DIGITAL LENDING

A $1 TRILLION OPPORTUNITY OVER THE
NEXT 5 YEARS

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PREFACE

WHILE 'DIGITAL LENDING' HAS been a buzz phrase in recent times, it has no universally articulated (and understood) definition. Due to this, the 'size of prize' has not been clearly stated, at least in the public domain. This report aims to (among other objectives) to define the phrase in the simplest possible manner and size the current as well as future (potential) market objectively. In order to do this, we have applied the only lens which ultimately matters: that of the consumer. Our definition of digital lending as well as sizing of the same is based on consumer behaviour and is grounded in extensive consumer research.

Defining the term 'digital lending' is important. While there could be several possibilities, in this report, we look at lending in the following product types: personal loans, two wheeler loans, four wheeler loans, SME finance and home loans. Furthermore, we have considered consumers acquired digitally (via digital channels or assisted digital channels) and consumer loan applications made digitally (i.e., via a form on a digital channel or an assisted digital channel). This definition allows for the sizing of 'ready and willing' consumers and does not consider supply side constraints like digital collateral evaluation (which we believe are issues solvable by lenders in the near future).

Our core insights in this report are sourced from extensive on ground consumer research (conducted by GFK) over a period of 4 months (Jan-Apr 2018). Three distinct types of research were carried out:

1. Quantitative research performed on a base of 2,364 consumers; 1,882 of these consumers had "purchased" a digital loan product in the last 12 months and the remaining 482 consumers intended to purchase over the coming 3 months (at the time of responding to the survey). All respondents were active internet users (accessed internet at least 4 days a week). The survey was conducted in 9 cities across 3 population brackets (55 percent from cities with 4 million+ population: NCR, Mumbai, Bangalore, Ahmedabad; 19 percent from cities with population in the range 1-4 million: Lucknow, Madurai; 23 percent from cities with population in the range 500,000 to 1 million: Bhubaneshwar, Kolapur, Jalandhar). 77 percent of respondents had a monthly household income (MHI) of less than Rs 60,000 per month (45 percent had MHI < Rs 40,000 per month). 1896 of the respondents were male and 468 of them were female. Respondents were distributed equally across the following age groups: 21-30, 31-40 and 41-55.

2. Digital tracking of 105 consumers, all of whom were in the middle of the buying process of the home loan product. In this methodol-

ogy, an application was installed in the mobile phone of the volunteer respondents, which enabled tracking of the end-to-end digital purchase process. Furthermore, these consumers were contacted offline periodically to understand the offline touchpoints. This tracking was done for a period of 4 months

3. Focus Group Discussion across 4 cities (Delhi, Bangalore, Nagpur, Bhubaneswar) to gather qualitative insights on buying behaviour

In addition to the primary research mentioned above, the report alludes to several insights gathered from secondary research as well as BCG case experiences on the topic.

A few key terms have been used across the report. 'Digital footprint' refers to consumers with access to the internet (access internet at least 4 times a week). A subset of these consumers are 'Digitally influenced', that is, consumers who used online channel at least once during the purchase process (for research and/or purchase). Further, a subset of these digitally influenced are 'digital purchasers', or buyers who applied for a loan online, i.e. filled an application form on an online channel for a loan product. As mentioned earlier, the scope of this report covers the following product types: personal loan, two wheeler loan, four wheeler loan, SME finance and home loans.

A few terms are used interchangeably:

1. Consumers / Customers / Loan seekers

2. Purchase / Buy

3. Digital / Online

4. Aggregators / Marketplaces

EXECUTIVE SUMMARY

AROUND THE WORLD, LENDING models in the last few years have seen frenetic activity. Initially, the juggernaut was led by fintechs but a few traditional lenders have followed suit. There are a few fundamental drivers which are all coming together to turbo charge this space. First, consumer behaviours are changing dramatically, shaped by experiences offered by internet giants. Second, there have been some rapid technological advances, led by the ever increasing penetration of smartphones as well as the proliferation of data. Third, the regulatory environment, is increasingly getting favourable with laws increasingly providing an impetus to the digital lending market. Finally, there have been some remarkable innovations in the operating models of lenders. These factors have played out similarly in India as well, resulting in an exponentially growing market.

Primary consumer research brings several interesting insights to the fore and validates India's readiness to adopt digital lending. Almost 50 percent of loan seekers with internet access actually purchased digitally over the last 12 months. Consumers are 'digital ready' across different product types. Digital behaviours are also not bounded by demographic factors; the old for instance demonstrate very similar behaviours as the young; digital behaviors are similar across genders as well as city tiers. Consumer journeys however are 'phygital' or hybrid; neither only digital nor only physical. Search engines and lender sites are the most important sources of research; consumers typically look for prices and eligibility. Interestingly, digital loan ticket sizes are comparable to that of physical loans.

Digital lending presents a large opportunity in the Indian context. It is estimated that the total retail loans which could be disbursed digitally in the next 5 years could be over $1 trillion. Annual digital disbursements 5 years hence would be nearly 5X that of current levels.

We expect this space to witness significant disruption in the days ahead. While the exact form and shape of disruption will only be unveiled over time, we have 10 predictions which will disrupt the digital lending landscape in India over the next five years:

- **Incumbents will fund / spawn NewCo Digital Attackers:** Realizing the full potential of digital lending in the country will require skills that do not adequately exist today with the incumbents. Moreover, the organization culture required to breed digital lending is very different from the legacy culture prevailing at traditional lenders. Therefore, lenders will fund/spawn new digital lenders.

- **Non-traditional companies with access to consumers will challenge incumbents:** Given the low penetration of credit in India, lending is an attractive business opportunity. Several non-financial services companies have entered the lending space over the last few years. We believe that non-traditional companies that have a strong brand, large consumer base as well as a strong distribution network will attack the lending market through innovative digital models.

- **New age fintechs will continue to innovate:** New age fintechs, with their lean organization and innovative operating models, will continue to offer agile and cutting edge products that will address current consumer pain points with taking a loan.

- **Data and analytics will disrupt the lending value chain:** Digitization of various databases and records has resulted in multi-fold increase in data of individuals and corporations being digitally available. With the consent layer of the India Stack being triggered, there would be both a proliferation as well as democratisation of data.

