.

PAYMENT LAYER

- **UPI:** It is quicker to activate than credit cards, and can be linked to overdraft accounts.
- **eNACH + Auto NPI:** Enables quicker and faster digital collection.

We have provided detailed explanations of Account Aggregators, OCEN, and ONDC in the Appendix.

2.5 RAPIDLY ADVANCING TECHNOLOGY

The transition in technology from a modular structure to a cloud-based microservice architecture has facilitated the evolution of lending stacks, enabling them to leverage various data sets and digitally underwrite a wide range of asset classes.

Micro-service Driven Architecture

The emergence of micro-service-driven architecture has empowered FinTechs to utilise cloud-based platforms for underwriting processes.

Pre 2015

- Monolithic architecture
- Difficult integrations
- Difficulty in maintaining updates and changes
- Required an in-house team
- 18-20 days processing

Post 2015

- Open-system and cloud-based architecture
- Plug and play to enable multiple integrations
- Automatic updates through the system
- Processing reduced to 1-3 days

GenAI Lending Use Cases

The Rise of Generative AI (GenAI) significantly impacts lending in three key areas:

- **Underwriting:** GenAI streamlines risk assessment by analysing diverse data sources like social media and IoT devices, freeing up underwriters for higher-value tasks.
- **Collections:** GenAI predicts payment behaviours, improving efficiency in managing delinquencies and optimising collection strategies. It supports asset management to reduce costs and enhance customer experiences.
- **Customer Interactions and Operations:** GenAI streamlines processes like onboarding and account setup, enabling hyper-personalisation of marketing communications and accelerating the closing process in commercial banking.

Risk of using GenAI

- **Bias Management:** AI models can inherit biases from training data, leading to inaccurate outputs. This risk can be mitigated by implementing methods to ensure accurate and unbiased model outputs.
- **Data Quality:** AI model effectiveness relies on quality data. To prevent errors, one must follow data management best practices, including minimal data collection, encryption, and regulated data access.
- **Regulatory Adherence:** Staying well-informed and adaptable to evolving AI regulations is crucial to effectively address potential legal risks.
- **Technological and Operational Risks:** When implementing Generative Artificial Intelligence (GenAI), it is essential to consider technological, third-party, and intellectual property risks.

2.6 EVOLVING REGULATORY FRAMEWORK

Tech-savvy policies and vigilant regulation have ensured that regulations adapt to the changing needs of the user base, the proliferation of FinTech players, and evolving technologies. This dynamic regulatory environment fosters a strong and resilient financial ecosystem.

REGULATIONS

1 RBI Regulations

RBI regulations shape digital lending to protect consumers and promote ethical practices, with mandatory cooling-off periods, loan transaction limits, and customer consent for credit limit increases.

2 Co-Lending Regulations

In India, RBI regulations for co-lending prioritise fair practices and consumer protection. This includes direct loan disbursement into borrowers' accounts, upfront disclosure of loan costs as APR, and mandatory reporting to CICs.

3 Strengthened Data Security

As digital lending expands, so does the risk of fraud. Digital lenders now prioritise data protection, supported by RBI's data security and cybersecurity guidelines, enhancing consumer trust in digital lending platforms. The RBI guidlines for digital lending issued in September 2022 has consumer data restrictions, third-party restrictions and all data needs to stored in India which led to several operation changes by lenders.

ECOSYSTEM DEVELOPMENT

4 Improved Collaboration

FinTech and traditional lenders have shifted from competition to cooperation, fostering innovation and expanding financial access in India. Regulatory support for digital lending and increased awareness further strengthens this partnership.

5 Rise of Credit Unions and Small Finance Banks

They are leveraging digital lending to expand their loan portfolios. This technology-driven approach improves loan accessibility, accelerates approvals, and enhances risk management, particularly for underserved communities.

Source: RBI Co-Lending Guidelines, Deloitte (RBI Guidelines for Cyber Security Framework), RBI Digital Lending Guidelines, RBI Bulletin

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SECTION 3

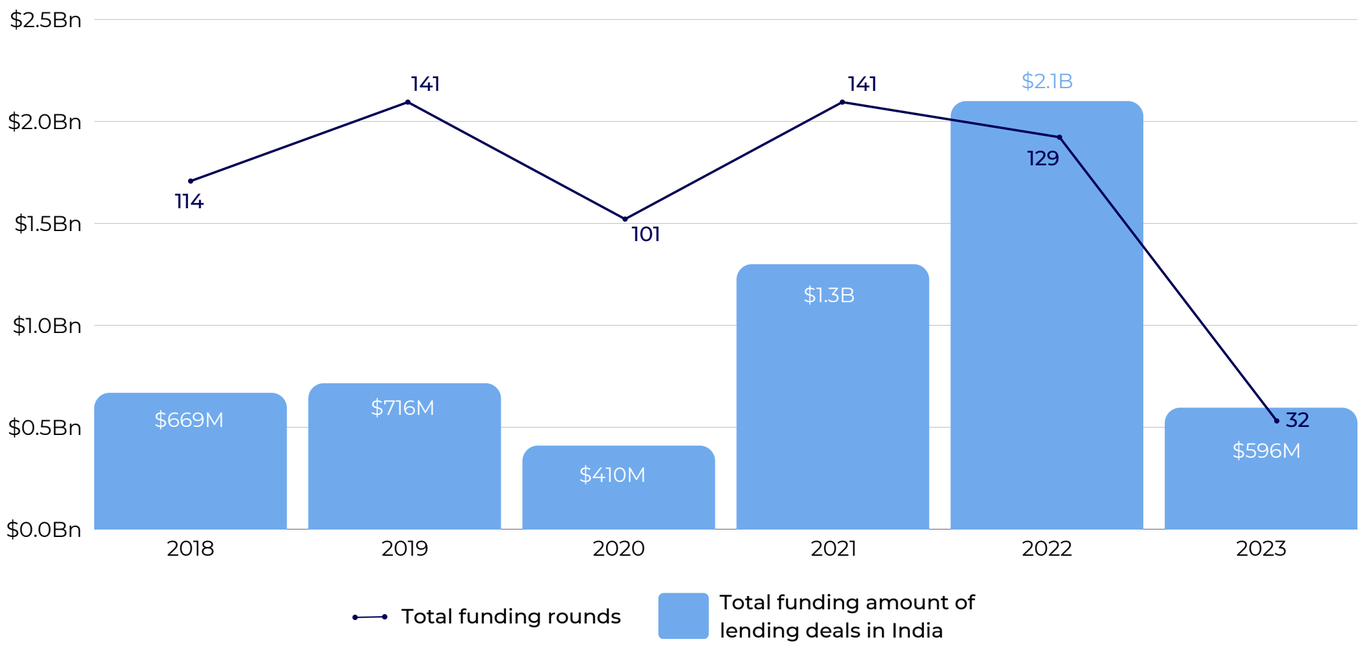
INVESTMENT TRENDS IN LENDING

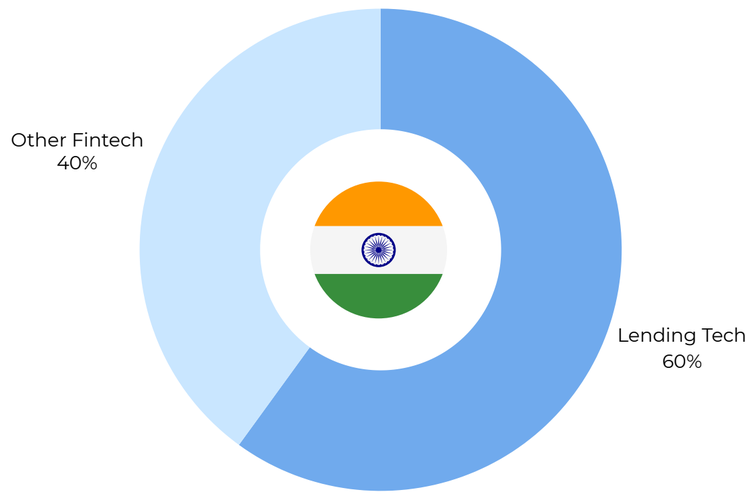
In the dynamic world of finance, investment trends in lending are continually evolving, shaped by technological advancements, regulatory changes, and shifts in investor sentiment.

3.1 DIGITAL LENDING INVESTMENT OVERVIEW

The surge of lending technology and its adoption by traditional lenders highlight a shift towards digital finance, enhancing access and efficiency in lending. This transition has drawn significant investor attention and capital in the last five years.

VC/PE Investments in Lending





Split of LendingTech and Fintech in 2023

Lending tech comprises two-thirds of all fintech startups in India, making it the largest segment.

M&A in Lending Tech (2022-23)

Company (Founded Year, Total Funding)	**Acquirer(s)**	**Acq. Date**	**Acq. Price**	**Value/ Revenue**
trillionloans (2018, Mumbai, $530K)	BharatPe	Mar 2023	$36M	38.78x
UPWARDS (2016, Mumbai, $5.5M)	LENDINGKART	Feb 2023	$12M	12.67x
ezetap Ezetap (2011, Bengaluru, $66M)	Razorpay	Aug 2022	$200M	9.30x

Source: Tracxn, Pitchbook

3.2 VENTURE CAPITAL INTEREST IN LENDING

Venture capital investments in lending tech have boosted unicorns and fueled Series B+ funding rounds, showcasing the sector's robust growth potential. India's digital lending scene features listed unicorns as well, emphasising potential for exit avenues.

Unicorns in Lending (2022-23)

Company	Description	Unicorn since	Funding	Valuation Multiple
InCred Borrow. With Confidence.	A digital platform providing a variety of consumer and business loans.	Nov 2023	$318M	9.50x
vivriti CAPITAL	Creator of a debt financing platform catering to corporations, SMEs, and individuals.	May 2022	$205M	19.38x
Oxyzo	Digital lending platforms offering small-scale business loans.	Mar 2022	$201M	13.50x
Yubi	A company offering lending as a service and a corporate lending platform.	Mar 2022	$239M	30.80x

Yubi showcases a higher multiple due to in-house lending stack including LOS/ LMS for seamless integration.

Top Investors and their Portfolio

Key Investor	No. of Deals	Notable Deals
Matrix Partners India	10	CreditVidya, LiquiLoans, Oxyzo, Jupiter, Avail Finance
Peak XV Partners	8	Yubi, Axio, Rupeek
Accel Partners	7	Money View, Rupeek, Indifi
Nexus Venture Partners	6	Kiwi, Jify, IndiaShelter, Namaste Credit
Elevation Capital	5	Axio, Mintifi, StrideOne
Eximius Ventures	**5**	**Vegapay, Aspire, Fego.ai, Finarkein Analytics, Jar**
Lightspeed	3	Yubi, Uni, Setu

Source: Entrackr, Tracxn

3.3 CASE STUDIES OF UNICORNS

Cred and FiveStar are both unicorns in lending but with distinct business models. While FiveStar concentrates solely on lending and offers financial products primarily for borrowing needs, Cred diversifies its offerings. It provides various services beyond lending, including rewards and access to products, extending credit or liquidity to enhance customer engagement and value.

CRED

Business Overview: CRED is a platform that offers various services such as paying rent with credit cards, earning interest on peer-to-peer loans, loan management, and earning from ads and listing fees. It also promotes brands with coupons and vouchers, simplifies credit card payments, and allows credit card payments for rent and other purchases. They use a distribution first approach, where it onboards high-quality borrowers by offering other products and then upselling and cross-selling credit-worthy users lending products.

Product Offering:

- Payments system with rewards (CRED processes <1% of total UPI transactions).
- Bill payment platform with rewards for credit card bills, rent, etc.
- Peer-to-peer lending through partner financial institutions via Cred Mint.
- BNPL (Buy Now, Pay Later) through Cred Flash.
- Cred Cash offers instant credit lines of up to Rs. 5,00,000 at 12-18% per annum sourced from IDFC First Bank.
- Small ticket loans with Prefr Rs. 3 lakh, catering to salaried users with average ticket sizes under Rs. 1 lakh, with tenures ranging from 6 months to 3 years at 18-36%.
- The acquisition of CreditVidya enables underwriting of new-to-credit customers or those without a bureau score using alternative data sources.

Business Model: CRED spends Rs 2.02 to earn a rupee of operating revenue in FY23. It has raised a total of $1 billion (Rs 7775.20 crore) in funding over 9 rounds. It has 11.2 million users who have >750 credit score and are eligible for BNPL and loans. CRED has built a loan book of around INR 10,000 Cr with Newtap NBFC.

Valuation Metrics: The EBITDA Margin reduced from -200.24% in FY22 to -86.42% in FY23. The revenue multiple for CRED for FY23 is 36.5x, where revenue is $175 million and valuation is $6.4 billion.

FIVE STAR

Business Overview: Loan-against-property NBFC focused on small business owners and self-employed individuals in tier 3+ cities to help with business and personal needs. They typically target families with cash flows of 30k-40k per month and have collateral of at least 10L.

Product Offering:

- Loan offered for business expansion, personal needs like home renovation, education, or emergency needs like marriage. Ticket sizes for each loan is between Rs 1L to 10L depending on customer profile.
- Yields range between 24-26% for a loan tenure of 2-7 years and backed 100% by collateral.
- Collateral is typically their self-occupied residential property with high emotional value.

Business Model: Net interest margin generated is 18% and return on asset is around 9% due to strong collections and low NPA of <2%. Use physical branches for distribution and collections.

Valuation Metrics	
AUM	6,915 Cr
Revenue	1,528 Cr
PAT	604 Cr
Price / Book Value	4.45x

Efficient underwriting and an effective collections network have contributed to high Return on Assets (ROA) and profitability, even while serving the New-To-Credit (NTC) customer segment.

Source: FiveStar Investor Presentation, Entrackr, Tracxn

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SECTION 4

KEY COMPONENTS OF SUCCESSFUL OPERATING MODELS

At the core of any thriving business lies a well-structured operating model, integrating key components that harmonize strategy, processes, and people to drive exceptional performance.

4.1 SUCCESSFUL OPERATING MODELS IN LENDING

Building a successful and effective lending business requires managing the needs of long-tail customers effectively while creating a positive Net Interest Margin (NIM) and a profitable business. This requires managing each lever of the business effectively to create a lean operating model.

What are customers looking for?

COMPETITIVE INTEREST RATES

- Addressing Customer Acquisition Costs (CAC) and utilising advanced risk assessment methods to offer more competitive rates.
- NBFCs typically have higher cost of funds compared to banks, and fintechs have higher rates than NBFCs. Therefore, effectively managing the cost of funds to provide competitive rates is essential.

FAST TURNAROUND TIME (TAT)

- Implementing digital data collection and processing systems for efficient online verification to maintain accuracy and reliability.
- Developing specialised underwriting algorithms tailored especially for New-To-Credit (NTC) customers.
- Establishing digital liens for enhanced security and claim management.

WIDER REACH AND ACCESSIBILITY

- A large part of being able to offer better rates & TAT depends on customer acquisition channels. There is a need to explore innovative customer acquisition channels to tap into new markets.
- Incorporating embedded lending solutions to integrate financial services seamlessly into existing platforms and ecosystems.

EFFECTIVE RISK MANAGEMENT AND COLLECTIONS

- Enhanced credit assessments via diverse data sources, reducing paperwork with digital solutions. Real-time tracking of financial behaviour for precise credit evaluations.
- Optimised collections strategy, combining digital communication with selective physical engagement for improved recovery rates.

To construct a robust and thriving lending business, its imperative to fortify the all the above pillars.

4.2 BUSINESS MODEL LEVERS

A positive Net Interest Margin (NIM) signifies efficient operations and robust profitability, essential for sustainable growth in a competitive lending landscape. Businesses need to design operating models to secure customers while focussing on each metric to create a path to profitability.

Illustrative Economics to Define Levers

Interest Rate Offered	18-36%	Interest rate margins are intricately set, factoring in the loan's nature (secured vs. unsecured), the borrower's background (rural vs. urban), and the loan purpose, informed by social data. **Lower costs are better for customers, but businesses need to optimise for risks and costs.**
(-) Cost of Funds	10-18%	The cost of funds depends on the lender's underwriting quality, the borrower profiles they serve, and the track record of their loan performance. **Lower CoF is better; FLDG Cap and the rise of co-lending are helping reduce rates.**
(-) CAC	3-4%	CAC can be reduced by utilising loan marketplaces, Lending Service Providers (LSPs), and hybrid acquisition channels, alongside leveraging platforms like OCEN and ONDC. **Low CAC is advantageous, but its benefits are maximised when customer churn is low.**
(-) Operations Cost	1-2%	Operational costs in lending include expenses related to loan disbursement, ongoing loan management, and monitoring activities to ensure compliance and timely repayments. **Low Ops Cost is ideal; Higher digitisation can help reduce cost.**
(-) Processing Cost	1-2%	Processing Fee is attributed to the costs involved in data collection, utilising alternative data providers, conducting eKYC verifications, and integrating account aggregator services. **Low processing fee preferred, but with a robust underwriting mechanism.**
(-) Credit Cost	1-5%	Credit cost for a lending company includes the money set aside for loans that might not be paid back, along with the costs of legal actions and on-ground collection efforts. The NPA for retail borrowers is 4.76% and MSME borrowers is 2.44% in India. **Low Credit Cost, as it means fewer losses from unpaid loans.**
Net Interest Margin	2-5%	Low NIM may indicate tight spreads between asset yields and liability costs, often caused by high funding costs or competitive pressures, impacting the business's financial performance and efficiency. **NIM of 5-10% is ideal.**

Cross-selling and upselling to existing users can reduce CAC and enhance economic performance. Lending businesses need to constantly balance among various levers to effectively underwrite to reduce NPAs while managing the cost of underwriting.

Above are illustrative rates.

4.3 DEEP DIVE INTO KISSHT

Kissht is a fintech platform which enables instant, seamless credit for consumers to make purchases at digital point of sale; online or offline. It has plug and play APIs, that can be easily integrated into any PoS or checkout pages to quick access of credit.

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kissht

Total Funding
$132.1 million

Valuation
$222.1 million

Year Founded
2015

Business Model

Kissht provides an instant line of credit for small business transactions and small ticket size personal loans to new to credit customers on the back of robust data analytics (Kissht Score). It has networked with 3000 offlines merchants and more than 50 online stores in about 40 cities in India.