- **Industry platforms will become a reality:** A data utility combining data from multiple sources and operated through a consent architecture is a certainty and is not too far in the future.

- **Technology will change the face of the front end consumer experience:** Technological advancements will disrupt how consumers research and apply for a loan, as well as the onboarding experience. It will make the entire experience more intuitive, seamless and convenient. Some upcoming technologies can even disintermediate the channels that consumers rely on today for research, application or servicing.

- **Data and automation, linked with data explosion, will revolutionize underwriting, providing an option to offer credit to all:** Data explosion will give an impetus to the creation of big-data driven algorithmic lending models that will likely return a decision in minutes. Furthermore, these models will be self-learning, tuning themselves basis data from connected collections and payment systems. Such data-based automated underwriting will enable hitherto underserved / unserved segments to be served.

- **Technological advancements will enable full scale digitization of operations:** Technologies such as biometrics enabled authentication, e-signatures, e-mandates, AI, machine learning and block chain will enable 'zero human touch' lending and monitoring. Several back office (as well as many mid office) roles will become redundant in the near future.

- **Partnerships will fill capability gaps:** In order to build the new digital capabilities required to redefine consumer lending journeys and expand the scope of credit to those previously underserved, lenders will forge partnerships and collaborations—with credit bureaus, fintechs, technology companies and third party processors.

- **The lending organization will transform with dramatic shift in power bases:** Finally, the increase in the extent of digitization and automation will mean a shift in the power bases within the organization. As processes and underwriting become more automated, the 'importance' of erstwhile power centers like operations and credit will go down. Technology and data will emerge as the new power centers in the organization.

In this context, we outline a ten-point agenda for the industry to realise the opportunity:

- **Reimagine consumer journeys; simplify onboarding:** Consumers want an end-to-end frictionless experience and seamless onboarding. It is critical not to fall into the trap of just digitizing existing processes.

- **Drive personalization; one size does not fit all:** Personalize consumer experiences basis their individual needs and context. Leverage consumer data to customize interactions.

- **Create a data mindset:** It is imperative to demonstrate commitment from the top and make data an organization-wide 'movement'. The answer could be to create a separate data BU, with a strong leader and appropriate funding.

- **Develop the tech platform of the future:** Core enterprise technology needs a complete overhaul to be 'future-proof'. Ad hoc 'patches' are not sustainable in the long run. It is critical to build scalable tech but at the same time, equally critical to stage-gate investments with an RoI mindset.

- **Create a controlled environment for innovation:** A 'sandbox' approach will provide an enabling environment to lenders to experiment while containing consequences of failure.

- **Partner, Partner, Partner:** Multiple types of partnerships are crucial—bank-fintech partnerships, partnerships with eco-system (e.g., e-commerce companies) and even lender-lender partnerships (e.g., blockchain).

- **Multiply impact via industry wide platforms:** A data utility which brings various data pools together to facilitate digital lending and industry-wide use of blockchain can be clear game changers.

- **Build the 'digital ready' organization:** Digital talent is scarce and expect very different propositions from their employers compared to their traditional peers. Lenders need to balance technical skills of the new with business judgement and experience of the old.

- **Go agile @ scale:** Lenders need to break the current 'silos' in order to respond to the dynamic needs of their consumers. They need to create cross-functional sqauds and iterate rapidly to create minimum viable products which can be tested by users.

- **Manage the cultural transformation:** Shape of the organization will change, power centres will shift, many current roles will get redundant and a few new ones will need to be introduced. Winning lenders will be the ones who manage this change well.

Several stars have aligned to create a massive opportunity for lenders. The question that they need to answer is how ready they are to capitalize and disrupt this space. We actually think lenders don't have a choice. They either need to disrupt the market or risk being disintermediated by digital attackers.

DIGITAL LENDING: AN EXPONENTIALLY GROWING GLOBAL PHENOMENON

L ENDING IS UNDERGOING A fundamental transformation, from the 3-6-3 formula to the 3-1-0 system. There is an often quoted age old banking 'formula' of 3-6-3 i.e. raise deposits at 3 percent, lend at 6 percent and play golf after 3 PM! Internet giant Ant Financial's model illustrates the changing global order. Ant Financial introduced the 3-1-0 system: 3 minutes to decide, 1 minute to transfer the money and 0 human touch! As many as 5 million loans have already been disbursed through the 3-1-0 system to small businesses as well as individuals by Ant Financial[1].

Fintechs: The Harbingers of a Transformation

Fintech startups have been at the forefront of digital loans. They have capitalized upon the consumers' need for securing instant funds through a seamless experience. They leverage data heavily to completely automate underwriting of loans. Popular examples include Alibaba, Kabbage, Ondeck and Lending Club. It is estimated that over $160 billion of digital loans were extended by fintechs in 2017 and by 2020, this number is likely to exceed $220 billion. China dominates this space (with over 75 percent share of fintech digital loans in the world)[2]. The Chinese giants are today valued more than several legacy banking groups and are rapidly moving up the valuation leaderboard.

Banks: Spawning / Partnering with Fintechs

However, it must be emphasized that today, the digital lending market is no longer a niche defined by fintech startups and internet companies but one that has attracted the attention of traditional lenders with large balance sheets as well. For example, Goldman Sachs has launched Marcus, a digital consumer-lending platform that seeks to compete with fintechs. In October 2016, Marcus started offering personal loans of up to $30,000 and at the time of writing this report, Marcus has already disbursed more than $2 billion in loans. Marcus currently offers both digital saving and lending services to more than 350,000 consumers and loans made so far have returns-on-assets about four times higher than those of the overall group[3]. Encouraged by the rapid growth in the US, Goldman Sachs' Marcus is planning for an international expansion, starting with the United Kingdom, where it aims to launch an online deposit business this year. Another example is that of BNP Paribas, that has launched Hello Bank! in France, Germany, Belgium, Austria and Italy, reaching more than 2.5 million consumers[4]. It is branded as a full-range bank specifically designed for mobile phones. It offers loans, as well as savings, brokerage and insurance services.

In addition to starting their own digital lending startups, in recent times, incumbent banks have increasingly turned to partner-

ships. For example, National Australia Bank (NAB), has partnered with Xero, a cloud based accounting software solution, to augment data for underwriting. In India, ICICI Bank and Paytm have partnered to offer short term instant digital credit[5].

Four Key Factors Driving Global Growth in Digital Lending

The exponential growth in digital lending around the world has been enabled by four key trends:

1. The Internet Homo sapiens

2. Technological advances and big data

3. Enabling regulatory environment

4. Innovative operating models

THE INTERNET HOMO SAPIENS

Consumers are becoming increasingly digitally savvy. They use ride-sharing apps to get to work, order lunch on their smartphones, participate in fantasy football leagues with their colleagues, stream movies and shop for clothes, groceries & vacations online. Even in India, consumers have become accustomed to purchasing things online—with India's e-commerce market for fashion, consumer electronics, durables and grocery estimated to be between $18 to 20 billion in 2017[3]. While the trend may have started with retail, it has certainly penetrated the world of financial services as well.

This stark change in buyers' behaviours and expectations means that many consumers no longer need physical interactions with sellers to purchase a product. In fact, interactions in the digital world are strongly influencing purchase decisions. Today, buyers rely on online consumer reviews, social media, internet videos and sellers' official websites to collect information, establish trust and make purchasing decisions. While the millennials (commonly defined as those born between early 1980s and 1990s), have largely pioneered this approach, this kind of buying behaviour is certainly no longer limited to them. The older generations including parents and even grandparents are catching up.

As online channels have developed, some other interesting patterns have emerged. In online retail, purchasing and browsing peaks between 10:00 PM and midnight, with one in ten U.S. online shoppers still busy buying things between midnight and 3 AM. Even in financial services, consumer behavior is similar—e.g., Yu'eBao, now the World's largest money market fund, records 50 percent of its transactions outside of working hours with more than 20 percent of all transactions taking place between midnight and 5:00 AM, traditionally a counterintuitive time for making financial decisions. Consumers often find traditional working hours and brick and mortar stores out of reach due to their long working hours and therefore seek a 24X7 sales and service window[6].

TECHNOLOGICAL ADVANCES AND BIG DATA

Two-thirds of the world's population now has access to mobile services. The advent and advancement of smartphones has created a whole new world of economic activity available at one's fingertips. This surge has been coupled with rapid enhancements in mobile internet technology. When 1G technology was introduced in 1981, it was hard to imagine the amount and speed of data transfer that the subsequent 2G and 3G would support. While the latest technological generation i.e., 4G is still being introduced in many developing countries, 5G was recently tested in South Korea during the Olympics and is expected to be widely available across economies by 2020.

Many unicorns have emerged due to this technological revolution. A great example is Alibaba's Ant Financial. Conceptualized originally as a 'start up' to assist the sellers on the Ali eco-system, today, Ant Financial is valued at a staggering $150 billion[7]. From just a single use case, the company has grown to become a financial conglomerate and boasts of subsidiaries such as Alipay (payments), Yu'e Bao (investments) and Zhima credit (bureau) and meets the financial needs of China's hungry internet consumers and small firms—refer to exhibit 1.1.

The surge in use of smartphones and the internet for a variety of purposes has created an abundant and continued supply of data. As devices from smart watches to electric cars

OPEN SESAME
Credit Bureau – Develops credit rating for users based on past financial data

Online loans for business and farmers

3-1-0 model for loan approval using Big Data

Internet banking

AI

Big data

Bio Metrics

Payments

Shopping

Entertainment

WEALTH MANAGEMENT
Yu'e Bao – Largest money market fund

Provides financial services to individuals as well as businesses

A vast network of partnerships (online and offline) to provide consumers with an engaging ecosystem

Generates and analyzes consumption data from transactions throughout the ecosystem

Leverages Big Data and AI to understand behaviour and offer personalized financial services

Sources: Secondary sources, company presentations, BCG analysis.

connect to the internet, the volume of available data keeps increasing. For example, just the hourly transaction data of Walmart is 67 times bigger in volume than the total content contained in all books in the U.S. Library of Congress, the largest library in the world[3].

These large sets of data have already been used to transform parts of the financial services industry, helping companies create substantial value. For instance, Visa has used big data to decrease the average time to detect card fraud from one month down to only 13 minutes[3].
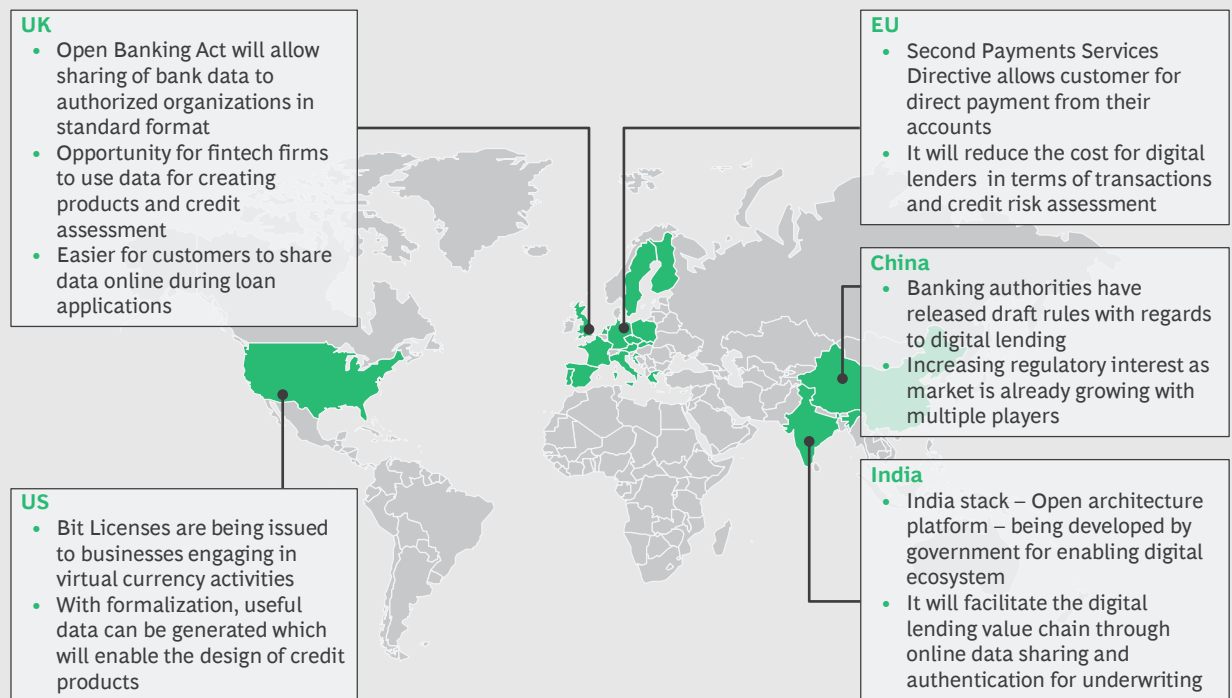
In addition to the rapid rise of mobile enabled data, the other technological advancements aiding digital lending include advancement in biometric tech—thumbprint, iris and now face recognition, instant payments, internet of things (e.g. wearables) and blockchain. Each of these are playing a critical part in the lending supply chain, biometrics in e-KYC and e-signatures, internet of things in underwriting, blockchain in underwriting as well as collateral / security valuation and instant payments for disbursements and repayments.