Some Key Metrics (FY23)

Assets Under Management (AUM) = $155.1 million
Annual Disbursals = $1.42 billion
Average Loan Tenure= 1.09 Months
Average Loan Size: INR 13k - 15k

Analysis of Business and Impact on Profitability

A	**Interest Income**	**35%**
B	+ Processing Fee	50%
C	**Total Income**	85%
D	- Cost of Funds	-15%
E	- Credit Cost	-35%
F	- Processing Cost	-1%
G	- CAC and Operations Cost	-30%
H	**Net Interest Margin**	**4%**

Note: The numbers are estimates from the industry benchmarks, and back calculating from CRISIL Reports and public information provided in their filings.

A. Interest Income
Kissht caters to new to credit segment across India providing short term loan charging 2-3% per month. Given short loan tenure rates are high.

B. Processing Fee
High processing fee of 6% per month driven by long tail NTC customer profile.

C. Total Income
Very high fee income enables Kissht to generate a phenomenal annualised yield.

D. Cost of Funds
Assumed to be about 15% based on their BBB rating and coupon rate on Non-Convertible debentures.

E. Credit Cost
Credit cost are high at 35%, due to a relatively high risk associated with unsecured loans to NTC. However, a high processing fee and interest income helps manage risk.

F. Processing Cost
Incurred during loan origination and credit assessment and operations across Kissht's digital lending platform.

G. CAC and Operations Cost
Comprising CAC and operational costs, Developing and managing a network of over 3000 merchant leads to high cost.

H. Net Interest Margin
Despite catering to a high-risk customer base, Kissht is able to remain profitable due to the company's ability to manage interest spreads and operating costs effectively.

Source: CRISIL Reports, Tracxn

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SECTION 5

DIGITAL LENDING INFRASTRUCTURE

In the digital age, the foundation of efficient and accessible financing lies in a robust digital lending infrastructure, designed to streamline processes, enhance user experience, and expand financial inclusion.

5.1 LENDING INFRASTRUCTURE & ENABLERS

The lending infrastructure includes SaaS/Tech platforms for end-to-end loan underwriting and collections management. Core systems manage workflows, while data providers supply data to these workflows.

Core Platforms

LOS	LMS	Co-Lending Platforms	Credit Card Management Systems	FRM/Collections
LendingPad, lentra, finflux By M2P, VEEFIN	Margill, TurnKey Lender, finflux, LoanPro	Yubi, CredFlow, DVARA Holdings	vegapay, FALCON, 42CS, fiserv., TSYS	DPDzero, Credgenics, spocto X, icanpe
LOS helps lenders in managing the entire process of loan application, approval, and disbursal.	LMS cover processes including loan servicing, reporting, customer care, syndication and customer monitoring.	Centralised infrastructure supporting end-to-end digital lending processes, including origination, underwriting, servicing, and portfolio management for banks and NBFCs to lend together.	A Credit Card Management System (CCMS) is software designed to oversee and manage the entire lifecycle of a card. It typically includes automated business rules to streamline card management processes.	Systems for Financial Risk Management and delinquency recovery, automating risk assessment, monitoring, and debt collection workflows.

Data Providers

Alternate Data Platforms	Embedded Finance Platforms	Banking Data	Credit Bureau	KYC / AML / Risk Management
CREDITVIDYA, SCIENAPTIC, CREDITMANTRI, SATSURE	FinBox, BharatX, RUPIFI, FinStack, ASCEND CAPITAL	fego, Perfios, saafe, Finarkein Analytics, CAMSfinserv	TransUnion, EQUIFAX, experian, CRIF	Cygnet Infotech, karza TECHNOLOGIES, FINTELLE, BioCatch, digio
Companies that offer non-traditional or unconventional sources of data for assessing creditworthiness and making lending decisions.	Embedded finance platforms integrate banking services within non-financial apps and websites for seamless financial transactions and services directly within user experiences.	Banking data providers and account aggregators drive lending decisions through advanced analytics, open banking, and API integration for seamless financial insights	Credit Bureau use AI and Big Data enhance credit scoring and report analysis for precise, efficient lender decisions.	KYC and AML compliance through API solutions, including Video-KYC, meeting evolving regulatory standards.

Source: Digital Fifth Report

5.1A LOAN ORIGINATION SYSTEM (LOS)

LOS is a software platform that helps lenders in managing the entire process of loan application, approval, and disbursal. It automates tasks such as data collection, document verification, underwriting, compliance, and workflow management.

Process of Lending

Data Collection	The process begins with creating the lender's profile. Previously done through physical interviews, it's now conducted virtually via dedicated portals. Modern solutions integrate with modular data portals like account aggregators to gather essential customer information directly.
Data Verification	The verification process was usually done through interviews, background checks, document verification, etc. Current solutions can directly interface with UIDAI, account aggregators, NSDL, etc. to authenticate information in real-time. Thus, this process can be entirely automated.
Underwriting	Traditional solutions focus on financial and bank statements, while modern systems utilise a wide range of data points for a clearer assessment of creditworthiness and collateral value. Real-time analysis through frameworks like account aggregators refines this process.
Collection	Collections involved the lender using field agents to solicit the loan. The process also had a high degree of opacity. With the rise of digital payments, banks can utilise frameworks like eNach and auto UPI to automatically collect payments from the borrowers's accounts. LOS has plug-ins for this.
Compliance	Before LOS solutions, banks had to manage a vast physical document repository, making auditability and data tracking challenging. LOS solutions simplify data storage and tracking, enabling comprehensive monitoring of operations aligned with regulatory guidelines.

Evolution of LOS

Pre 2010

- Monolithic systems, challenging to integrate, support multiple apps with separate server-based storage.
- They entail setup fees, maintenance costs, and long implementation times, requiring skilled security personnel.
- Manual credit assessment results in processing times of 15-30 days.
- Regulatory reporting is manually filed using data warehouses, used by both public and private sector banks.

2010-2015

- Monolithic and tightly coupled systems offer medium integration difficulty, don't support multiple apps, and feature server-based data storage.
- They involve a one-time setup fee, annual maintenance costs, and medium implementation times, requiring security expertise.
- Manual credit assessment leads to processing times of 7-10 days, with regulatory reporting manually filed using data warehouses.

Post 2015

- Featuring an open system architecture and auto-scalability, this system offers low integration difficulty, cloud-based data storage, and flexible payment options.
- It ensures quick implementation, enhanced security, and streamlined credit assessment with processing times of 1-3 days.
- Automated regulatory reporting makes it suitable for banks, NBFCs, and fintech companies.

Key Loan Origination Systems

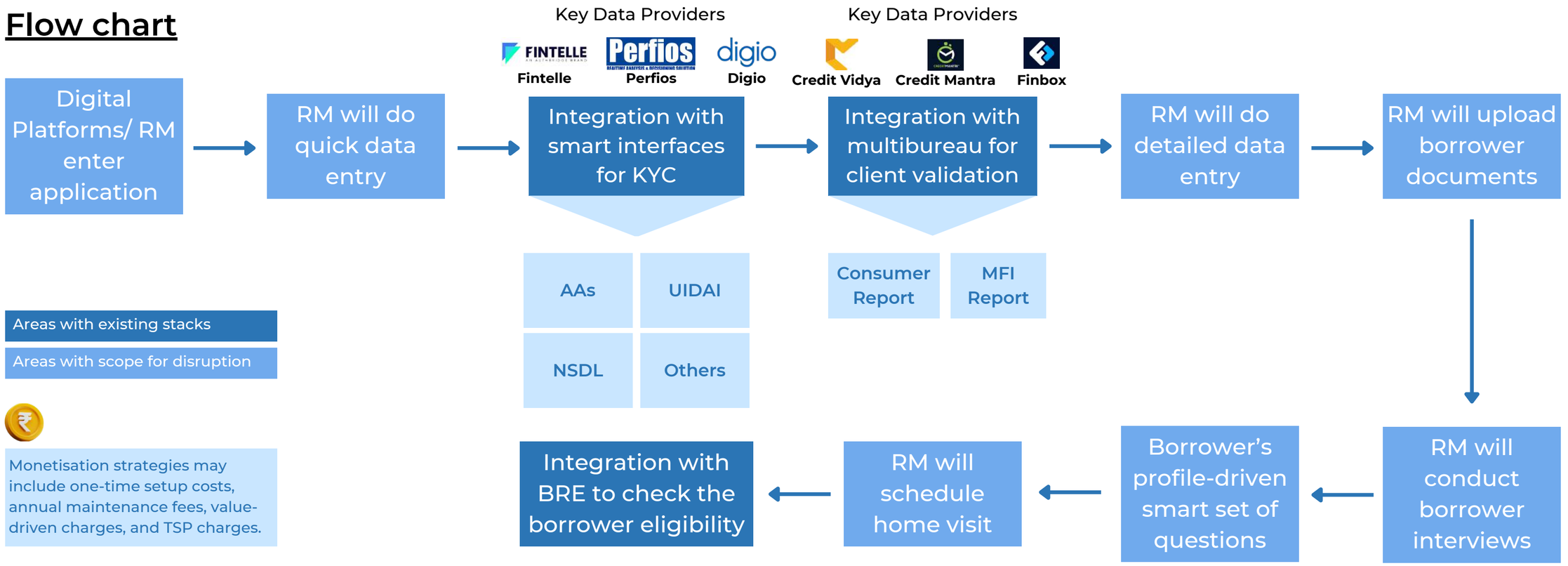
Wipro (NetOxygen LOS)	TCS (BaNCS)	Lentra	Lendingpad	Finflux	Veefin
Streamlines with automation for faster processing, reduced costs, and improved user experience.	Digitizes wholesale and commercial credit and loan origination end-to-end from sourcing to risk management.	Its API-driven modular architecture empowers banks and NBFCs to create custom loan products and enhance user experiences.	A web-based, end-to-end LOS for residential mortgage lending.	Finflux offers a centralized lead generation platform all the way to seamless CART & CRAM analyses.	Veefin uses extensive integrations, AI-powered credit scoring, and robust data accessibility to serve as an end-to-end tool.

Source: Varanium Nexgen, Digital Fifth

5.1B MODULAR LOS SOLUTIONS

With rapid evolution, LOS solutions are now far more adaptive. They cannot only service a large part of the lending workflow through in-built systems, but can interact with external data providers real-time to add more precision to the process.

Flow chart



Key Data Providers

Credit Vidya	Uses alternative data with AI algorithms to enable customer profiling and underwriting for new-to-credit customers.
Perfios	Perfios onboards users better using a comprehensive KYC suite and underwrites better by analysing their financial statements.
Finarkein Analytics	Finarkein assists in customer profiling and underwriting by providing lenders access to real-time data on AA.
Glib	Glib analyses financials statements, verifies customer income information, and analyses spending patterns to aid the lender.
Finbox	Finbox solicits customer data from multiple sources to aid in customer profiling, underwriting, and real-time risk management.

Generative AI Use Cases Across Work Flow

- Gen AI automates data collection effectively, particularly through conversational bots, streamlining initial customer interactions.
- It enhances eKYC, speeding up processes while maintaining precision, and automates interviews seamlessly.
- Gen AI decrypts unstructured banking data, simplifying synthesis and interfacing with frameworks like account aggregators for additional data points, facilitating underwriting across asset classes.
- It tracks borrower behaviour for real-time repayment evaluations, improving transparency with automated reminders.
- For compliance, Gen AI solutions serve as comprehensive documentation repositories, ensuring real-time evaluation and transparency.

Source: Expert Interviews

5.1C LOAN ORIGINATION METHODOLOGY

Comprehensive loan origination systems must integrate various factors and data points for effective underwriting, with distinctions between secured and unsecured lending workflows.

Key Parameters to Consider

Credit History Analysis

These filters refine lead quality for lenders. The 5C framework, highlighted below, is a popular tool:

1. **Character:** Evaluate reputation using references, credit history, etc.
2. **Capacity:** Determine repayment capacity through cash flow, DTI ratio, etc.
3. **Collateral:** Verify adequate assets or security against loans.
4. **Capital:** Assess financial health using statements, outstanding invoices, etc.
5. **Conditions:** Consider socio-economic factors impacting repayment ability.

Credit Risk Analysis

The purpose of credit risk analysis is to analyse the risk factors and minimise losses due to defaults. The computation of credit risk considers the below factors.

1. **Default Probability:** Calculated using similar loans over a definite period and the % of defaults.
2. **Exposure:** It is the amount borrowed by the debtor plus interest payments.
3. **Loss Rate:** It is the lender's projected loss in the event that a borrower triggers an event of default.

Assess Intention to Repay

Lenders try to figure out a person's intentions through personal conversations and document verification. They would consider their cultural makeup and values in their decision to lend.

1. **Interviews:** Lenders interview customers to analyse their behaviour and personalities.
2. **KYC:** A thorough process of analysing and verifying the borrower's details is undertaken.
3. **Psychometrics:** Psychometric tests are standardised assessments that measure personality traits and behaviour patterns.

Secured Lending

- Secured lending relies on assets equal to or exceeding the loan value, ensuring easier disbursement and lower interest rates due to the asset's security.
- Special workflows are required for secured loans, particularly for digitising various asset classes. While digital assets like mutual funds are manageable, physical assets like gold pose challenges, necessitating tailored workflows.

Unsecured Lending

- Unsecured loans rely solely on borrower creditworthiness without collateral, leading to higher interest rates; lenders assess various data points for repayment evaluation.
- Unsecured loans rely on customer-provided information and digital data, facilitating easy digitisation of workflows. Lenders collaborate with various data portals and verification providers for comprehensive coverage.

Key Metrics Analysed

Pull-Through Rate
The pull-through rate indicates workflow efficiency, application quality, customer service, interest rate competitiveness, and customer profile alignment.

Application Approval Rate
This metric sheds light on the quality of the client acquisition and the efficiency of the overall loan application workflow.

Cost Per Unit Originated
Cost per unit originated is a great metric for evaluating the operational efficiency of your loan prospecting by measuring against business expenses.

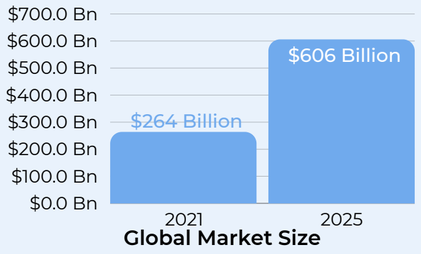
Abandonment Rate
This metric highlights interest rate competitiveness and the lender's ability to close leads.

Source: Expert Interviews

5.1D TRENDS IN LOAN ORIGINATION

With a more open data ecosystem, deeper partnerships, and cutting-edge technology, the loan origination process is becoming far more expansive. This has enabled lenders to find larger audiences and serve with higher precision and efficiency.

Embedded Financing



Global Market Size

Indian Market Size

What Does It Mean?

Simply put, embedded finance is the integration of financial services into traditionally non-financial offerings to attract new customers. This can take the form of BNPL (Buy Now Pay Later), point-of-sale financing, etc.

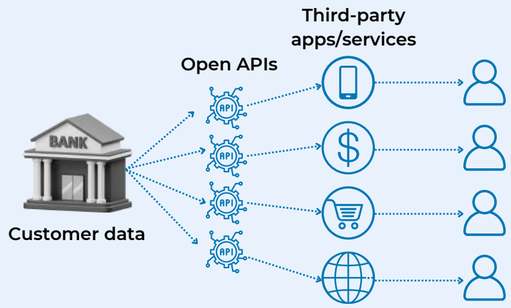
How Does It Benefit Lenders?

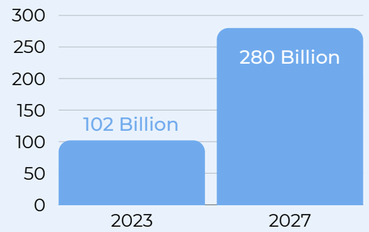
Embedded finance benefits lenders by expanding their customer base through convenient, targeted financial products while streamlining operations and reducing costs through partnerships.

What Is The Growth Opportunity?

In India, 60% of consumers are keen to avail of embedded financing solutions which has led major platforms like Amazon, Flipkart, etc, to adopt modalities like BNPL in their platforms.

AA and Open Banking





Number of Open Banking API Calls Globally

What Does It Mean?

Open Banking unlocks financial data with the user's permission to allow secure sharing with regulated third-party providers. Account aggregators (AA) act as an intermediary by collecting data that hold the customers' financial data and share that with lenders.

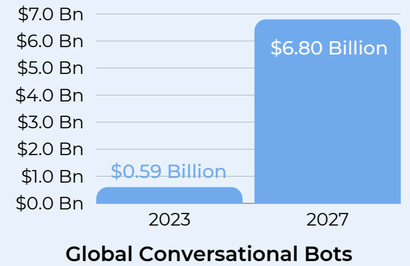
How Does It Benefit Lenders?

Open Banking benefits by offering precise user data more accurate credit assessments. This leads to reduced risk and personalised loan offerings which can attract new customers and improve profitability.

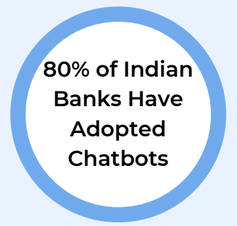
What Is The Growth Opportunity?

In India, the number of successful open banking payments increased by 130% between 2022-2023. Further, 14 AAs operate with a NBFC-AA license.

Gen AI- Powered Conversational Bots



Global Conversational Bots Market in BFSI



What Does It Mean?

These are AI assistants that engage potential borrowers for qualifying leads and pre-filling application while gathering key information to streamline the process and assess them. The injunction of generative AI will make these conversations more authentic for customers.

How Does It Benefit Lenders?

Conversational bots benefit by capturing more qualified leads 24/7 and automating key steps in the process. This translates to increased loan applications, faster processing times, and lower operational costs.

What Is The Growth Opportunity?

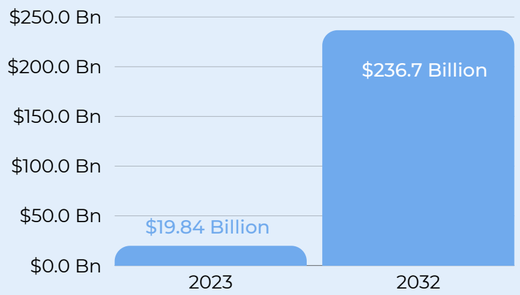
While this market grows at an 84% CAGR globally (Statista), 80% of banks have adopted them in India.