ENABLING REGULATORY ENVIRONMENT

Digital lending growth has been given a fillip in many countries by a supportive regulatory environment—refer to exhibit 1.2. The European Union's Second Payments Services Directive that came into effect in January 2018 allows consumers to pay directly from their accounts, rather than having to send their credit or debit card payments through a third party such as Visa or MasterCard (similar to the Unified Payment Interface of India). The United Kingdom has adopted the Open Banking Act which mandates the country's nine biggest banks to share consumer data in a secure, standardized form post consumer authorization (similar to the consent architecture of the India Stack).

Beyond data sharing, governments and financial regulators have taken notice of continued digital lending growth and are increasingly stepping in to regulate the sector, often demonstrating restraint and aspiration not to hinder its growth. British Financial Conduct Authority has launched Project Innovate to tackle regulatory barriers to allow firms to innovate in the interest of consumers. In the United States, BitLicenses are being issued by

UK
- Open Banking Act will allow sharing of bank data to authorized organizations in standard format
- Opportunity for fintech firms to use data for creating products and credit assessment
- Easier for customers to share data online during loan applications

EU
- Second Payments Services Directive allows customer for direct payment from their accounts
- It will reduce the cost for digital lenders in terms of transactions and credit risk assessment

China
- Banking authorities have released draft rules with regards to digital lending
- Increasing regulatory interest as market is already growing with multiple players

US
- Bit Licenses are being issued to businesses engaging in virtual currency activities
- With formalization, useful data can be generated which will enable the design of credit products

India
- India stack – Open architecture platform – being developed by government for enabling digital ecosystem
- It will facilitate the digital lending value chain through online data sharing and authentication for underwriting

Sources: Secondary sources, BCG research.

the New York State Department of Financial Services to businesses engaging in virtual currency activities. The China Banking Regulatory Commission has issued draft rules for online lending. Regulators in many developed economies like the UK, Singapore, Hong Kong, Australia and Dubai have created regulatory sandboxes to encourage, support and hasten innovation. Closer home, the Indian government has encouraged the emergence of new services by creating an open architecture for authentication and data access—the India Stack. This has enabled lenders to use digital identity and data to accelerate consumer acquisition as well as for underwriting, further boosting the growth of digital market.

INNOVATIVE OPERATING MODELS

The continued growth in digital lending has been fueled by innovative operating models adopted by fintechs, internet giants, big data disrupters and financial aggregators. The ecosystem of the types of digital lenders is expansive.

In terms of the nature of lending, there are several examples of innovative operating

models with four broad archetypes (non-exhaustive):

A few examples are provided below:

Independent platform: An independent platform is typically a fintech startup which lends to consumers directly (predominant operating model) without partnering with an incumbent bank. It does so by raising debt and equity funds through institutions. Consumers approach this type of platform through an online channel. Kabbage, a US-based company, has been utilizing proprietary technology to provide loans directly to small businesses and consumers through automated credit processes based on a variety of alternative information sources. Another American company, OnDeck, offers business loans up to $250,000 within a day, with underwriting based on a host of readily available information. OnDeck has so far extended more than $7 billion in loans to small businesses in the US, Canada, and Australia[8].

Aggregator / Partnership model: In such a model, fintechs acquire consumers and lend

to them by partnering with Banks. The value proposition of such fintechs include a scalable acquisition channel (likely achieved through partnerships with other internet companies such as e-commerce) and a proven underwriting model (e.g. time tested algorithms). BeeEye, an Israeli fintech, translates consumers' online web data into specifically tailored financial indicators. Those are then passed on to lending financial institutions, which combine these with internal consumer and financial data, using machine-learning methods to deliver improved risk and market prediction models. In essence, BeeEye offers lenders an alternative consumer credit score that predicts defaults, made more robust with data enrichment and advanced machine learning algorithms.

Peer-to-peer platform: Peer-to-peer lending has also been gaining steam in the global digital lending market. Peer-to-peer lending remains more popular in some countries than others. In Europe, 84 percent of peer to peer lending activity is concentrated in the United Kingdom. In 2017, UK P2P companies lent more than $11 billion[2]. In the United States, listed P2P company Lending Club supplies loans with a greater speed and efficiency than the big brick-and-mortar lenders and had extended loans worth more than $33.6 billion[8], by the end of 2017. In Mexico, Kubo Financiero digitally matches middle class and wealthy savers with SMEs and households seeking to borrow up to $25,000.

'Value+' service in addition to a core service: These models are built around existing large businesses. It is designed as a 'value-add' to consumers of such businesses. A few examples are models of instant messengers, telco companies and cab aggregators.