Source: IBEF, EY, Statista, RBI

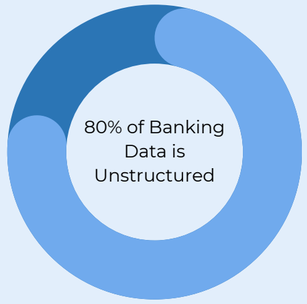
5.1E WHITESPACES IN LOAN ORIGINATION

To unlock the potential of this market, lenders need to not only make use of new technologies and serve new audience bases better, but also look to develop new solutions that can make use of these tailwinds to become large outcomes.

AI-Led Customer Profiling



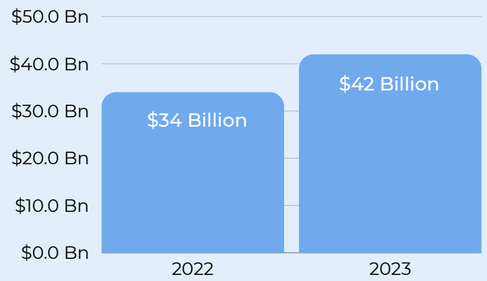
Global Market for AI in Banking



Growth Opportunity

As lending institutions would look to optimise their application approval rate and CAC specifically, they would look to integrate AI modules into their screening and prospecting tools. This will allow them to source user profiles that match their thesis and evaluate them more comprehensively and quickly.

Microfinancing

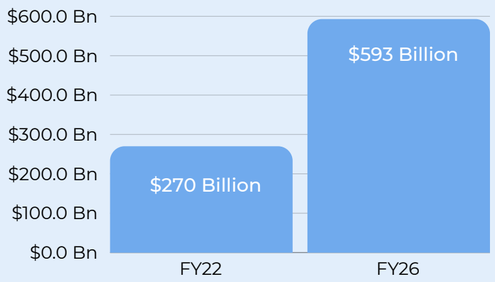


Total Microfinancing Portfolio India

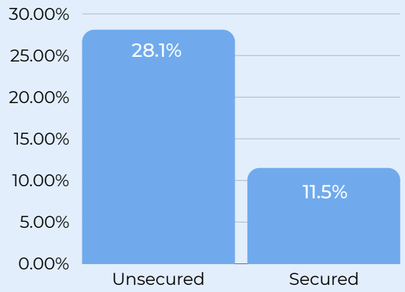
Growth Opportunity

For a lot of new-to-credit customers, microfinancing can be their first encounter with a lender. With over 66 million unique borrowers in this category, this is a lucrative market for lenders. Having a suite of comprehensive microfinancing offerings can enable lenders to acquire new users early in their lifecycle and retain them as loyal borrowers.

Secured Lending Profiling in Different Asset Classes



Digital Lending Market Size India

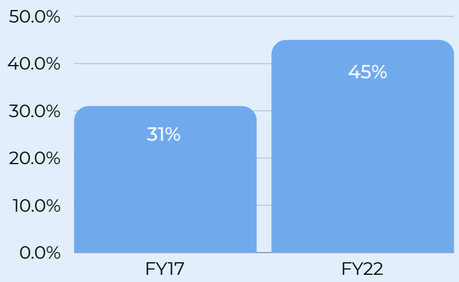


Growth Rate in 2023

Growth Opportunity

Digital lending is one of the fastest growing markets in India. While unsecured has been the greatest beneficiary of this, growth in secured lending has been slower due to difficulty in building workflows for different asset classes. Gen AI can be a big help in this.

Customised Modules for New-To-Credit Segment



Growth of NTC Customers in the 18-30 Age Group

Growth Opportunity

With the rise of digital lending and the democratisation of user data, we have seen significant growth in the new-to-credit segment, particularly amongst Gen Zs. To familiarise them with the ecosystem, it is important to create new modules catered towards them.

Source: Polaris Research, Fintech Futures, IBEF, PIB, Statista, RBI, MFIN

5.2A LOAN MANAGEMENT SYSTEM (LMS)

A Loan Management System empowers lenders by automating and streamlining the entire loan life cycle. LMS systems cover various processes including loan servicing, reporting, customer care, syndication and customer monitoring.

Processes LMS Solutions Serve

Application Processing	After the loan has been underwritten by the lender, the data of the application is fed to the LMS. This results in the creation of the borrower's profile and other important information in the platform which acts as a centralized server.
Loan Servicing	These systems help lenders perform complex computations on taxations, interest rates, track monthly repayments, generate monthly statements, and more. Modern LMS solutions can empower lending operations covering different types of loans.
Debt Collections	LMS platforms enable lenders to track repayments, overdue amounts, and late fees. They can also check borrower history and arrange for new payment terms. They also aid relationship managers and other staff in reviewing team-to-borrower communication throughout the customer journey.
Portfolio Management	These systems enable comprehensive reporting through incisive and personalized analytics tools that help lenders gain valuable insights into their loan portfolio's performance, delinquency rates, and profitability. These insights support data-driven decision-making.
Reporting	LMS platforms also automate the storage of important documents for compliance and taxation purposes. They also tend to provide cloud-based storage options that make for easier auditing and document retrieval.

Evolution of LMS

API-Driven Architecture	Automated Processes	Digital Banking Enabled	Co-Lending Frameworks	Deferred Collections
While the preceding technology tended to be quite monolithic, newer solutions, especially after the pandemic, focus on providing a modular stack of integrations that allow lenders to customize their software. With cloud computing, they have become more efficient.	While earlier LMS solutions were capable of maintaining an oversight over the different lending operations, manpower was still needed to execute certain tasks. Newer LMS solutions are capable of robotic process automation (RPA) which can process mortgages and other loans 80% faster.	India, formerly reliant on cash transactions, swiftly transitioned to digital payments post-pandemic, recording over 100 billion UPI transactions in 2023. LMS portals were revamped to facilitate digital banking, ensuring a seamless process for customers.	In FY23, India's bank co-lending portfolio reached $3.04 billion, quadrupling from FY22. With the surge in digital lending and fintechs, LMS solutions adapted to handle their workflows, including splitting loan servicing across multiple entities.	With the rise of digital-native borrowers and business models like BNPL, LMS solutions have had to become more flexible to allow the structuring of more relaxed collection plans. This can allow lenders to attract the new-to-credit (NTC) market as well.

Key Loan Management Systems

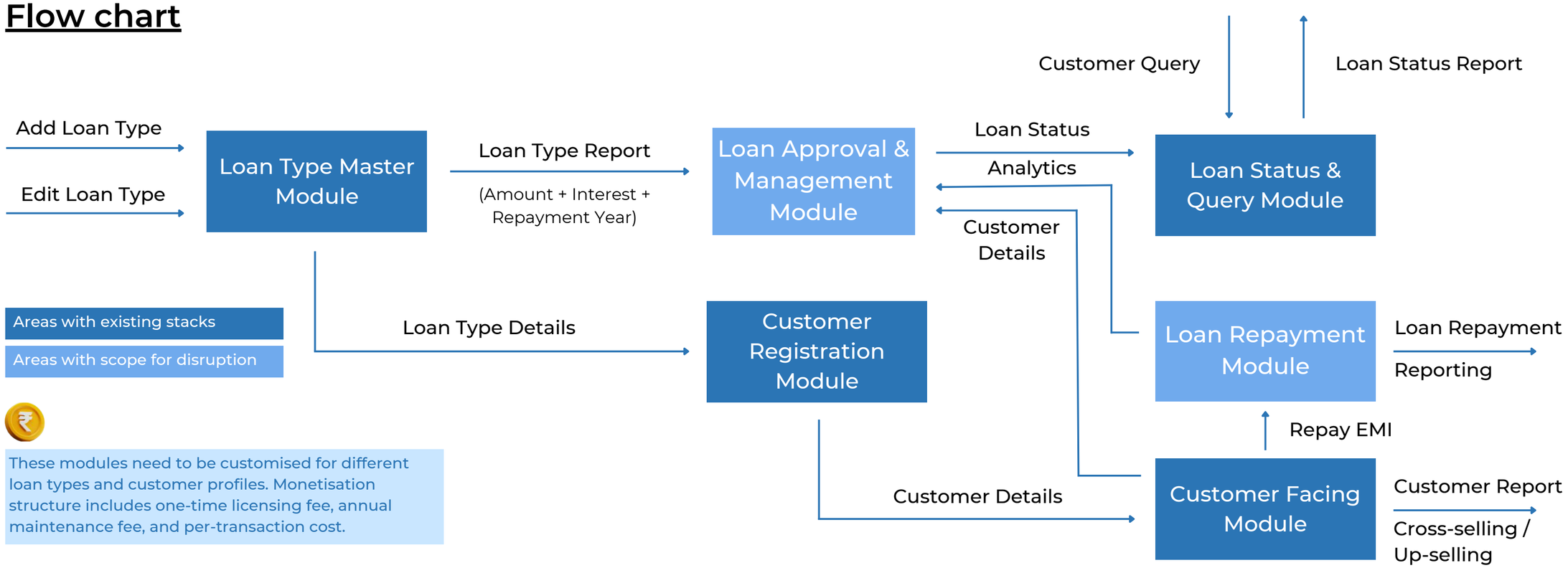
Margrill	Cloudbankin	Finnone Neo	LoanPro	Finflux	TurnKey Lender
A cloud-based solution, which assists lenders with servicing multiple loan types with support for automation and complex computations.	Offers easily configurable modules-driven solution for all types of loans allowing lenders to manage their portfolio in just a single platform.	An end-to-end lending suite that digitizes the complete lending lifecycle with smarter and faster credit decisions driven by 460+ APIs.	Increase operational efficiency, simplify the loan lifecycle, and create any number of loan types using one comprehensive LMS platform.	Allows lenders to design customised lending products, leverage an API-driven architecture to collaborate and remain compliant with guidelines.	Automate all elements of the loan cycle from loan application, underwriting, servicing and collection to reporting using a customisable solution.

Source: 1rivet, Recordpay, Economic Times

5.2B MODULAR LMS SOLUTIONS

With greater modularity and an API-drive architecture, LMS can be tailor-made to fit the lender's needs. The introduction of generative AI can amplify their abilities considerably. With the rise of co-lending and the new FLDG guidelines, these solutions will need to be more comprehensive to accommodate multiple parties and types of loans.

Flow chart



These modules need to be customised for different loan types and customer profiles. Monetisation structure includes one-time licensing fee, annual maintenance fee, and per-transaction cost.

Key Data Providers

Credit Mantri	Credit Mantri enables lenders to have greater insight into borrowers by leveraging the power of alternate data.
IDfy	Idfy mitigates the risk of fraud using tech-powered products and solutions for KYC, and digital onboarding.
Decentro	Decentro offers white-label solutions for payments, seamless KYC, and AI-powered compliant debt collections for lenders.
PiChain	PiChain uses AI and blockchain along with deep domain expertise to ensure sustainable compliance management.
Razorpay	Razorpay is India's first full-stack financial solutions company which can be leveraged by lenders for building a digital repayment stack.

Generative AI Use Cases Across Work Flow

- Generative AI could be used by lenders alongside account aggregators (AAs) for tracking other loan products availed by users in the market and create a comprehensive customer profile.
- The technology can also be used to create synthetic data sets that simulate various economic scenarios for stress-testing the portfolio for adverse situations.
- Generative AI can analyse borrower behaviour and identify an increased risk of delinquency which can be pivotal in risk management and creating more flexible repayment plans for those borrowers.
- AI can also automatically segment the portfolio into cohorts based on risk profiles which makes performance monitoring more intuitive for lenders.

Source: Expert Interviews, Antino

5.2C LOAN MANAGEMENT LANDSCAPE

As the effectiveness of LMS solutions has increased, so has the requirements from lenders. With new-age solutions, lenders look for comprehensive solutions which can offer greater flexibility.

Key Checkboxes for LMS Modules

Loan Servicing

- ☑ Collateral Registry
- ☑ Collateral Valuation
- ☑ Amortization Schedules
- ☑ Taxation Calculation
- ☑ Periodic LTV Checks

Collection Management

- ☑ Borrower Categorisation
- ☑ Borrower Communication
- ☑ Case Prioritisation
- ☑ Workflows for Collections
- ☑ Recovery Automation

Integrations

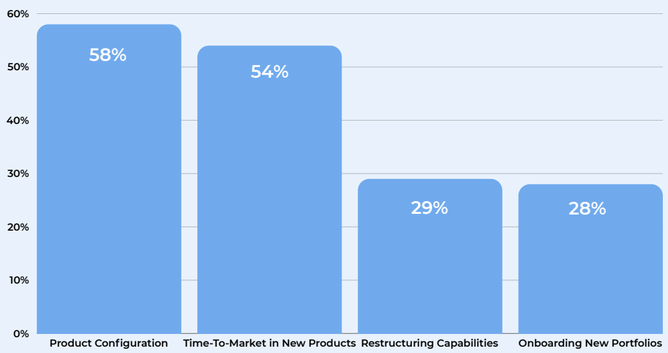
- ☑ Payment Gateways
- ☑ IVR Telephony
- ☑ Email Gateways
- ☑ Third-party Applications
- ☑ Internal Applications

Performance Management

- ☑ Default Customer Analysis
- ☑ Smart Views
- ☑ Performance Tracking
- ☑ Dynamic Micro/Macro reports

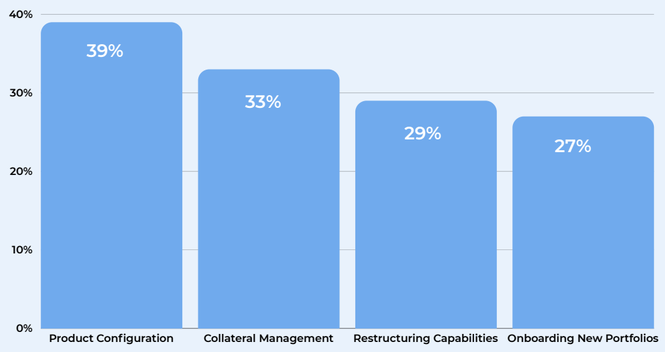
Key Checkboxes for LMS

Key Challenges of LMS



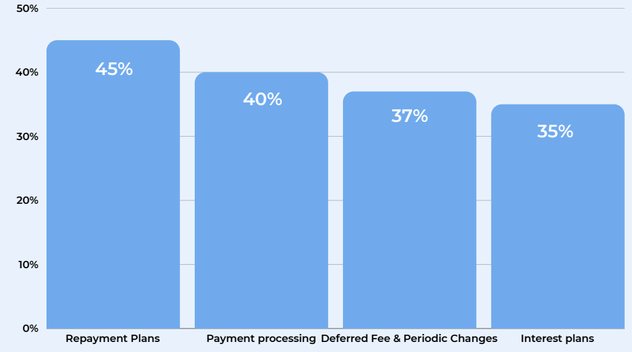
- The biggest problem statement for lenders in LMS is configuration as that hinders their ability to create personalized loan products.
- Time-to-market follows as a close second which indicates scope for greater automation in both product creation and market release.

Most Desired Features of LMS



- Lenders demand more flexible LMS platforms for personalized offerings due to democratized user data.
- Efficient workflows for secured lending, notably collateral management, are still sought after despite advancements in unsecured lending.

Areas Where Tech Flexibility is Needed



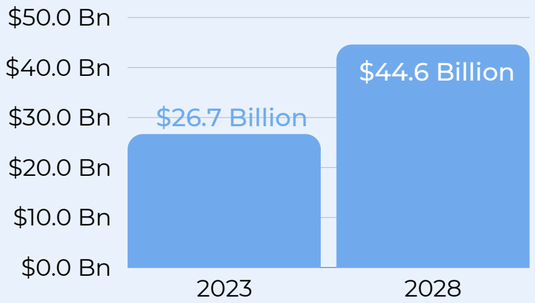
- With the onset of structured repayment plans and deferred repayment plans, lenders are looking to offer greater flexibility to borrowers.
- As digital transactions have increased significantly in volume, lenders want more comprehensive payment modules.

Source: Leadsquared, Qualco

5.2D TRENDS IN LOAN MANAGEMENT SYSTEMS

To account for a rapidly evolving landscape, LMS are evolving to accommodate cutting-edge technology to increase effectiveness across the board for lenders and offer better products to borrowers.

AI & ML-Based Credit Scoring



Global Credit Scoring Market Size

Benefits of using AI for checking creditworthiness

What Does It Mean?

Banks calculate portfolio at risk and the potential of default using a multitude of static variables. ML and AI allow banks not just real-time insight into the borrowers' actions, but also faster and more precise synthesis of these data points.

How Does It Benefit Lenders?

Using AI and ML can not only allow lenders to track their credit risk at a real-time basis but, this technology can also allow banks to factor in more dynamic variables in their calculation which can aid them in portfolio management and credit risk mitigation.

What Is The Growth Opportunity?

Growing at a CAGR of 67.2%, the credit-scoring market is expected to reach $44.6 billion by 2028. As one-fourth of borrowers in India prefer online lending channels, and the tally of NTC customers reaches 400 million, AI and ML will find increased use for unlocking these markets and tracking their behavior for more accurate forecasts.

Self-Service Portals

Self-service Adoption Growth in Financial Services Users

Citibank's Case Study After Using Self-Service Portals

What Does It Mean?

Self-service portals provide borrowers with a centralized location from where they can manage their borrowings. Lenders are now working to build such portals to allow borrowers additional flexibility digitally. They also serve as another use case for AI-powered chatbots.

How Does It Benefit Lenders?

Self-service portals not only allow lenders to reduce their manpower needs but also enables greater satisfaction amongst customers. Since modern LMS solutions can enable such portals, they greatly boost customer engagement.

What Is The Growth Opportunity?

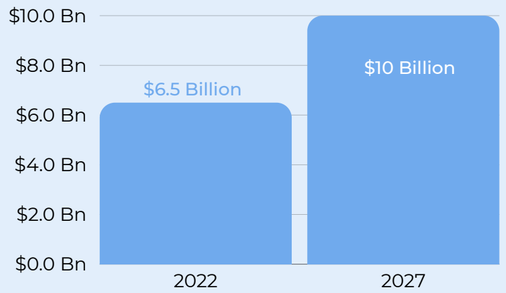
As per Zendesk, financial services users' adoption of self-service portals has increased by 5.4x in 2023. As lending becomes increasingly digital, this trend is expected to grow.

Source: Juniper Research, Zendesk, Matellio

5.2E WHITESPACES IN LOAN MANAGEMENT SYSTEMS

While there has been considerable evolution for LMS platforms over the past few years, there are areas that need to be addressed to offer a more sophisticated suite of offerings.

AI-Powered Fraud Detection



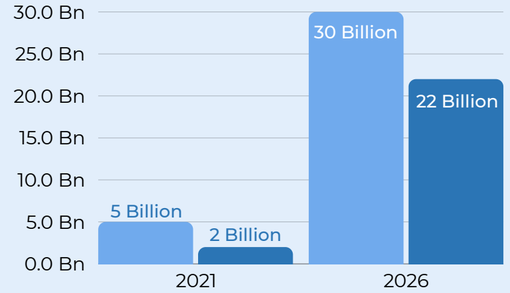
Business Spend on AI-enabled Financial Fraud Detection

PayPal Case Study After Using AI for Fraud Detection

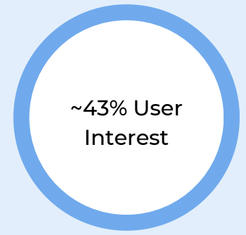
Growth Opportunity

Along with prospecting, lenders are using AI to screen out fraudulent applications and transactions. AI can not only detect irregularities more accurately, but can also do so at a much greater while decreasing with underlying cost. Therefore, lenders are looking to incorporate such modules in their LMS platforms.

Flexible Repayment Architecture



Retail BNPL Users in India

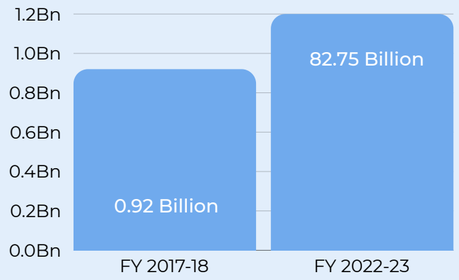


Market Demand for Banks' BNPL Products

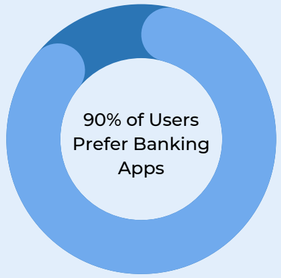
Growth Opportunity

As lenders are looking to attract digitally native borrowers and the new-to-credit market, they are looking to offer more flexible repayment plans to them. Since such users are typically of younger generations, they are naturally attracted to them. Lenders are looking to create customized stacks that can accommodate such products.

Mobile Optimisation



UPI Transaction Processed across India

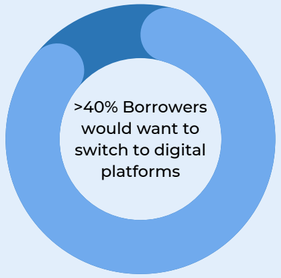


Market Demand

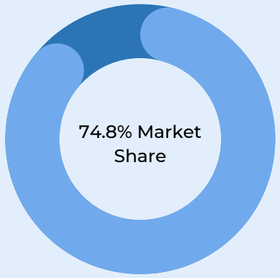
Growth Opportunity

Married with the rise of digital lending products, there has been a suite of offerings targeted specifically for mobile users. With India having over 659 million smartphone users, lenders are looking to create customized experiences to target mobile customers and offer them greater flexibility in managing their borrowing via those devices.

Secured Loan Servicing Stacks for Different Asset Classes



Changing User Preferences Amongst Borrowers



Secured Loans Market Share in Retail Lending

Growth Opportunity

As the borrower preferences have shifted, there is a growing demand for completely digital borrowing experiences. To accommodate this market, LMS platforms would need to incorporate modules that can facilitate secured lending at a greater scale through the valuation of different assets, default treatment, repossession, liquidation, etc. digitally.

Source: Juniper Research, Nvidia, Statista, PYMENTS, PIB, Business of Apps

5.3A DEBT COLLECTION SOLUTIONS

A debt collection software is a tool for streamlining and automating the collection process to increase collections and mitigate credit risk through a panoramic view of the collections process.

Processes Debt Collection Solutions Serve

Account / Data Management	Debt collection software act as a central hub for collections by storing and organizing debtor data (names, balances, history, etc.) and automatically updating accounts with new information for efficient tracking and management by lenders.
Collection Management	These systems organize the collection process by creating automated workflows, monitoring accounts to track repayment possibilities and evaluate credit risk, and automatically assigning cases to debt collection agents for expediting the process.
Borrower Communication	Debt collection software offers multi-channel communication tools with pre-built templates and automated scheduling. This allows personalized outreach at scale.
Payment Processing	Such systems integrate with secure payment gateways, enabling debtors to make online payments directly through the platform. This streamlines transactions, reduces manual processing, and provides real-time payment confirmation.
Reporting	Debt collection software analyzes vast data on debtor behavior and collection efforts, generating insights through advanced analytics that identify trends and measure collection effectiveness. It also tracks communication and actions to ensure adherence to compliance regulations.

Key Debt Collection Solutions

Credgenics	DPDzero	leadsquared	datacultr	Prodigal	CREDITAS
A SaaS-based platform that provides multi-channel digital communications, AI powered predictor models, comprehensive dashboards and deep analytical models amongst other features.	A debt collection platform, managing from data automation to recovery, by prioritising borrower relationships and compliance through their own engine.	Leadsquared helps lenders manage the end-to-end field collections lifecycle with advanced automation, guided actions and direct connect to fraud control teams.	A risk management and digital debt collection platform, enabling lenders to reduce risk on 'new to credit' customers by binding the loan to their smartphones.	Optimises payments with targeted digital engagement. Prioritize accounts based on fresh information. Transform agent performance across the board.	Provides lending institutions around the world with tech-based debt collections solutions to help them unlock efficiencies, enhance the brand experience, improve recovery success and reduce cost.

Processes Fraud and Risk Management Tools Serve

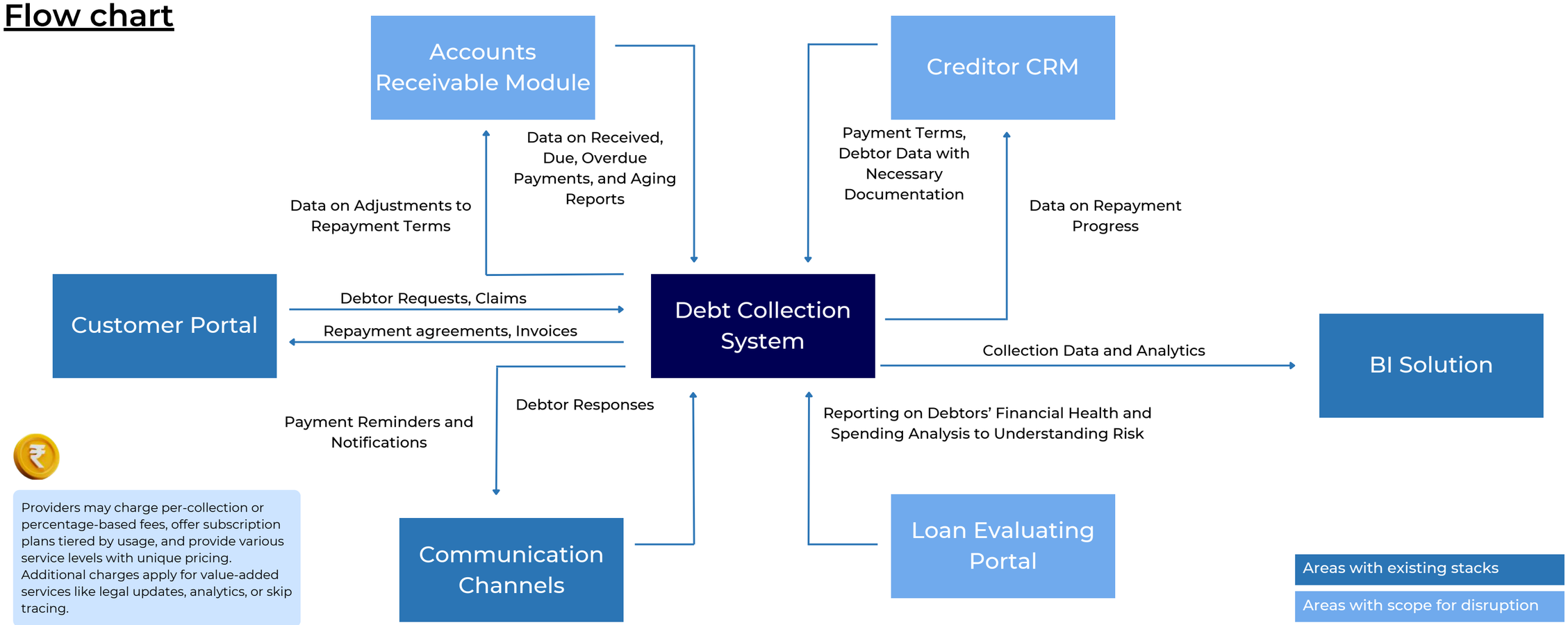
Risk Governance	FRM tools allow lenders to finetune the risk parameters and overall risk approach they would be looking to adopt in their portfolio. This can not only automate parts of the lending and risk management processes, but also allow the lender to alter their risk approach from one centralised console.
Application Verification	FRM tools integrate with several data repositories to vet borrowers' applications. This not only helps evaluate the creditworthiness of applications, but also verify their authenticity through document verification.
Portfolio Tracking	Working with alternate data providers, these tools can track borrowers' risk profile and their behavior on a real-time basis. They can also recognise behavioral patterns in the borrowers to detect any anomalies and flag them to the borrower. This has a greater use case in credit cards.
Case Management and Resolution	In addition to identifying risks, FRM tools also work with fraud analysts to manage their workloads and assign them cases suited to them. This optimised their efficiency. They also offer direct ways of communicating with borrowers-at-risk and resolving situations.
Reporting	As a result of monitoring both the portfolio and the inflow of applications, FRM tools are able to provide precise insights into both the nature of applications received by the lender and also the core characteristics of their portfolio. This helps lenders manage their operations better.

Source: Expert Interviews

5.3B MODULAR DEBT COLLECTION SOLUTIONS

As the scope of processes undertaken by debt collection solutions has increased, lenders are looking to create more personalized workflows through specific integrations. As the penetration of generative AI across these workflows increases, their intuitiveness and precision are bound to increase.

Flow chart



Key Integrations for Debt Collections

tcn	TCN offers a robust cloud call center technology in the industry to boost revenue, recovery rates and compliance for lenders.
LIVEVOX	Livevox offers a cloud-powered omnichannel collections platform that is easy to use and optimise.
Five9	Five9 helps contact centers automate debt recovery and optimize agent effectiveness while lowering operational costs
GENESYS	Genesys helps manage manage account assignment, segmentation and exception handling for the entire lifecycle including collections, litigation or recovery.

Key Integrations for FRM

TransUnion	TransUnion has tools like TruValidate and TruVision which power identity verification and credit risk management respectively
Kount An Equifax Company	Kount offers a complete approach to trust and safety with tools for payments fraud, identity verification, and compliance.
squirro	Squirro helps companies to identify and evaluate risks while minimizing manual and time-consuming research.
actico	Actico allows lenders to analyze and monitor credit risks, automate loan and decision-making processes

Source: Expert Interviews

5.3C DEBT COLLECTION SOLUTIONS LANDSCAPE

Since the services covered by debt management solutions has increased over the past few years, the checklist for ideal solutions has gotten more complex. As AI percolates to these solutions, its use-cases are starting to emerge.

Key Checkboxes for Debt Collection Solutions

Borrower Management

- Panoramic Borrower Profile
- Borrower Categorisation
- Borrower Activity Tracking
- Communication Log

User Management

- Contact Centres
- Field Agents
- Support Team
- Legal Team
- Fraud Control Team

Automation

- Workflow Automation
- Recovery Automation
- Case Prioritisation
- Agent Day Planning
- Communication Automation

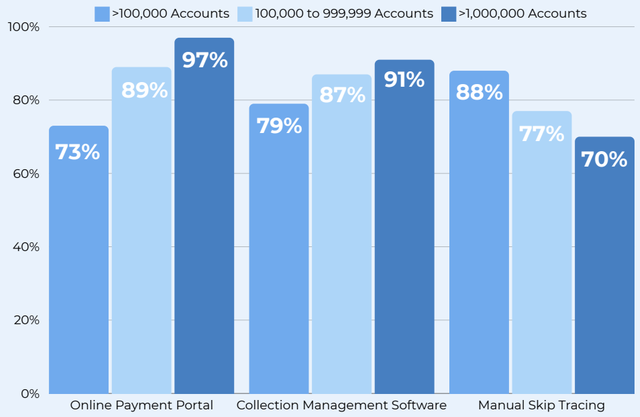
Integrations

- Payment Gateways
- IVR Telephony
- Email Gateways
- Internal Applications
- Third-party Applications

Analytics & Reporting

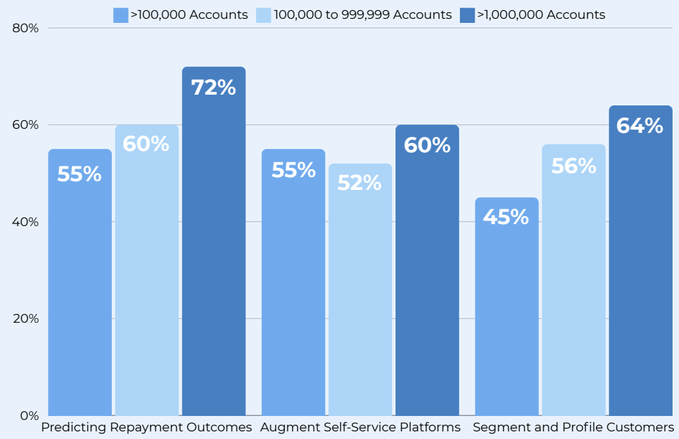
- Smart Views Dashboard
- Shareable Reports
- Default Customer Analysis
- Collections Funnel
- Performance Tracking
- Progressive Collection Efficiency

What Tools Are Companies Using?



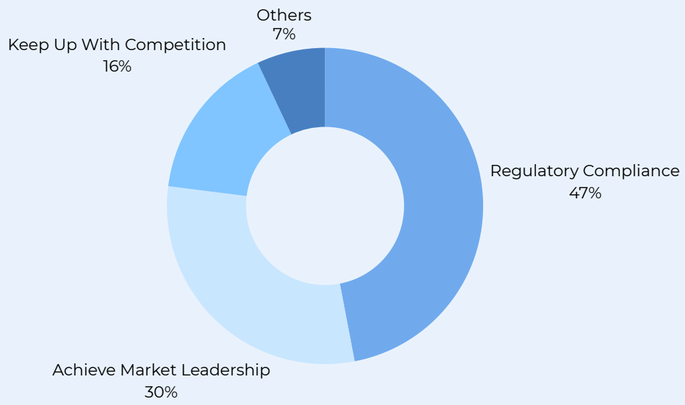
As online transactions become more popular, companies, especially those with fewer accounts, are relying on online platforms for collections. In contrast, larger companies prefer specialized collection management software for its added functionality and customization options.

How are Companies Using AI?



Collection companies leverage AI to analyze big data rapidly and predict repayment outcomes in their portfolios efficiently. Lenders are also adopting self-service platforms to enhance automation and operational efficiency.

What is Driving Tech Investment?



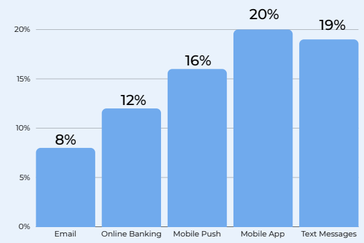
New technology serves as a watchtower, ensuring oversight and auditability of operations, particularly in compliance. Optimizing collection rates and net interest margins drives lenders to adopt market-leading tech.

Source: Leadsquared, TransUnion

5.3D TRENDS IN DEBT COLLECTION SOLUTIONS

As customer behavior and the enabling technology continue to evolve at break-neck pace, these systems are also undergoing rapid evolutions to provide more flexibility to lenders and more ease to borrowers.

Omnichannel Debt Collections



Efficacy of Different Communication Channels in Receiving Full Payment

Only 4% Debtors Are Reached in The First Attempt

Benefits of using AI for checking creditworthiness

What Does It Mean?

Omnichannel debt collection utilizes various communication channels (email, text, online portals) to reach debtors, leveraging data to personalize outreach and automate interactions for efficient recovery.

How Does It Benefit Lenders?

By using debtor data to predicting the most effective communications channel, lenders are looking to increase successful contacts which is the biggest problem statement in collections (only 4% debtors are reached in the first attempt).

What Is The Growth Opportunity?

Lenders are shifting towards digital-centric approaches, recognizing the higher success rates of digital channels compared to traditional ones, which typically achieve only a 12% successful contact rate.

Dynamic Risk Monitoring

20% Increase in Fraud Detection in 2023

BNY Mellon Case Study

$108 Billion in Credit Loss in 2023

Credit Loss Globally (2023)

What Does It Mean?

As access to real-time customer data is democratized, lenders use it to observe their borrowers on a real-time basis to generate precise repayment probabilities. This greatly boosts the risk management process.

How Does It Benefit Lenders?

Lenders are able to use this added access to analyze borrower behavior with greater precision which makes the entire process more dynamic and transparent. They are also able to mitigate emerging risks and proactively reach borrowers-at-risk.

What Is The Growth Opportunity?

As the global credit loss reached $108 billion in 2023, lenders are looking for ways that can add more clarity to the cycle for them and identify possible risks as soon as possible.

Auto Debit

1351 Banks Live on eNach

The Rising Popularity of eNach Amongst Banks

117.6 Billion UPI Transactions IN 2023

Total Transactions Processed by UPI in 2023

What Does It Mean?

Autodebit in collections allows pre-authorized, automatic deductions from a debtor's account on a scheduled basis. This streamlines payments, reduces delinquencies, and integrates with collection software for real-time updates on received funds.

How Does It Benefit Lenders?

Autodebit in collections minimizes manual payment processing, eliminates late fees due to missed payments, and ensures predictable cash flow for lenders through automated deductions directly from debtor accounts.

What Is The Growth Opportunity?