WeBank, an online only bank in China, whose biggest shareholder is Tencent, in 2015 started offering unsecured small loans via WeChat/ QQ app. Since early 2018, Tencent Credit has started providing user scores, similar to credit scores, ranging between 300 and 850 to all Chinese nationals who use WeChat or QQ. Depending on their score, users can access a number of different services and perks, including a waiver on deposits for housing rentals, riding metro or bikes for free[8].

Telcos are predominantly operating in the underbanked and mass market segments. In Kenya, Airtel's Kopa Chapaa uses existing consumer base to provide short-term mobile loans for low-value cash emergencies. In Pakistan, Telenor has struck a strategic partnership with Alibaba's Ant Financial to further develop Telenor Mobile Bank's payment and digital financial services. While telcos bring unbanked segments into the formal lending economy through innovative credit scoring, they also provide innovative new sales channels.

Singapore-based Grab has ventured into lending to the company's business consumers, primarily drivers, with support from investors such as Toyota. Grab will leverage data collected on its drivers, including telemetrics, user ratings and social media, to build a Big Data ecosystem that creates an accurate risk profile for each driver. Based on this risk profile, Grab will lend 'nano-loans' for buying a car or for working capital requirements at a low cost. Grab already has a loan book of $700 million, and is expected to partner with big names in the financial services space, including Japanese lender Credit Saison and US insurer Chubb to expand the program further, with a goal of building a reliable alternative to traditional credit for the unbanked majority of consumers and small businesses in Southeast Asia[2]. Other examples of captive models include e-commerce companies such as Amazon lending to their seller base.

NOTES:
1. Bloomberg, secondary sources, BCG research
2. Secondary sources, BCG Fintech Control Tower research
3. Secondary sources, BCG research
4. BNP Paribas website, secondary sources
5. Company websites, BCG research
6. BCG China research
7. Bloomberg
8. Company website, secondary sources, BCG research

INDIA GETTING READY TO RIDE THE DIGITAL LENDING BOOM

JUST AS IN THE global context, new age fintechs in India have been at the forefront of disrupting the lending market. The early fintechs made inroads primarily through lending in the internet ecosystem (e.g. lending to the sellers of e-commerce platform). Today, there are over 1,000 fintechs operating in India and their digital models have assumed a broader scope and coverage. The response from banks has been to pursue use cases which are quick wins and which have a high impact, e.g., digitally lend to captive consumers. This, typically in products which do not involve collateral (e.g., 10 second Personal Loan from HDFC Bank). Further, banks have not only partnered with fintechs but have also been busy digitizing the lending value chain (e.g., biometric KYC, pre-approved home loans etc.). Moreover, non-financial players are entering the NBFC market in a big way by offering digital / semi-digital propositions (e.g., automobile OEM NBFCs). These competitive forces fueled by consumer demand are resulting in a digital lending boom in India.

Global Trends Playing Out in India as Well

The four factors driving growth of digital lending are playing out in India as well:

1. The internet Homo Sapiens

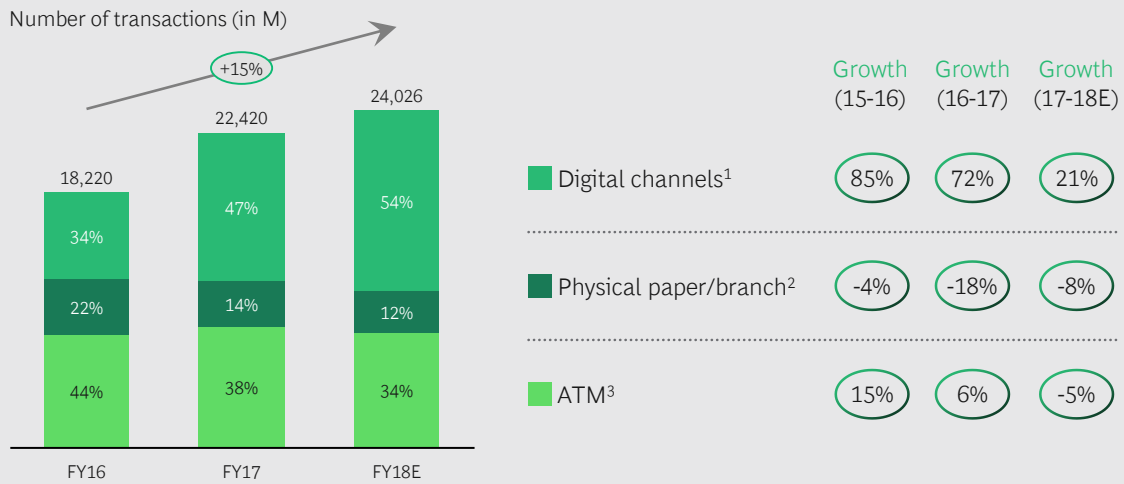2. Technological advancements and big data

3. Enabling regulatory environment

4. Rapid rise of innovative models

THE INTERNET HOMO SAPIENS

In this increasingly digital age, behavioral patterns of Indian population are changing as well. Indians are engaging in online purchase across categories. In terms of online retail category for instance, currently, there are more than 90 million online shoppers in India, eight times more than only five years ago. The pace of change of behavior is rapid and exponential—e.g., five years ago, only around 7 percent of urban Indian internet users with digital age (defined as time since first use of internet) less than 2 years engaged in online shopping activities. Today, more than 30 percent do so. While online banking has trailed online shopping by 2 years (in terms of % adoption), the growth is at a faster click. For instance, 10 percent (v 23 percent for online shopping) urban users had adopted online banking in 2016 and by 2020, this is expected to increase to 32 percent (v 37 percent for online shopping)[1].

The number of total transactions processed by banks over FY16 to FY18 grew by 15 percent to reach 24 billion—refer to exhibit 2.1. Digital transactions grew at 21 percent in FY18 while transactions based on branch/paper/physical channels decreased by 8 percent and ATM transactions reduced by 5 percent.