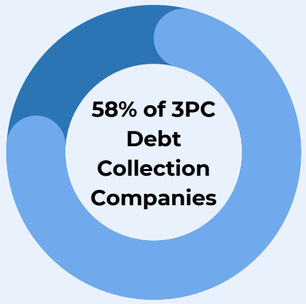
As the transactions processed on UPI exceeded 100 billion in 2023, users around the country have become comfortable with digital payments. Banks and other lenders are looking to make use of this familiarity to reduce their credit risk.

Source: Mckinsey, TransUnion, Nvidia, S&P Global, eNach, Economic Times

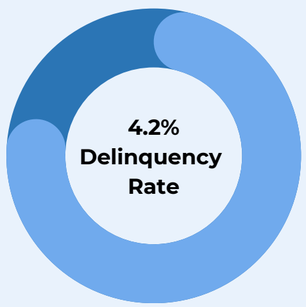
5.3E WHITESPACES IN DEBT COLLECTION SYSTEMS

To meet the problem statements associated with traditional debt collection systems and the emergence of new areas where technology can cover market gaps, these platforms need to increase in operational capabilities and features.

Predictive Delinquency Analysis



Debt Collection Companies Looking to Use AI for Predicting Payment Outcomes



Delinquency in the Digital Lending Sector of India

Growth Opportunity

The biggest use-case of AI in debt collections is in its ability to identify borrower patterns and predict delinquency ahead of time. As the delinquency rate in digital lending in India reaches 4.2% (primarily driven by micro-loans and the new-to-credit segment), lenders can integrated AI to foresee borrower behavior ahead of time.

Autonomous Collection Bots

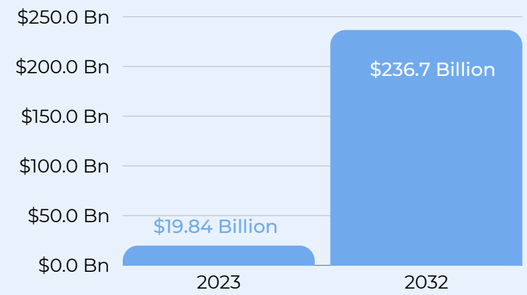
Cost Benefit of Using Chatbots in Banking

Effectiveness of Traditional Communication Methods in Debt Collection (Phone, Voicemail and Letters)

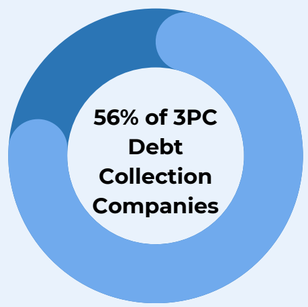
Growth Opportunity

Along with the increase in self-service portals, the BFSI sector is looking towards chatbots to provide 24/7 customer service to their users. This technology can be used in debt collections as well to personalize interactions to a greater degree. In addition operational efficiency, these bots can also have more empathetic discussions with borrowers which can enhance collection rates.

Borrower Cohortisation



Global Market for AI in Banking



Debt Collection Companies Looking to Use AI for Customer Segmentation

Growth Opportunity

Banks and lenders as a whole are looking to increase investments into AI for reducing their credit loss and making their operations more efficient. Better user segmentation can not only increase the lucrativeness of their products through higher personalization, but also boost the effectiveness of their risk management processes through more clarity on the borrower profile and the risk associated with their borrowings. They can also create personalized collection plans.

Source: TransUnion, SIDBI, Juniper Research, McKinsey, Equifax, Fintech Association For Consumer Empowerment

5.4A CREDIT CARD MANAGEMENT SYSTEM (CCMS)

CCMS empowers banks and financial institutions to provide credit card services, with modules facilitating customer approval, card issuance, personalized offers, purchase management, and payment handling.

Process of Creating a Credit Card

Application via LOS	The process begins when a customer applies for a credit card through the LOS. The LOS captures the application details and performs initial checks, like eligibility criteria and credit checks using Aadhaar and PAN.
Approval and Account Setup in LMS	Once the application passes the initial checks, the LMS takes over for credit risk assessment and approval. Upon approval, the LMS helps set up the credit account with e-KYC. For secured cards, digital lien marking needs to happen.
Card Details Generation in CCMS	The CCMS generates the credit card details, including the card number, expiry date, and CVV and is physically produced and personalised with the customer's name and card details. Online form factors exist today.
Fraud Checks with FRM	Before the card is issued, the Fraud Risk Management (FRM) system assesses the application and the customer for potential fraud risks to ensure the security of the card issuance process.
Card Issuance and Dispatch	The CCMS approves and coordinates card issuance, including printing and dispatching the physical card to customers. Cards are typically sent inactive for security and need activation. User-friendly experience layers, like mobile apps or customer portals, aid in activation, PIN setup, and card management, often integrated with back-office reporting in modern systems.

Process of Making a Transaction via Credit Card

Transaction Initiation	When a customer uses the card for a transaction, the merchant's mPOS system or online payment gateway captures the card details and initiates the transaction. The transaction gets routed to ACS through network routes, the ACS validates the OTP and network sends a signal to card processor.
Authorisation by CCMs	The CCMS receives the transaction request, verifies the card details (switch integration configures the switch to route transactions based on BINs (Bank Identification Number) using protocols like ISO 8583 for messaging), checks for sufficient credit limit, and then either authorises or declines the transaction.
Fraud Monitoring by FRM	Concurrently, the FRM system evaluates the transaction for potential fraud based on various parameters like transaction amount, location, and customer's spending patterns. New age systems can have different merchant-level controls.
Transaction Posting & Account Update in LMS	Upon successful authorisation, the transaction is posted to the customer's account in the LMS, updating the account balance and available credit.

Process of Collecting Payement via Credit Card

Statement Generation by CCMS	The CCMS issues monthly statements for cardholders, detailing transactions, dues, and minimum payments, which can be divided into multiple installments. It informs the bank of collection amounts, managed through a pool account across networks and deducted upon settlement.
Payment Processing & Account Update in LMS	The customer makes a payment, which can be processed through various channels like net banking, UPI, or direct bank transfers and further the payment is updated in the customer's account in the LMS, reducing the outstanding balance and updating the available credit.
Collections	If payments are overdue, the Collections system gets involved, using data from the Customer Management System (CMS) to manage communication and recovery processes effectively.
Reporting and Analytics	The data is collected and analysed for reporting, insights, and continuous improvement of the credit card program, enhancing customer experience and operational efficiency. It also gives information to CIBIL for the customer’s credit score.

Source: PISMO Blog

5.4B EVOLUTION OF CREDIT CARD MANAGEMENT SYSTEM (CCMS)

The transition from traditional to next-gen platforms, today's CCMS solutions seamlessly integrate with external data ecosystems in real-time, enhancing precision and adaptability across the lending landscape.

Evolution of CCMS

Pre 2010

- Magnetic stripe technology standard for data storage.
- Basic fraud detection algorithms with limited predictive capabilities.
- Traditional banking infrastructure with proprietary systems for credit card management.
- Initial introduction of EMV (Europay, Mastercard, and Visa) chip technology for enhanced security.
- Use of batch processing for transaction settlements.

2010-2015

- Widespread adoption of EMV chip technology, reducing counterfeit card fraud.
- Introduction of PCI DSS (Payment Card Industry Data Security Standard) compliance for enhanced security measures.
- Development of proprietary APIs by banks for integration with payment gateways and merchant systems.
- Initial rollouts of contactless payment technologies, such as NFC (Near Field Communication).
- Growth of online fraud detection services like Falcon and integration with CCMS for real-time fraud monitoring.

Post 2015

- Rapid API adoption for seamless integration between CCMS, payment gateways, and fintech.
- Introduction of tokenization and encryption for secure data transmission.
- Emergence of open banking standards for secure data sharing.
- Widespread use of AI in fraud detection for predictive analytics.
- Integration of biometric authentication for secure verification.
- Expansion of mobile wallet and digital payment services like Apple Pay, Google Pay, BNPL, and UPI for contactless payments.

Key Credit Card Management Systems

FIS	Fiserv	TSYS	PISMO	M2P	Hyperface	Vegapay
Provides comprehensive card management solutions encompassing debit, credit, and ATM services, integrating card processing, risk management, digital enablement, and loyalty programs to enhance financial institutions' card offerings.	Provides integrated payment processing and card management solutions across global financial ecosystems.	Delivers end-to-end payment solutions including card processing, authorisation, settlement, and fraud management, with a focus on enhancing customer experience and operational efficiency for financial institutions globally.	Offers a cloud-native platform with 100% API-based architecture for issuing credit, debit, and prepaid cards, featuring flexible innovation, quick scaling, live stream data analytics, and a SaaS model ensuring continuous technology updates.	Offers a platform enabling rapid deployment of diverse card programs with integrated modules for KYC, onboarding, transaction processing, and customer engagement, tailored for agility and scalability in the credit card domain.	Provides a pre-integrated Credit Cards-as-a-Service platform with a focus on co-branded credit card stacks, enabling rapid program launches with features like intuitive onboarding journeys, high power customer engagement, and comprehensive card lifecycle management.	Plug and play solution for FIs and Fintechs to start off their lending business by integrating with existing APIs which cover end-to-end lending lifecycle, co-branded cards and multi currency cards.

Legacy players like FIS, Fiserv and TSYS lack the flexibility and innovation that new-age players offer. They also have longer timelines to go live and typically provide just a core CCMS without an added experience layer. New age platforms are differentiated on the basis of depth of product offering, time to integrate and stability of product.

Source: Razorpay, M2P Blog

5.4C CCMS PERFORMANCE METRICS

Comprehensive CCMS must assimilate a myriad of factors and data inputs for proficient card management, with nuances in workflows between different card services.

Key Parameters to Consider for BSFIs

Compliances and Security Standards

Rigorous examination of adherence to comply to regulatory frameworks (PCI DSS, GDPR, local banking regulations) and implementation of cryptographic protocols for data integrity and confidentiality; assessment of compliance certifications and meet reporting requirments.

Integration Capabilities with Banking Ecosystem

Detailed analysis of API/SDK documentation, compatibility with existing banking policies, payment gateways, and third-party services; pilot integration projects to evaluate interoperability, data exchange efficiency, and middleware requirements.

Scalability and Performance

Evaluation of architectural design for dynamic resource allocation, stress testing under peak loads, analysis of cloud-based solutions and microservice architecture, and integration capabilities with banking systems to ensure scalability and future-proofing for business growth.

Fraud Detection and Risk Management

Assessment of fraud detection algorithms' sophistication, including ML and AI capabilities for real-time pattern recognition; evaluation of integration with external fraud databases and adaptability of fraud models to emerging threats.

Customer Experience and Personalisation

Examination of user interface customisation options, real-time notification systems, and rewards management features; user journey simulations and analysis of customer feedback on usability and engagement metrics.

Stability and No Downtime

>99.9% uptime guarantee, ensuring continuous service availability. Additionally, the system must exhibit minimal latency in transaction processing, supporting real-time authorisation and settlement to enhance user experience and operational efficiency.

How do CCMS platforms earn money?

Software Licensing: Providers may charge a one-time license fee for the use of their software, followed by regular updates and maintenance fees.
SaaS: A recurring subscription fee is charged to access the software based on the volume of accounts, users or transactions.
Transaction-based Fee: Some CCMS might charge a fee for every transaction processed through the system.
Additional Services: Fees for additional services apart from their core functions, like analytics, FRM or report generations etc.

Key Metrics Analysed

Customer Activation

Measures the percentage of credit card activated, which means issued and have had a first transaction authorised indicating converting users.

Fraud Detection Accuracy

Quantifies the system's fraud detection precision, balancing false positives and true fraud identification to optimize security and user experience.

Average Transaction Processing Time

Measures transaction completion time, indicating CCMS payment processing efficiency.

Retention Rate

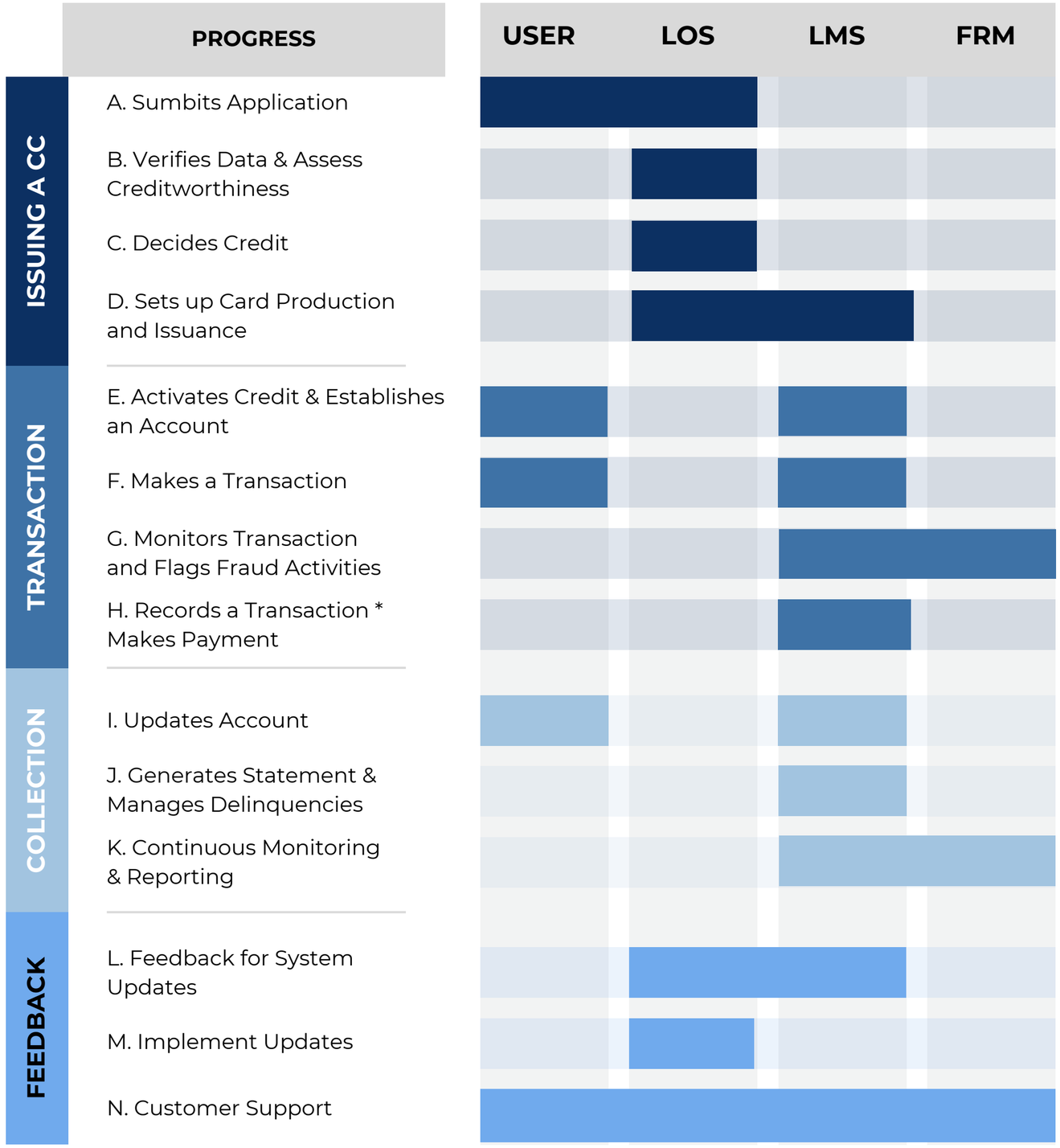
Measures the percentage of credit card holders who continue to use the card over a specific period, reflecting customer loyalty and satisfaction with the card services

Source: Electronic Pay, Cloudbankin, Stripe, Plaid, FinModelLabs

MODULAR CCMS SOLUTIONS

With rapid evolution, CCMS solutions are now far more adaptive. They cannot only service a large part of the lending workflow through in-built systems, but can interact with external data providers real-time to add more precision to the process.

CCMS Flow



B. Account Aggregator integration will improve data verifiability.

C. Gen AI will aid real-time creditworthiness evaluation using alternative data. Further, NTC customers could also get secured cards.

F. The different form factors of cards have emerged; new age switches have adapted to it. For eg. the UPI Switch.

H. The LMS records it in the central banking system, and integrated with front office and back office modules.

K. Continuous reporting is required for Technological performance (Downtime, Fraud Detection Capability, Dispute Analysis) and Business metrics (Chargebacks, Transaction Reconciliation, Loyalty Programme, Resolution Monitoring).

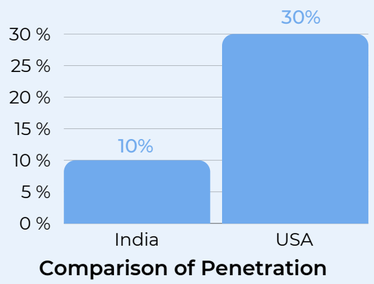
N. Gen AI-driven chatbot integration for 24/7 customer query resolution and support within CCMS platforms.

Source: Expert Interviews

5.4D TRENDS IN CCMS

Amidst expanding data ecosystems, deeper partnerships, and advanced tech, CCMS is evolving, leveraging co-branded cards, UPI linkage, and analytics-driven personalization to reach broader audiences with enhanced precision.

Co-branded Cards



Comparison of Penetration

Co-branded Cards help in activating Dormant/Inactive Customers

What Does It Mean?

Credit cards issued jointly by a bank and a retail or service partner, featuring combined branding and benefits tied to the partner's offerings.

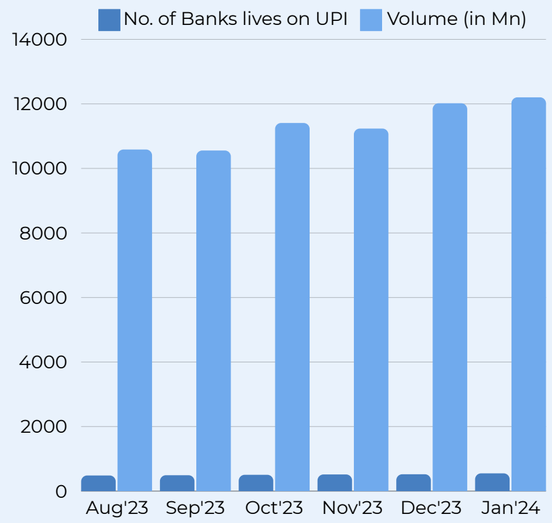
How Does It Benefit Lenders?

Enhances customer acquisition and retention by leveraging partner brand loyalty; diversifies revenue streams through shared marketing costs and increased card usage in partner ecosystems.

What Is The Growth Opportunity?

Expanding market penetration in niche segments; potential for increased transaction volumes and cross-selling opportunities.

Credit Cards linked to UPI



UPI 6-month Growth in India

What Does It Mean?

Linking credit card functionalities with UPI, enabling credit card transactions to be processed via UPI's real-time payment platform.

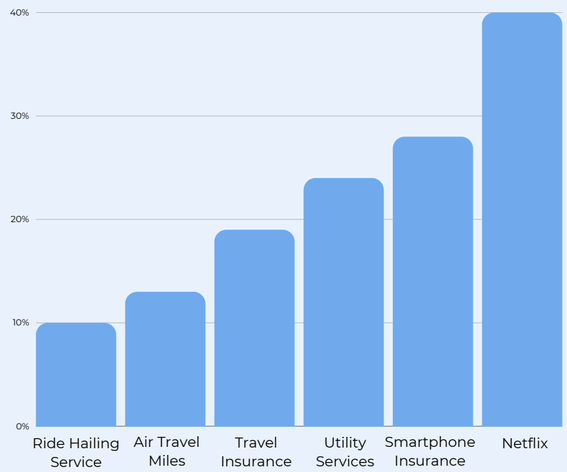
How Does It Benefit Lenders?

Opens new transaction channels for credit card users, potentially increasing transaction frequency and volume; enhances user convenience and transaction speed.

What Is The Growth Opportunity?

Access to India's rapidly growing UPI transaction market, which recorded 1 billion (NPCI) in early 2024, expanding credit card use cases and user base. Merchant acceptance will be higher.

Hyper-Personalisation



Banking Switch Incentives

What Does It Mean?

Employs data analytics to craft tailored offers based on individual consumer spending behaviours and objectives, enhancing issuer-consumer engagement and loyalty.

How Does It Benefit Lenders?

Enables issuers to refine consumer financial behavior understanding, facilitating targeted marketing, product relevance, and personalised financial guidance, which enhances customer value proposition and operational efficiency.

What Is The Growth Opportunity?

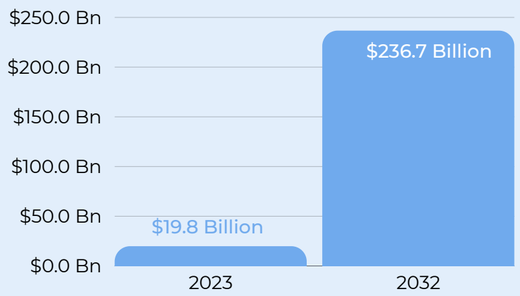
Utilizing analytics for enhanced cross-selling and upselling. Personalized offerings lead to greater market reach and stronger customer loyalty.

Source: The Advent of Co-branded Credit Cards in India (Potleee), NPCI, Your Story CapTable

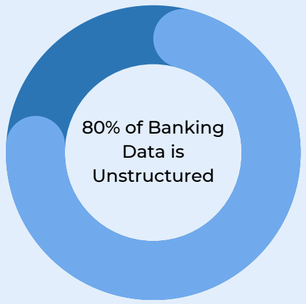
5.4E WHITESPACES IN CCMS

To unlock the potential of this market, lenders need to not only make use of new technologies and serve new audience bases better, but also look to develop new solutions that can make use of these tailwinds to become large outcomes.

AI-Powered Automated Underwriting, Financial Risk Management (FRM), and Loyalty Programs



Global Market for AI in Banking



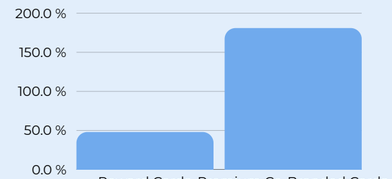
Growth Opportunity

Leveraging AI in CCMS for auto underwriting presents a transformative opportunity, enabling dynamic upselling and downselling while enhancing FRM. This technological integration facilitates real-time decision-making and risk assessment, optimizing the credit management ecosystem.

Multi-Party (>2) Co-Branded Collaboration


6 out of 10 millennials belong to customer loyalty programme


1 out of 3 credit card holders have a co-branded card

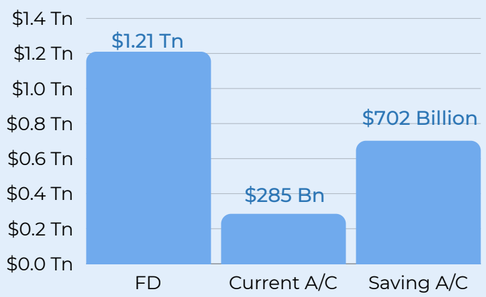


YoY Reward & Premium Co-Branded Card
(BankBazaar)

Growth Opportunity

Implementing a co-branded credit card within a CCMS allows for advanced risk and reward management through shared data analytics and algorithmic modeling, enhancing precision in credit risk evaluation and reward allocation by leveraging cross-brand insights for improved financial decision-making.

Hybrid Card Solutions

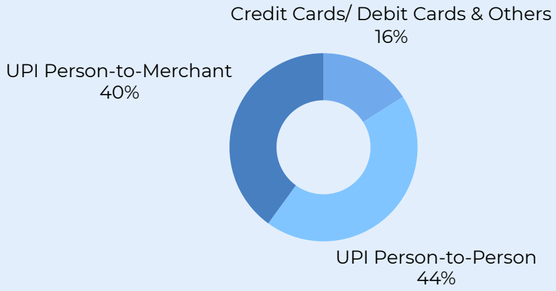


Financial Holdings Breakdown in India

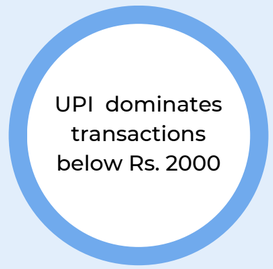
Growth Opportunity

Deploying hybrid cards (mixing debit and credit features) operating on Overdraft (OD) or Fixed Deposit (FD) mechanisms introduces variable credit options, allowing users access to revolving credit lines based on predefined financial assets. Credit card usage has increased by 20%, while debit card swipes declined by 31%, indicating a growth trend for secured cards.

Virtual Card and UPI Integration



Transaction Volume of Payment Methods



Growth Opportunity

The amalgamation of virtual cards with the UPI framework optimises transactional efficiency and security, facilitating seamless digital payments and enhancing user experience in a contactless payment ecosystem. CCMS will need to evolve to be flexible across card switches and UPI switches to be able to process such transactions.

Source: NPCI, Business Standard

5.5A CO-LENDING

Co-lending merges bank and non-bank resources to enhance loan accessibility and affordability, driven by market needs and guided by RBI's co-lending models (CLM) guidelines from November 2020.

What is Co-lending?

Co-lending is a collaboration where NBFCs team up with banks to offer loans, enabling NBFCs to grow rapidly using the bank's larger balance sheets, boosting their ROE. For banks, it expands their customer base into new segments through NBFCs' distribution channels. The substantial growth of many NBFCs has attracted Fintech companies' attention. In FY23, India's bank co-lending portfolio reached $3.04 billion.

Why Co-lending is needed?

Financial Inclusion
Targets underserved regions, enabling credit flow to EWS, LIG, and MIG through NBFCs' local reach and banks' capital.

Affordable Credit
Leverages bank-NBFC partnerships to offer lower interest rates, reducing financial barriers for borrowers.

Risk Distribution
Adopts an 80:20 funding model, balancing risk and incentivising quality loan origination.

Synergy
Combines banks resources with NBFCs' operational agility to increase market penetration/ portfolio diversification.

Efficiency
Streamlines loan processing via NBFCs' tech-driven platforms, ensuring rapid fund disbursal.

Evolution of Co-Lending

Pre 2010

- Initial partnerships formed, exploring synergy between banks' capital and NBFCs' local networks.
- Absence of formal guidelines led to ad-hoc and limited co-lending ventures.
- Limited digital infrastructure hindered efficient integration and scaling.

2010-2018

- RBI and regulators acknowledged and framed co-lending models.
- Technological advancements and fintech innovations facilitated collaborations.
- Increasing banks and NBFCs entered co-lending agreements driven by mutual benefits.

Post 2018

- Formalized co-lending models for banks and NBFCs, addressing operational and regulatory aspects.
- Advanced APIs and platforms for seamless co-lending ecosystems.
- Emphasis on financial inclusion, targeting diverse borrower segments.

Key Co-Lending Companies

Yubi	lentra	KNIGHT FINTECH
YubiCo. Lend is a digital platform for credit discovery, execution, and fulfilment. It enables lenders to seamlessly collaborate with multiple partners through a one-time API integration. With over INR 10k Cr. loans disbursed, it serves 10L+ retail clients and 500+ partners.	Lentra offers digital lending solutions, prioritizing automation for the entire loan lifecycle, from origination to repayment. This ensures smooth operations for banks and NBFCs. Recently, Lentra has expanded into co-lending modules as well.	Knight Utopia offers fintech solutions tailored for banks and financial institutions, focusing on treasury and credit. Their advanced middleware, Co-Lend, facilitates bank-NBFC collaboration for shared risks and enhanced returns. Serving over 70 clients with 120% YoY growth, it manages a $1 Bn AUM.

Knight Fintech's co-lending product offers seamless integration, comprehensive lending tools, and automatic reconciliation, optimizing processes for banks and NBFCs. It streamlines credit policies, enhances compliance checks, and fosters operational savings and flexibility for both parties.

Source: RBI, Yubi, Vinod Kothari Consultants

5.5B HOW IS A CO-LENDING MODEL OPERATED AND REGULATED?

The co-lending model operates under stringent regulatory frameworks to ensure seamless collaboration between entities and safeguard borrower interests.

Process of Co-Lending

LOS	• Front-end customer-facing portal managed by NBFC. • LOS systems of both banks and NBFCs must integrate seamlessly, allowing for the real-time exchange of applicant data, credit assessments, and loan eligibility criteria. • Implement dynamic, rule-based engines within LOS to accommodate varying credit policies of banks and NBFCs, ensuring compliance and adaptability to diverse borrower profiles. • Utilise advanced analytics and AI within LOS to automate loan decisioning processes, reducing turnaround times and enhancing the efficiency of credit underwriting. • Relationship depends upon master agreement arrangement, and can have a joint approval system.
LMS	• LMS should support joint portfolio management, enabling both parties to monitor and manage loans, track repayments, and assess loan performance collaboratively. • Implement risk management modules within LMS to dynamically adjust for shared risks, provisioning, and asset classification in line with regulatory requirements and agreed risk-sharing ratios. • Ensure LMS can accommodate various loan products and co-lending arrangements, supporting tailored loan terms, interest rates, and repayment schedules agreed upon by banks and NBFCs. • A joint asset charge creation for secured type loans between both the lenders.
Escrow	• Establish jointly managed escrow accounts, ensuring funds are disbursed and received transparently, with clear oversight from both lending parties. • Integrate automated triggers within escrow management systems for timely loan disbursements based on predefined criteria and loan agreement terms. • Structure escrow arrangements to comply with regulatory directives, safeguarding against fund commingling and ensuring fiduciary responsibilities are met.
Collections	• Develop a cohesive collection framework, after NBFC has initiated collection from the LMS, the loan is sent to the escrow amount where it is disbursed to the lenders in their profit sharing ratios. • Standardise borrower communication channels and messaging, ensuring clarity and consistency in collection efforts, while adhering to fair practices and regulatory guidelines. • Implement robust tracking and reporting tools within collection systems to monitor recovery rates, delinquency trends, and operational effectiveness, facilitating data-driven strategies.
Reporting	• Establish comprehensive reporting protocols that aggregate data across both entities, offering insights into portfolio health (NBFC to Banks), financial performance, and risk exposure. • Automate the generation of regulatory reports, ensuring timely and accurate compliance with central bank guidelines, including risk-sharing disclosures and financial statements. • Maintain detailed audit trails within reporting modules, capturing all co-lending activities, transactions, and decisions for transparency and accountability.

Note: Typically NBFCs take charge of engaging with customer.

Regulations for Co-Lending

Banks are mandated to ensure KYC adherence in line with RBI guidelines. While KYC due diligence can be executed via third parties, it's imperative that these entities are not domiciled in jurisdictions deemed high-risk by relevant assessments.

The NBFC and bank must establish a creditworthiness assessment framework in compliance with RBI directives that prohibit outsourcing of credit sanctioning. Both entities are required to conduct direct ex-ante due diligence.

Banks and NBFCs are required to independently manage accounts for each borrower's loan portion. All financial exchanges between these institutions must be conducted through an escrow account, ensuring no commingling of funds.

NBFC acts as the primary contact for customers, setting unified interest rates with banks and facilitating account statements through data-sharing agreements. A complaint resolution system is also mandated for NBFCs.

Source: RBI Co-Lending Guidelines, Expert Interview, Trustt, FinFlux

5.5C WHAT SHOULD A CO-LENDING MODEL LOOKLIKE?

Essential features for a co-lending platform include a robust technological infrastructure and transparent operations, guiding partners in selecting the most suitable platform for effective collaboration.

Must have Features

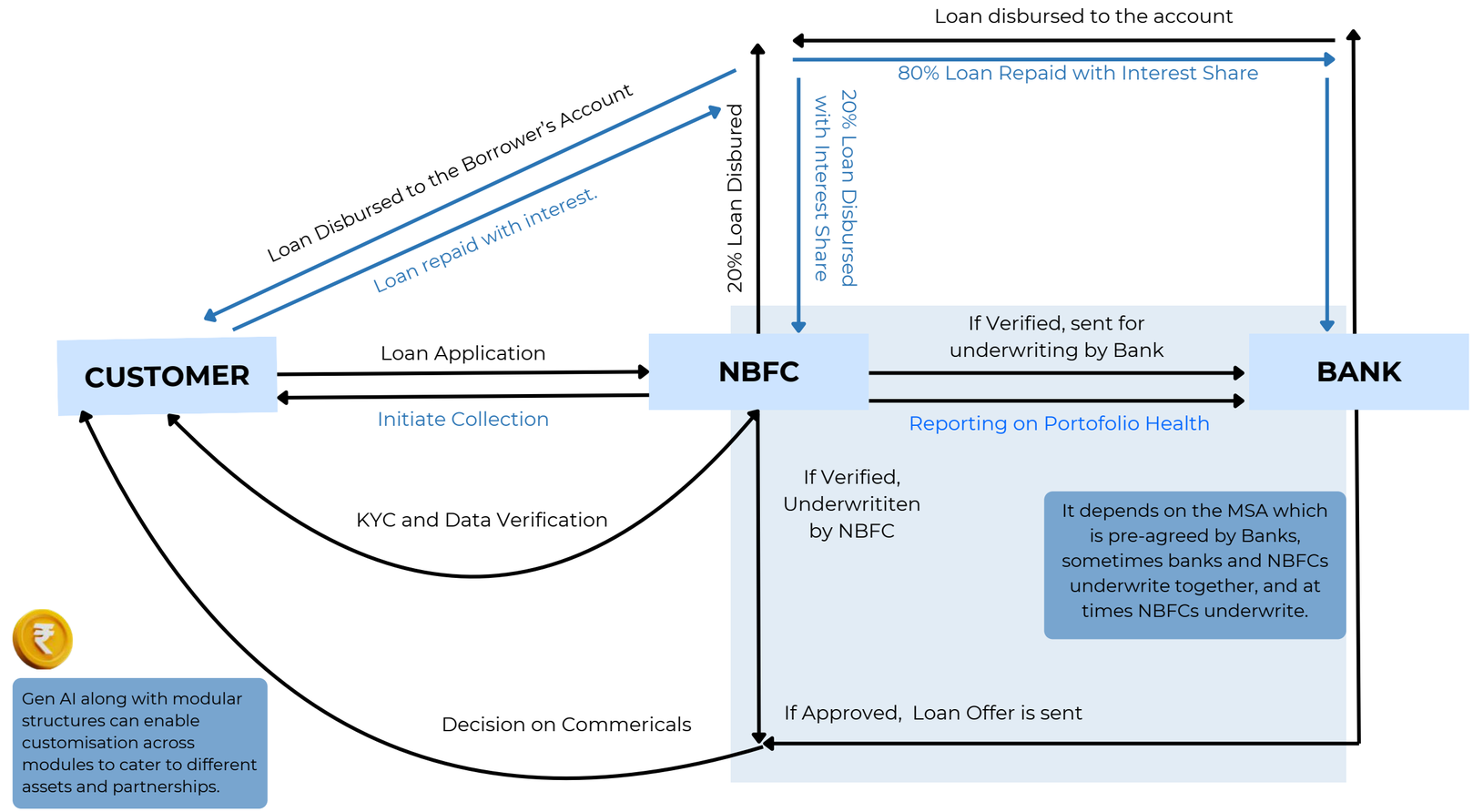
Reconciliation Middleware
A sophisticated middleware should be employed to facilitate accurate and transparent reconciliation among banks, non-banking financial companies (NBFCs), and borrowers.

Dynamic Business Rules Engine (BRE)
The platform should feature a dynamic BRE that allows for real-time decision-making and adaptation to changing lending conditions.

Automated Integration with CBS and CMS
Integration with Core Banking Systems (CBS) and Customer Management Systems (CMS) is crucial for streamlining operations and automating the lending process.

Low Rejection Rates
Advanced risk assessment capabilities and pre-agreed credit policies should be in place to reduce rejection rates and expand access to lending.

Inflow of Co-Lending/ Outflow of Co-Lending/ Reporting



How to choose the ideal Co-Lending Platform?

- **Risk Sharing Mechanism:** Partnerships for credit risk mitigation.
- **Regulatory Compliance:** Ensuring adherence to financial regulations.
- **Technology Infrastructure:** Robust operational backbone.
- **Data Management and Security:** Protection of sensitive financial data.
- **Customer and Data Ownership:** Clarification of customer information ownership.
- **Operational Efficiency:** Process efficiency through automation.
- **Reconciliation and Reporting:** Accurate financial reconciliation and reporting.
- **Flexibility and Scalability:** Adaptation to evolving markets and business growth.
- **Customer Experience:** Prioritizing smooth end-user interactions.
- **Integration with Credit Bureaus:** Supporting real-time credit assessments.