Exhibit 2.1 | Dramatic Shift in Transaction Profile of Banks

Number of transactions (in M)

	Growth (15-16)	Growth (16-17)	Growth (17-18E)
Digital channels[1]	85%	72%	21%
Physical paper/branch[2]	-4%	-18%	-8%
ATM[3]	15%	6%	-5%

FY16: 18,220 — Digital channels 34%, Physical paper/branch 22%, ATM 44%
FY17: 22,420 — Digital channels 47%, Physical paper/branch 14%, ATM 38%
FY18E: 24,026 — Digital channels 54%, Physical paper/branch 12%, ATM 34%

+15%

Sources: FIBAC Productivity Survey 2018; RBI data; IBA data; BCG analysis.
[1]Digital transactions include mobile, ECS (which can be initiated through offline or online channels), POS and internet transactions
[2]Physical / paper-based / branch-based transactions includes NEFT (initiated within branches), cheque and cash transactions (counter cash transactions within the bank)
[3]ATM includes withdrawals, deposit transactions at ATM and CDMs. ATM and Mobile transactions included are financial transactions

These statistics indicate that consumers are becoming more comfortable with doing digital transactions and are relying lesser on bank branches.

Technological advancements and big data

Technological advancements seen globally are playing out in India as well. Mobility (especially mobile internet), cloud (e.g., proliferation of software as a service), host of public and private APIs (e.g., India stack related) and big data & analytics linked technologies (e.g., data lake) are critical pieces in India's technology stack.

With 1.18 billion mobile subscribers at the end of 2017, India is second in the world, just behind China (1.4 billion). On an annual basis, Indians today do 340 billion online searches, view 810 billion web pages, watch 53 billion online videos, and make 300 million e-commerce transactions and 8 billion digital banking transactions. As of Dec 2017, India ranks second in terms of mobile internet users (~450 million compared to China at 750 million users). Interestingly though, in terms of mobile data traffic per smartphone, India consumes 5.7 GB per month, whereas

the equivalent number for China is 2.3 GB per month[2].

Unprecedented amount of Indian consumer data is being generated through web search, social media, e-commerce and banking. For enterprises, for instance, more than 25 data points such as corporate filings, tax data, legal records and directors details are now electronically available. Lenders are already leveraging big data to reduce the cost of consumer acquisition, improve underwriting models and to establish early warning systems. With financial services increasingly moving in this direction, big data is likely to be one of the key pillars of the digital lending boom in India.

Jan Dhan, the financial inclusion scheme to ensure access to financial services in an affordable manner has opened more than 550 million banking accounts in the last two years. As a consequence, over 90 percent of India's households have access to banking services. Nearly 1.2 billion people have been enrolled in the Aadhaar scheme as of early 2018, bringing 90 percent of India's population into its fold and making Aadhar the world's largest biometric database[3].

As part of India Stack, the Indian authorities have made a set of open API's readily available to developers. This new digital architecture can make presence-less, paperless and cashless delivery of services and consent-based sharing of data possible across the country. With JAM and India stack, end-to-end digital lending is now a reality—refer to exhibit 2.2. While the paperless, presence-less and cashless layers are live and have already had a transformative impact, the fourth layer i.e. that of consumer consent is likely to have a massive impact on the financial services industry.

India's credit bureau infrastructure is amongst the best in the world. When it comes to coverage, the country performs very well on individual coverage. This is well documented in global indexes, where India scores higher than some OECD countries on certain credit specific parameters such as the depth of credit information index. In the widely followed annual Doing Business Report produced by the World Bank Group, India ranks 29th on ease of getting credit in 2018 (up from 44th in 2017). Specifically, India scores well on strength of legal rights and depth of cr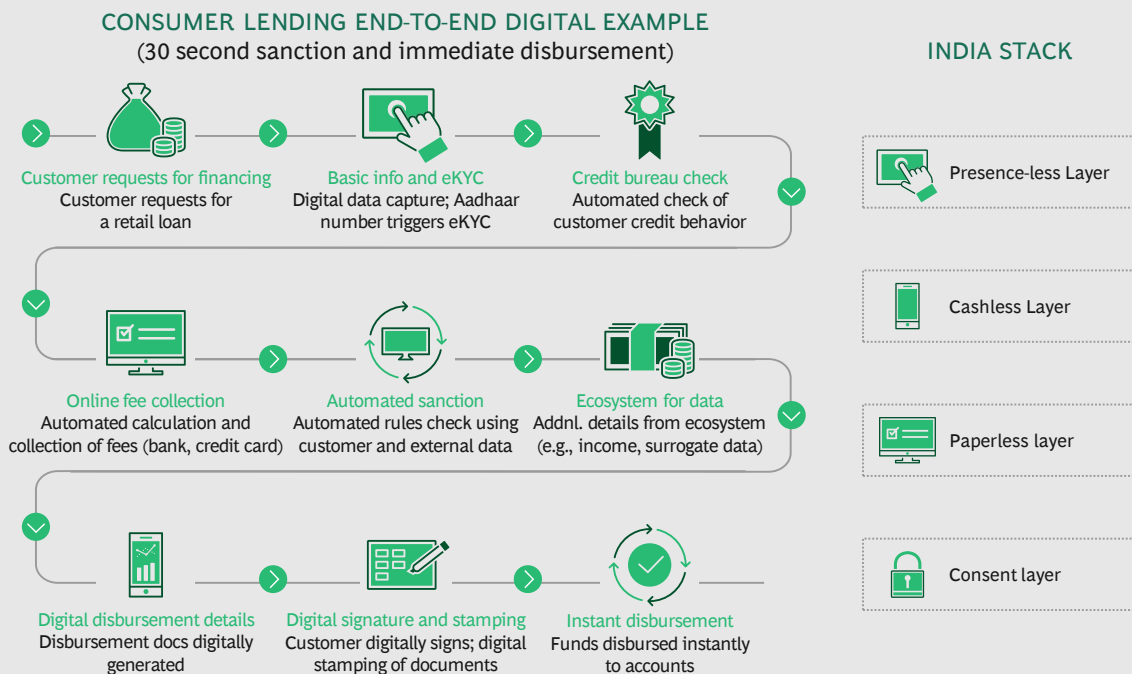edit information. The World Bank also re-cords that the credit bureau coverage of adults has increased from 10.8 percent in 2007 to 43.5 percent currently. However, it needs to be emphasized that while coverage of individuals is good, MSME bureau coverage remains low at only 10 percent necessitating the need for alternate / proxy data sources in MSME underwriting.