Source: RBI Co-Lending Guidelines, Expert Interview, Trustt, FinFlux

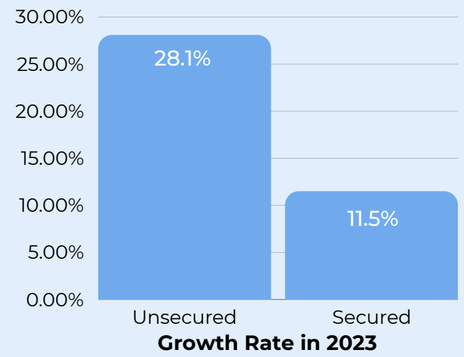
5.5D WHITESPACES AND TRENDS IN CO-LENDING

The co-lending space is ripe for innovation, with emerging trends and untapped opportunities set to redefine collaborative lending and expand financial inclusion. Regulation is only three years old and adoption across institutions is just picking up.

Whitespaces in Co-Lending

Secured Co-lending Platforms with Lien Marking

65% of the Gold Loan Market is unorganised, and 35% is organised which is worth $6 trillion, out of which there is an 80:20 ratio between Bank & NBFC



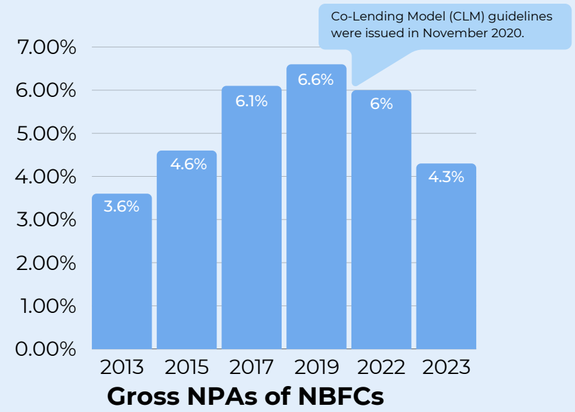
Growth Rate in 2023

Growth Opportunity

Developing platforms focused on secured co-lending, with capabilities for automated lien marking on various assets like gold, housing, vehicles, and mutual funds, represents a significant opportunity for expansion. Such technological advancements could enhance collateral management efficiency, bolster transaction security, and broaden the scope of asset-backed lending.

Advanced Joint Underwriting and Management System

Knight Fintech increased loan approval rates by 97% using advanced middleware capabilities in BRE, API, and risk framework.



Gross NPAs of NBFCs

Growth Opportunity

The advancement in co-lending technologies, with the integration of complex underwriting algorithms and unified management platforms, creates opportunities for expansion. The implementation of dynamic Business Rules Engines (BRE) and rigorous risk management systems enhances process efficiency, risk evaluation precision, and loan administration effectiveness, leading to improved co-lending partnership dynamics.

Customisable Modular Co-lending Solutions

There are a few co-lending platforms currently in the market but creating modular, plug-and-play co-lending technologies that can be tailored to different co-lending partnerships. Such solutions would simplify integration, improve scalability, and meet the diverse needs of co-lending entities, driving adoption and market expansion.

Views on Banks/NBFCs building their own Co-Lending platform

- Prevalent systems often act as gateways to LOS and LMS but lack crucial two-way integration for seamless co-lending.
- Platforms like Yubi are primarily focused on loan origination, potentially neglecting co-lending needs.
- Banks and NBFCs without their LOS/LMS may struggle to develop robust co-lending technology.
- Achieving a competitive edge requires successful integration between internal systems and external co-lending platforms, a challenge due to technical complexity and security standards.
- Institutions like UGro and Muthoot have internal systems not fully equipped for external co-lending collaboration.

Commercial Structures of a Co-Lending platform

- Subscription Fees: Recurring access fee, tiered by usage/features.
- Transaction-Based Fees: Per-loan fee aligning with lending volume.
- Revenue Sharing: Percentage of loan income shared with platform.
- Setup/Integration Fees: One-time charge for system setup.
- Tiered Access: Varied feature levels at different subscription tiers.
- Freemium Model: Basic free access, paid additional features.
- Enterprise Agreements: Customized contracts for large-scale needs.

In 1-to-1 NBFC-Bank setups, NBFCs access via bank's middleware/API. Larger NBFCs prefer paid models for efficiency.

Source: ET BSFI, Knight Fintech Blogs, Union Bank of India

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SECTION 6

DIGITAL LENDING PRODUCTS

Navigating the digital era, the spectrum of digital lending products spans across B2B and B2C markets, alongside other specialized lending solutions, each designed to cater to specific financial needs and operational frameworks in an increasingly interconnected world

6.1 WHAT ARE THE DIFFERENT LENDING PRODUCTS?

Empowering businesses and individuals to thrive by unlocking flexible and tailored lending solutions for their use cases and adapting to the borrower profiles.

PURE PLAY LENDING

B2B Lending Overview

B2B lending is a type of lending that caters to SMEs, MSMEs and Enterprises. The loan products can be secured or unsecured, and adjusted according to borrowers profile.

LENDINGKART · FLEXILOANS · AYE [आय] · Oxyzo · InCred Borrow. With Confidence.

B2C Lending Overview

B2B Lending caters to individuals by facilitating loan for personal use, emergencies or use-case specific. These loans are facilitated to different types of customer profiles like NTC, Credit and Blue Collar.

stashfin · KreditBee · MONEYTAP · Rupeek · kissht · axio

OTHER

Loan Marketplace

Loan marketplaces connect borrowers with multiple lenders, offering personalised loan options for diverse needs. These can cater to B2B + B2C customers, and there are agent-led loan marketplaces that have emerged as well.

gromo · paisabazaar.com · APNAPAISA · canopi

Integrated Lending Product

Integrated Lending Products can be sold at Point of Sale (PoS) through Buy-Now-Pay-Later (BNPL) or secured or unsecured credit cards, or Credit on UPI. OCEN and ONDC are leading to the development of the LSP.

slice · RUPIFI · JUSPAY

Source: Inc42

6.2 B2C LENDING

B2C lending solutions provide a variety of loans tailored to meet borrowers' diverse financial needs, including urgent expenses, asset purchases, or education funding. This includes secured and unsecured options, specifically designed for New-To-Credit (NTC) customers.

Solutions can be categorised as per the following:

Use-Case	Healthcare	Payday	Personal	Education
Type of Loan	Gold Loans	Unsecured	Secured	P2P
Distribution Channel	Marketplaces	Easy EMI	POS Lending	Credit Cards

Broad Types of Lending

Secured Lending		
Secured lending is issuing of loans against an asset owned by the individual as a collateral.		
NTC	• Secured Credit Cards • Credit building FD backed loan	• Loan against Property • Vehicle financing • Loan against MF/gold/ insurance
Blue Collar	• Microfinance against assets/crops	
Student	• Income sharing agreement • Loan against PF	
Salaried		
Creditworthy		

Unsecured Lending		
Unsecured lending is issuing loans to the borrower without the need of a collateral. Lenders underwrite such loans based on a borrower's creditworthiness.		
NTC	• UPI-linked loans • First time cards • Micro- loans • Advance	• Travel/ Wedding/ Medical loans for personal use-cases
Blue Collar		
Student	• Education loan • Customised cards	
Salaried	• Payday Loan	
Creditworthy	• Personal loans	

WHITESPACES

Secured Lending Integration
Collateral-backed financing spanning EVs, credit-building cards, and securities loans enhances risk management and market accessibility.

Housing Finance Corporation (HFC)
Urbanisation and affordable housing demand catalyses specialised HFCs leveraging flexible underwriting and government schemes for market expansion.

Rural Voice-Enabled Lending
Integrating voice-based solutions and ML-driven rural credit scoring to enhance financial accessibility and inclusion in non-traditional markets.

Demographic-Driven NTC Products
Leveraging data analytics for tailored financial solutions based on employment trends and seasonal cash flows to meet unique community needs.

OCEN Integration
Harnessing Open Credit Enablement Network APIs for real-time, secure credit processes within digital lending, enhancing transaction efficiency.

6.3 B2B LENDING

B2B lending solutions aim to empower India's SMEs, MSMEs, and Enterprises to help close the credit gap by providing growth capital as well as liquidity with tailored solutions.

Solutions can be categorised as per the following:

Use-Case	Supply Chain Financing	Invoice Financing	Revenue-based	
Type of Loan	Unsecured	Secured	Line of Credit	
Distribution Channel	Marketplace	Corporate Cards	POS Lending	Credit Cards

Broad Types of Lending

Secured Lending	
Secured lending is issuing loans against an asset owned by the business or the promoter as a collateral.	
SME	• Gold-backed loans • FD/OD facilities • Invoice discounting against goods • Anchor-led financing • Equipment financing • Vehicle Loans • Loan against residential/commercial property
MSME	
Enterprize	

Loans can be customised on the basis of collateral value and size of borrower.

Unsecured Lending	
Unsecured lending is issuing loans to the borrower without the need of a collateral, rather by credit worthiness.	
SME	• Revolving cards/ lines • Micro-credit for working capital • Term financing • Merchant cash advance • Anchor led bonds • Commercial papers
MSME	
Enterprize	

Underwriting is primarily driven by use case and size of the borrower.

WHITESPACES

EV Financing
Enable asset-backed lending for electric vehicle fleets with IoT-based real-time asset monitoring.

Revolving Credit Card
Implement AI for secure, transparent credit line management and transaction verification.

ONDC/LSP Embedded
ONDC API integration streamlines credit, optimizing financial operations.

Green Financing
Utilise AI-driven sustainability scoring to allocate loans for eco-friendly projects.

Secured Financing/Treasury
Deploy smart contracts for automated collateral management in real estate or treasury assets.

6.4 DIFFERENT FORM FACTORS OF LENDING

By adopting a range of lending form factors, financial institutions can significantly enhance accessibility, catering to a broader and more diverse customer base, thereby tapping into new markets and meeting the unique needs of different segments.

Market Aggregators

- Serve as a one-stop-shop platform for comparing various loan products from different lenders (Eg. PaisaBazaar, BankBazaar, and PolicyBazaar).
- Agent led marketplaces are emerging for rural/less accessible areas (Eg. One Code or Gromo).

Embedded Finance

- Integrates multiple lending functions within non-financial websites or apps for a seamless user experience.
- Companies like Finbox (LSP), BharatX and Rupifi offer this by embedding credit options into online shopping platforms (Amazon/ Flipkart etc).
- Jar is providing gold-based loans for it's existing clients.

Co-branded Cards

- Credit cards issued jointly by a bank and a retail brand, offering brand-specific benefits.
- RuPay credit card to be linked to UPI, allowing credit facilities via card and UPI.
- Eg. Amazon Pay ICICI Credit Card and the Flipkart Axis Bank Credit Card.

*Appendix for further details

Vertical SaaS Lending

- Specialized software solutions for specific industries that also offer lending as part of their product suite.
- Eg. Cogoport, a freight logistics company offers pay later and export financing, Reyfne, a employee wellness platform which provides salary advances and Bizongo, a vendor digitisation platform with embedded financing.

Buy Now Pay Later (BNPL)

- Allows consumers to purchase immediately and pay over time, often interest-free.
- Popular BNPL services include Simpl and Paytm Postpaid.
- This can be via EMI Cards, POS or Omni-channels
- Similar to BNPL, Save Now Pay Later (SNPL) emerged towards India's saving focussed DNA allowing customers to save over time for a target amount.

Credit on UPI

- Offers short-term credit facilities over the UPI platform for instant transactions for both B2B and B2C.
- Aspire is a UPI-based credit facility for self employed individuals to avail a credit line for personal and business use-cases. These products see low churn and extremely high retention.

CBDC Lending

- Digital form of fiat money, issued and regulated by RBI and can enable precise tracking, facilitating purpose-driven loan.
- Enables contract-based payments, automating for MSME loans and interest settlements.
- Facilitates real-time, cross-border transactions reducing intermediaries, lowering costs, and increasing efficiency in international lending.

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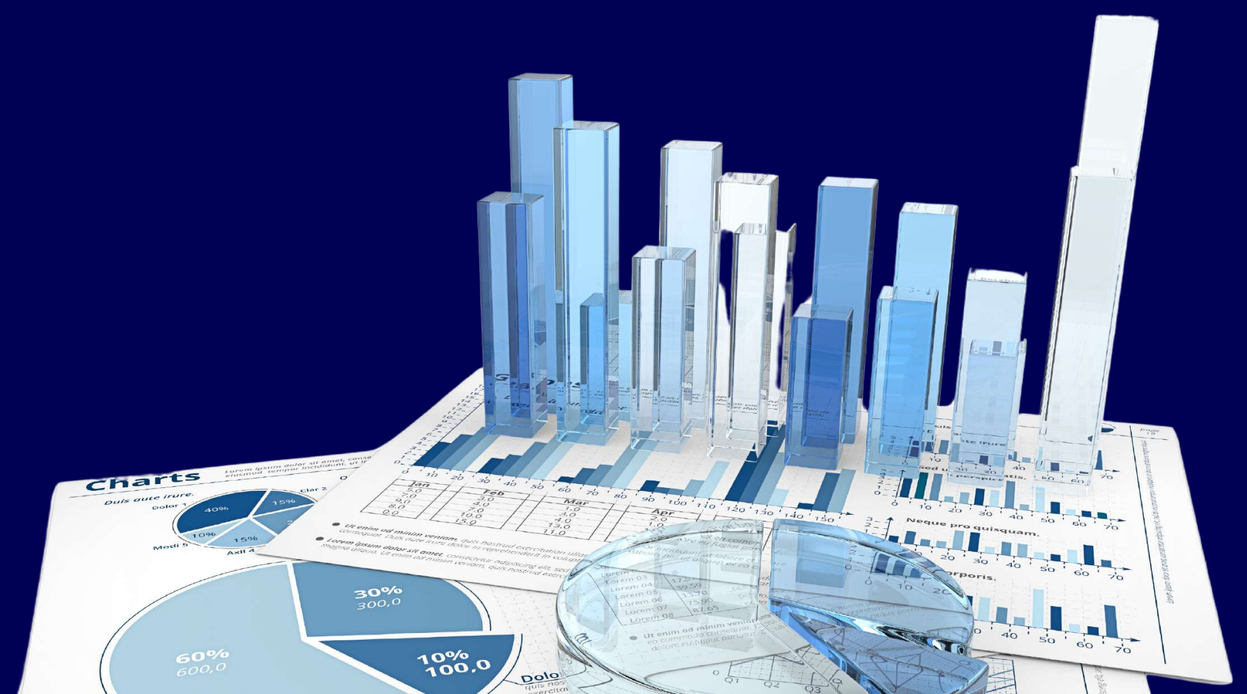
SECTION 7

REGULATIONS AND PARTNERSHIPS

In the intricate tapestry of digital lending, regulations and partnerships emerge as critical threads, weaving together a framework that ensures compliance, fosters innovation, and cultivates synergistic relationships within the financial ecosystem.



7.1 BANKS, FINTECH AND NBFC

The three combined are integral to financial inclusion, partnering together to provide a wide array of innovative and accessible lending services to meet the diverse needs of consumers and businesses alike.

How and why do they partner together?

Technology & Innovation

Fintech companies bring advanced technology and innovative approaches to the traditional lending process. They often have sophisticated algorithms for credit scoring, risk assessment, and data analysis, which can make the lending process more efficient and accessible.

Regulatory Compliance and Financial Expertise

Banks and NBFCs have established regulatory frameworks and financial expertise. They understand the complexities of financial regulations, compliance, and risk management. Their involvement ensures that the lending process adheres to regulatory standards and financial best practices.

Operational Efficiency and Cost Reduction

Fintech solutions can automate many aspects of the lending process, reducing the operational costs and time required for loan processing. This efficiency can lead to more competitive loan products for consumers.

Product Diversification and Inclusion

Through this partnership, a diverse range of lending products can be offered, catering to different segments of the market, including underserved or unbanked populations. This promotes financial inclusion by making credit more accessible.

Customer Reach and Brand Trust

Banks, with their established customer base and brand trust, can provide a wider reach to lending services. NBFCs, known for their flexibility and customer-centric products, can target specific market segments effectively.

Data Sharing and Analysis

The partnership allows for the sharing of customer data (within regulatory limits), which can be used to better understand customer needs, improve the accuracy of credit assessments, and tailor products to specific market demands.

Market Expansion and Competitive Edge

For banks and NBFCs, partnering with fintech companies can help them stay competitive in an increasingly digital financial landscape. For fintech companies, this partnership provides legitimacy and a broader platform to operate.

Risk Sharing and Management

By partnering, these entities can share the risks associated with lending. Fintech companies, despite their innovative approaches, often lack the financial buffer that established banks and NBFCs possess. Sharing risks can lead to more sustainable lending practices.

7.2 CHALLENGES FOR DIGITAL LENDING IN INDIA

Despite significant growth potential, LendingTech companies face challenges such as regulatory barriers, funding constraints, infrastructure needs, and customer trust, impacting their journey to sustained growth and profitability.

The emotional challenge with the Indian population to adopt digital lending is gradually being overcome as services become more customised to suit the diverse demographics and regions, building a more relatable and trusted digital banking experience.

RBI Guidelines for Lending

Digital Lending Guidelines

- **No Third-Party Collections:** Funds must move directly between the borrower and the Regulated Entity (RE), avoiding any third-party accounts.
- **Fees:** Fintech companies are prohibited from collecting any fees from borrowers. Borrowers must receive a document detailing the total cost of digital loans as an Annual Percentage Rate (APR).
- **Cooling-Off Period:** Borrowers are allowed a period during which they can opt out of a digital loan by repaying the principal and a proportionate APR without penalties.
- **Consent for Credit Increases:** Any increase in credit limits must be explicitly approved by the borrower.
- **Grievance Redressal:** REs must appoint nodal officers for effective grievance handling.
- **Technology & Data:** Digital Lending Applications (DLAs) must collect data based on necessity, maintain clear audit trails, and operate with explicit consent.

Co-Lending Guidelines

- **Minimum Bank Share:** Banks and NBFCs share risk in a ratio of 80:20; 80% of loan is borne by the bank and a minimum of 20% remains with non-banks like NBFCs, HFCs, Fintech, etc.
- **Due Diligence and KYC:** Co-lending requires thorough initial diligence, including Know Your Customer (KYC) checks and a minimum holding period for loans.
- **Restrictions on Agreements:** Banks cannot co-lend with NBFCs that are part of their promoter group.
- **Grievance Redressal System:** NBFCs must have mechanisms in place to address borrower complaints.
- **Escrow Account Transactions:** All bank and NBFC transactions must go through an escrow account to prevent the mixing of funds.
- **Third-Party Consent:** Involving third parties in transactions requires agreement from both the bank and the NBFC.

Source: E&Y Report, RBI Guidelines refer to relevant papers

KEY TAKEAWAYS

- With the rise of co-lending, the need for robust co-lending infrastructure becomes critical to support both banks and NBFCs. Solutions need to be easy enough for non-tech financial services to customise as per their lending requirements.

- The growing use of open banking API (account aggregator) necessitates the emergence of modular core banking structures to help banks scale offerings.

- Gen AI is poised to revolutionise the use of unstructured data across the lending stack, requiring loan origination, management, and debt collection to evolve to include Gen AI integrations.

- Hyper-personalisation is needed to serve the growing new-to-credit segment, forcing financial institutions to re-evaluate traditional products and stacks. Growing collaboration between fintechs and FIs is emerging as a key solution.

- The increasing digitisation of secured assets such as insurance, real estate, and bonds enables online secured lending, with collateral management emerging as a clear gap.

- ONDC enables cash-flow-based lending products for tier 3+ unorganised Indian businesses and markets.

- Corporates are seeking innovative treasury products to manage working capital cycles, with innovative, low-cost lending products emerging to solve this.

- Technology plays a critical role in managing the increasing need for better risk management by creating utilisation monitoring of loans. The emergence of compliance as a service platform manages multi-party compliance needs in line with RBI guidelines.

CONCLUSION

India's economic landscape is undergoing a transformative shift to reach a $5 trillion economy by 2027. This evolution has sparked an unprecedented demand for financial services, particularly credit. Traditionally, India's diverse population has had limited access to financial products, partly due to cultural barriers that have historically deterred with the widespread use of credit as well as accessibility. However, as these barriers begin to erode, there's a pressing need for the financial infrastructure and lending models to adapt and innovate for the diverse needs of India's burgeoning population.

The emergence of the New to Credit (NTC) segment marks a significant development in the realm of digital lending. This segment, comprising individuals and businesses seeking credit for the first time, underscores the changing dynamics of India's credit landscape. Traditional banking methods, characterised by physical branches and conventional lending criteria, fall short of addressing the nuanced needs of over 5 lakh villages across the country. The limitations of physical branches, including their lack of agility and the high costs associated with scaling, highlight the necessity for more flexible and accessible digital lending solutions.

The advent of Digital Public Infrastructure (DPI) in India has been a catalyst for the digital transformation of the lending sector. DPI initiatives, such as OCEN, ONDC, AA and UPI etc. have laid the groundwork for a more inclusive and efficient financial ecosystem. By leveraging technology, DPI aims to bridge the gap in financial inclusion, offering a robust framework upon which innovative and purpose-driven lending models can be built.

India's digital lending infrastructure is still in its nascent stages, however, to enable the transition from archaic lending models to new-age DPI-driven models, the lending infrastructure needs to adapt with the use of cloud-based modular structures. Generative AI has a significant role to play in integrating unstructured data with existing underwriting models. This foundational infrastructure innovation is crucial for supporting the varied lending structures that cater to both Business-to-Business (B2B) and Business-to-Consumer (B2C) segments.

In addition to this, rapid adoption of products like credit on UPI, EMI cards is further deepening the penetration, along with existing loan products. RBI’s recent guidelines have bought clarity to the ecosystem to enable stronger partnerships between fintechs and regulated entities to enable products with better economics. These regulations have further shed light on the need of secured lending products, co-lending growth in the country. The sector has attracted substantial investment, with $5.8 billion of capital raised in the last six years to target a market size of $400 billion by 2024. Large profitable unicorns such as InCred, Vivriti Capital, Oxyzo and Yubi etc. have emerged and captured a large chunk.

Despite the considerable strides made in digital lending, the surface has only been scratched in terms of potential market penetration There are currently around 0.5 billion New-To-Credit (NTC) customers in India and only 14% of MSMEs are credit served. The future of digital lending is poised for exponential growth, with projections indicating that the sector could expand to a valuation of $1.3 trillion by 2030. This growth is expected to be driven by the advent of new use-cases and infrastructural innovations, which will necessitate a collaborative approach between banks, financial institutions (BFIs), and fintech companies.

The sector is dotted with whitespaces, areas which are untapped or not full explored. These gaps represent a wealth of opportunities for introducing groundbreaking financial solutions to a broad spectrum of users and industries.

Source: Inc42

CONCLUSION

At Eximius, we are actively seeking to invest in innovations that harness the potential and target the underserved NTC segment. In the evolving landscape of India's financial services, **strategic credit and co-lending collaborations between Non-Banking Financial Companies (NBFCs) and rural banks** are key to unlocking the credit potential in rural and semi-urban markets. Such partnerships enable the crafting of customised financial products to meet the specific needs of these underserved demographics. Meanwhile, the growth of **collateral-backed lending** for MSMEs, retail sectors, and credit card users presents a strategic opportunity to mitigate risk while providing **personalised loan products.**

The deployment of **advanced co-lending tools and infrastructure**, augmented by AI, enhances the **precision of risk assessment and underwriting**, particularly for personal loans. **Commercial lending by NBFCs** can witness significant growth by tailoring loan products to the nuanced demands of different industry sectors. Additionally, underutilised digital lending frameworks like **OCEN** and the potential of **ONDC** offer vast opportunities for broader adoption and access enhancement, signifying immense growth potential through the **integration of these digital networks** for lending.

The **implementation of microservice architecture** in lending platforms introduces unmatched flexibility, enabling the development of scalable and resilient financial service ecosystems. This architecture, coupled with Gen AI data analytics, propels the **capabilities of new-age credit bureaus.** Moreover, these can be used by credit unions to launch diverse credit products along with NBFCs and Fintech.

Moreover, Gen AI's emergence can lead to innovation in **improved decision engines for fraud detection. Hyper-personalisation** is transforming the customer experience, offering bespoke financial solutions that cater to individual consumer behaviours and preferences, thus significantly **enhancing customer engagement and satisfaction.** Such technological advancements provide a bedrock for developing technologies for **secured credit cards, loans against assets and personalised unsecured loans.** Overall, the fintech sector's trajectory is poised for a radical shift as it embraces unveiled potential, and we are keen to speak with founders building in these segments.

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ANNEXURE 1

ACCOUNT AGGREGATOR (AA) NETWORK

The Account Aggregator (AA) Network, democratises credit by sharing financial data consensually. It integrates diverse credit sources, helping banks monitor spending and detect financial distress, boosting predictive credit assessment.

Components of Account Aggregator Network

- **Financial Information Providers (FIP):** These are data fiduciaries that manage consumer data. FIPs can be banks, non-bank financial institutions (NBFI), mutual funds, insurance repositories, or pension fund repositories.
- **Financial Information Users (FIU):** These entities consume data from an FIP to offer various services to the user.
- **Account Aggregator (AA):** An AA is an entity regulated by the RBI that helps an individual securely and digitally access and share information from one financial institution to another within the AA network.

Growth of and Impact of AA in India

- Credit worth $ 1.5-1.7 billion was disbursed by December 2023 using AA data for underwriting.
- Over 40% of these loans targeted MSMEs, narrowing the credit gap in this sector.
- A major private bank reduced application process costs by 25% by integrating AA seamlessly.
- Lenders have reported zero fraud rates on bank statements shared via AA, improving process efficiency.

Parameters	December 2022	December 2023
No. of Accounts Enabled	1.1 Bn	1.9 Bn
No. of Accounts Linked	3.2 Mn	38.9 Mn
No. of Data Share	3.3 Mn	40.1 Mn
No. of FIPs Live	29	146
No. of FIUs Live	128	363
No. of both FIPs/FIUs Live	29	88

Benefits of the AA Network

For Customers

The AA system accelerates secure data access, expediting loan evaluations and enabling swift loan approval. It also enhances access to data, potentially improving responses to urgent financial needs like micro-loans for MSMEs and affordable micro-insurance. This framework could reach numerous SMEs without physical branches, revolutionising credit penetration.

For Banks

Banks, leveraging India's digital infrastructure, can access consented and verified data, lowering transaction costs. This facilitates the provision of smaller loans and cash-flow based offerings. Additionally, AA minimises physical data fraud through secure digital signatures and end-to-end encryption.

Other Applications

The AA framework can be extended to handle data from other sectors, such as healthcare and telecommunications. However, if non-licensed entities are to be permitted, a data privacy framework must be in place, as the RBI currently seeks to protect only financial data within the scope of its mandate.

Source: Sahamati

OPEN CREDIT ENABLEMENT NETWORK (OCEN)

India's OCEN democratises credit access, especially for MSMEs and individuals, via an API framework. It fosters borrower-lender interactions, enabling innovative financial products, customised loans, streamlined applications, and cash flow evaluation for borrowers.

The MSME sector is facing a credit gap of about USD 400 Billion. This is keeping the segment from flourishing and growing at a faster pace. The introduction of OCEN, however, serves as a blessing in disguise for the MSMEs. OCEN's open protocols have been built to innovate the loan process at every step. It will help regulate credit lines and even ensure that every service provider can offer credit by just integrating with the OCEN platform.

100% Digital

Instrumental in the rise of credit marketplace

Easy for lenders to implement OCEN APIs

Simplified credit disbursal for lenders

Components of OCEN

- **Borrowers:** Individuals or MSMEs looking to source credit lines for various reasons.
- **Lenders:** Banks, NBFCs, or other financial institutions with capital and access to core banking networks willing to offer credit lines to borrowers.
- **Loan Service Providers (LSPs):** Any digital platform such as a web or mobile app that has an existing pool of customers interested in availing credit facilities.
- **Technology Service Providers (TSPs):** FinTech organisations that bring borrowers, lenders, and platforms onboard onto the OCEN protocol. Embedded Finance providers are an example of TSPs.

Benefits of OCEN

For Lenders

OCEN enables lenders to tailor loan products, effectively catering to the financial requirements of both individuals and MSMEs. Leveraging government-sourced customer data, lenders can establish underwriting norms and monitor credit, ensuring a more accurate assessment of borrower risk profiles.

For Individuals and MSMEs

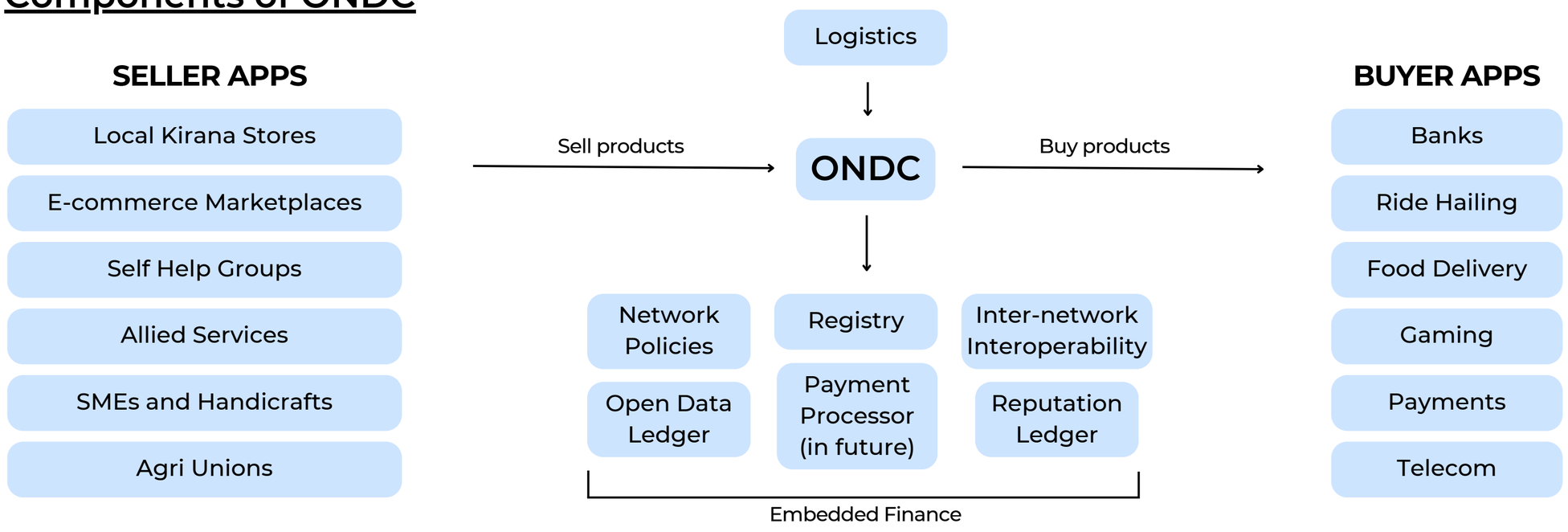
OCEN helps individuals and MSMEs through access to diverse loan options on the LSP platform. The platform provides entirely digital credit solutions, with a focus on cash flow-based evaluations rather than traditional balance sheet assessments. The application process is simplified, ensuring quick turnaround times for a streamlined borrowing experience.

Source: ocen.dev

OPEN NETWORK FOR DIGITAL COMMERCE (ONDC)

ONDC revolutionises financial services through an open data network, enhancing MSME lending by providing a transparent view of businesses' financial activities via integration with platforms like Government e-Marketplace (GeM).

Components of ONDC



Benefits of ONDC

For Digital India

- In India, the ONDC is poised to revolutionise the digital lending landscape within a connected ecosystem.
- The influx of more sellers into this network is expected to drive demand for revenue-based financing, working capital loans, and innovative supply chain financing solutions.
- Additionally, ONDC is anticipated to stimulate retail lending through Buy Now, Pay Later options, enabling customers to make credit-based purchases while assisting thin-file borrowers in establishing their credit history.

For Banks

Banks without a physical presence can benefit, expanding their reach to tier 2 cities and villages. The ONDC facilitates financial inclusion through solutions like working capital financing, term loans, and merchant settlement transactions.

For FinTechs

Ability to create embedded financial products for businesses to take micro-loans as well as offer accounting and inventory management.

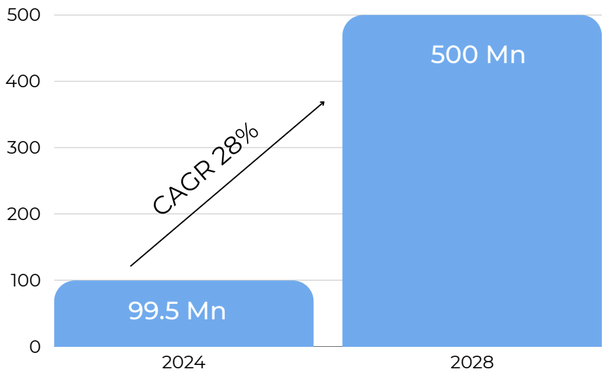
Source: Capgemini

CREDIT CARD OVERVIEW

Credit card ownership is significantly low at 5% of the population, much lower than the World Bank's 30% benchmark. This is largely due to a prevailing perception of credit cards as potential debt risks.

Growth of Credit Cards

- In 2023, India saw a significant increase in credit card issuance with 16.7 million new cards, surpassing the 12.2 million added in 2022. Over the last five years, the total number of credit cards has grown by 77%, from 55.5 million in December 2019.
- The increase in credit card usage is linked to NPCI's aim to raise the number of credit card holders to 500 million by 2028 and to grow UPI users to 750 million, with plans to connect credit cards to the UPI platform.
- The challenge of credit cards is the infrastructure in tier 2 and tier 3 cities, other lending products in the market are hindering the growth but can be solved by mixing credit cards with them eg. Credit Cards linked to UPI.

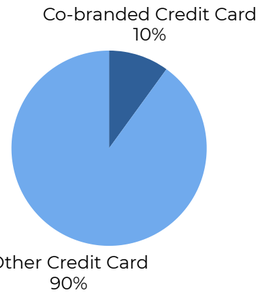


- India currently has 99.5 million credit card holders as of January 2024, while 40% of Indian banks don't issue Credit Cards.
- Out of the total cards issued, currently, there are only 38 million unique credit card users, with an average of 2 cards per person.

Key Types of Cards

- **Co-branded Cards:** Partnership between a bank and a non-financial company, offering mutual brand benefits and rewards.
- **EMI Cards:** Enable purchases to be converted into Equated Monthly Installments, facilitating easier payment schedules.
- **Usage Specific Cards:** Tailored for specific purposes like travel, offering related benefits and rewards.
- **Credit Card on UPI:** Integrates credit card functionalities with UPI platforms, allowing credit-based transactions through UPI.

1 in 3 new credit cards issued today are co-branded

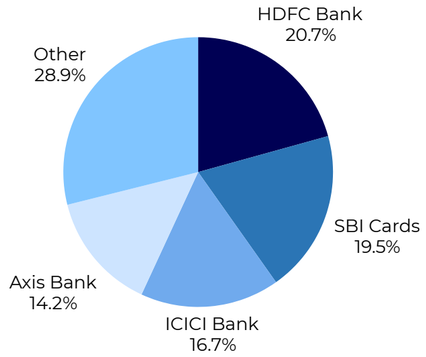


India is seeing a rise in different types of cards to increase penetration.

Ecosystem

Top Card Networks
The top 3 card networks in India are Rupay, Mastercard and Visa, but Diners Club and AMEX are available.

Top Credit Card Issuers
The top 4 banks command a 71% share of the Credit Card Market.



Key Players

NEW-AGE

One Card issues 45-50k cards per month on average. They offer a metal card with a digital-centric model which is integrated with a mobile application for real-time analytics and management.

Uni Card issues around 10-15k cards on average. Uni Cards operates on a BNPL model, allowing users to split their transactions into three equal parts over three months without incurring additional charges.

BANK ISSUED

SBI has issued around 18.6 million credit cards as of January 2024. It has employed a broad-based strategy, providing a range of credit cards tailored to various consumer needs.

HDFC has issued 20.1 million credit cards as of January 2024. It adopts a segmented approach by crafting specialised credit solutions for distinct consumer categories taking wealth in account, emphasising its importance in catering to premium market segments with customised offerings.

Source: NPCI, SBI Report, CapTable, Poltee

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