With increasing digitization, more 'new to credit' (NTC) consumers are expected to come into the fold of formal finance—thus enhancing bureau coverage further. As evident in exhibit 2.3, the share of NTC consumers varies across products. With growth in bureau coverage over the years, the share of NTC is also reducing at pace. For instance, NTCs have reduced from 32 percent in FY 14 to 20 percent in FY 17, at an overall retail credit level.

Enabling regulatory environment

Along with consumers and the digital ecosystem, the Indian regulatory environment has also evolved rapidly over the last few years. When it comes to digital lending, India has leapfrogged many advanced economies. By setting up open architecture layers such as Aadhar, UPI, Bharat Bill Payment System and

EXHIBIT 2.2 | India Stack: End to End Digital Lending Now a Reality

CONSUMER LENDING END-TO-END DIGITAL EXAMPLE
(30 second sanction and immediate disbursement)

INDIA STACK

Customer requests for financing
Customer requests for a retail loan

Basic info and eKYC
Digital data capture; Aadhaar number triggers eKYC

Credit bureau check
Automated check of customer credit behavior

Online fee collection
Automated calculation and collection of fees (bank, credit card)

Automated sanction
Automated rules check using customer and external data

Ecosystem for data
Addnl. details from ecosystem (e.g., income, surrogate data)

Digital disbursement details
Disbursement docs digitally generated

Digital signature and stamping
Customer digitally signs; digital stamping of documents

Instant disbursement
Funds disbursed instantly to accounts

Presence-less Layer

Cashless Layer

Paperless layer

Consent layer

Sources: FIBAC Productivity Survey 2017; RBI data; IBA data; BCG analysis.

EXHIBIT 2.3 | Share of New To Credit (NTC) Customers

NTC Share of new accounts (%)

Gold loan	Personal loan	Consumer Durables	BL - Agri	Credit card	Auto loan	Others	Home loan	BL - General	2 wheeler loan
11%	19%	22%	24%	25%	31%	35%	36%	46%	61%
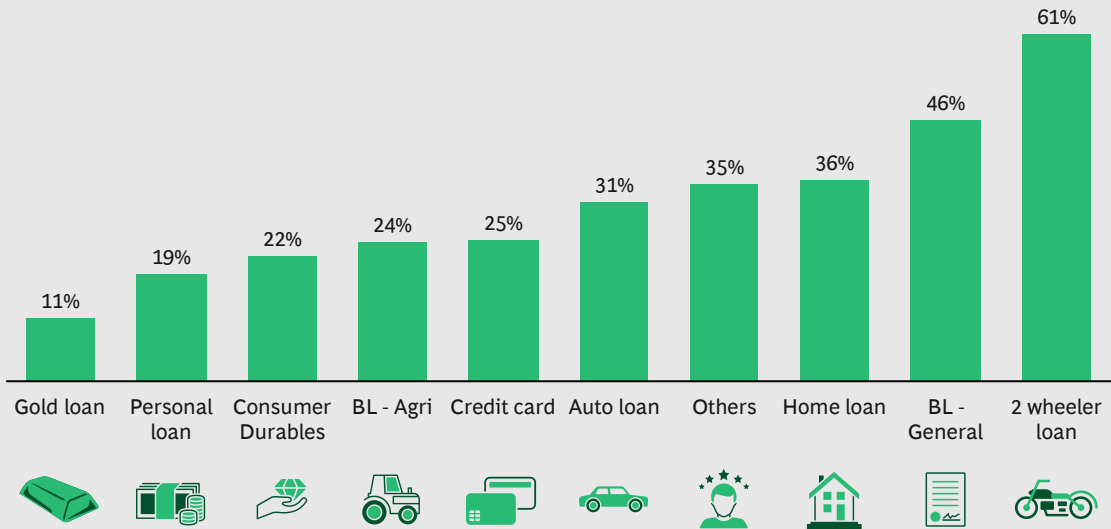
Sources: TransUnion CIBIL data and analysis, BCG analysis.
[1]NTC defined as a borrower with no pre-existing bureau history
[2]2017 calendar year figures estimated based on Q1 and Q2 data

GST and pushing cashless transactions post demonetization, the government has been actively helping in the expansion of a robust digital ecosystem.

With the introduction of GST, the government has setup the GST Network (GSTN), a non-profit jointly owned with private sector companies, to create and manage IT solutions related to GST. As a part of the GSTN, an ecosystem of GST Suvidha Providers (GSPs) is being created to provide technology infrastructure to businesses for various GST related services like registration, filing of returns, payments monitoring and ledger maintenance.

In order to facilitate lending for MSMEs, the government has setup Trade Receivables Electronic Discounting System (TReDS), an electronic platform to auction trade receivables. So far, the RBI has given license to three entities: Receivables Exchange of India (RXIL), which is a joint-venture between National Stock Exchange and SIDBI; Invoicemart, a joint-venture between Axis Bank and Mjunction Services; and Mynd Solution (M1Xchange). As on May 31, 2018, 69 Buyers (including 19 PSUs), 196 MSME Vendors and 28 Financiers were registered on the RXIL

TReDS platform and 7,387 invoices aggregating RS. 3.4 billion have already been factored[4]. The Finance Minister has already suggested the potential linking of GSTN to TReDS in his Union Budget 2018-19 speech, to ensure smoother online sanctioning of loans. Both entities together will play a crucial role in enabling a secure and efficient digital lending environment for MSMEs.

Another transformative move by the government has been the launch of Government e-Marketplace (GeM) as a central online portal for procurement of all goods and services required by government departments, organizations and PSUs. So far, over 100,000 sellers have registered on the portal, covering procurement of more than 300,000 products[5].

Furthermore, in the most recent budget, Indian authorities have set up a group in the ministry to help devise institutional development measures to help fintech companies to grow. State governments have started following suit as well. For instance, the Maharashtra government is easing the path for fintechs with a Rs 2 billion allocation for setting up fintech hubs in Mumbai, Nagpur and Pune. Other related initiatives like Digital In-

dia Land Records Modernization Programme that aims to digitize important documents and create a central repository, will go a long way in boosting digital and data-enabled transactions in India[2].

Rapid rise of innovative models

Over the last 7 years in India, more than 1000 fintechs have been founded, raising more than $2.5 billion for activities that are disrupting financial services at a pace never seen before, across the spectrum, from lending to investments[2]. Pioneered by fintech players, multiple new models of doing business have emerged. A few examples of models are as below:

1. Point of Sale transactions based lending

Using data from POS machines, companies like NeoGrowth have built a proprietary technology platform to offer unsecured loans to merchants. NeoGrowth has raised more than $90 million, from investors. NeoGrowth offers loans ranging from Rs 500,000 to 15 million to merchants in 21 cities. They have witnessed a 65 percent renewal rate thus far.
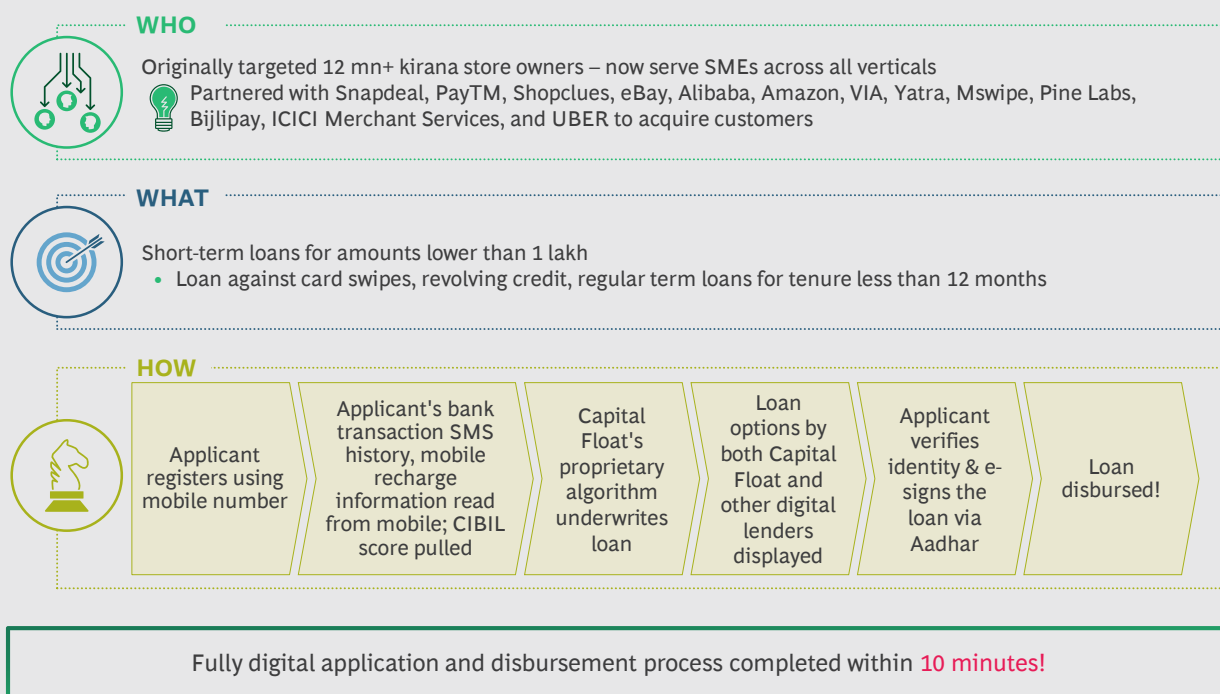
Neogrowth model features automatic daily repayments, which has been received well by its consumers[2].

2. Bank-fintech partnership models

Fintechs like Indifi have partnered with banks targeting specific SME segments such as travel agencies and the HoReCa segments (Hotels, Restaurants, and Cafes). Indifi partners with 'data aggregators' and leading marketplaces like MakeMyTrip and Swiggy, in each segment, that provide transaction data to assess the risk profile of borrowers. The products are tailored to each segment, with 30-60 day unsecured loans ranging between Rs 50,000 to 500,000 for travel agents and one-two year-long, high-ticket loans for the HoReCa segment[2].

Capital Float is another fintech which operates on a hybrid model (partnerships as well as independent financing). An example of an innovative solution offered by Capital Float is shown in exhibit 2.4. Such models enable lenders to reach out to underserved segments at a low operating cost.

Exhibit 2.4 | Capital Float—Bringing Access to Working Capital to Under-Served SMES

WHO

Originally targeted 12 mn+ kirana store owners – now serve SMEs across all verticals
Partnered with Snapdeal, PayTM, Shopclues, eBay, Alibaba, Amazon, VIA, Yatra, Mswipe, Pine Labs, Bijlipay, ICICI Merchant Services, and UBER to acquire customers

WHAT

Short-term loans for amounts lower than 1 lakh
• Loan against card swipes, revolving credit, regular term loans for tenure less than 12 months

HOW

| Applicant registers using mobile number | Applicant's bank transaction SMS history, mobile recharge information read from mobile; CIBIL score pulled | Capital Float's proprietary algorithm underwrites loan | Loan options by both Capital Float and other digital lenders displayed | Applicant verifies identity & e-signs the loan via Aadhar | Loan disbursed! |

Fully digital application and disbursement process completed within 10 minutes!

Source: Capital Float.

3. Invoice discounting exchanges

Fintechs such as KredX aim to disrupt the SME lending market by helping businesses achieve their short-term working capital needs by discounting their unpaid invoices (raised against blue chip companies) to a network of buyers/financiers including banks, NBFCs, wealth managers, and retail investors. After raising the invoice, the SME lists the invoice on KredX at a certain discount; on successful payment of the invoice, the full amount gets credited to the investors directly.

4. Marketplaces

Marketplaces like Paisabazaar are focused on meeting the financial needs of consumers but also by providing consumers with the choice of the financial institution (manufacturers of the product). In addition to this, marketplaces are also focused on digitizing the entire supply chain in order to provide the consumers a seamless end-to-end digital experience.

An example of an innovative solution offered by Paisabazaar for the credit needs of millenni-

als is shown in exhibit 2.5. 'Impulse purchase' needs and 'emergency cash' requirements can be met through such operating models.
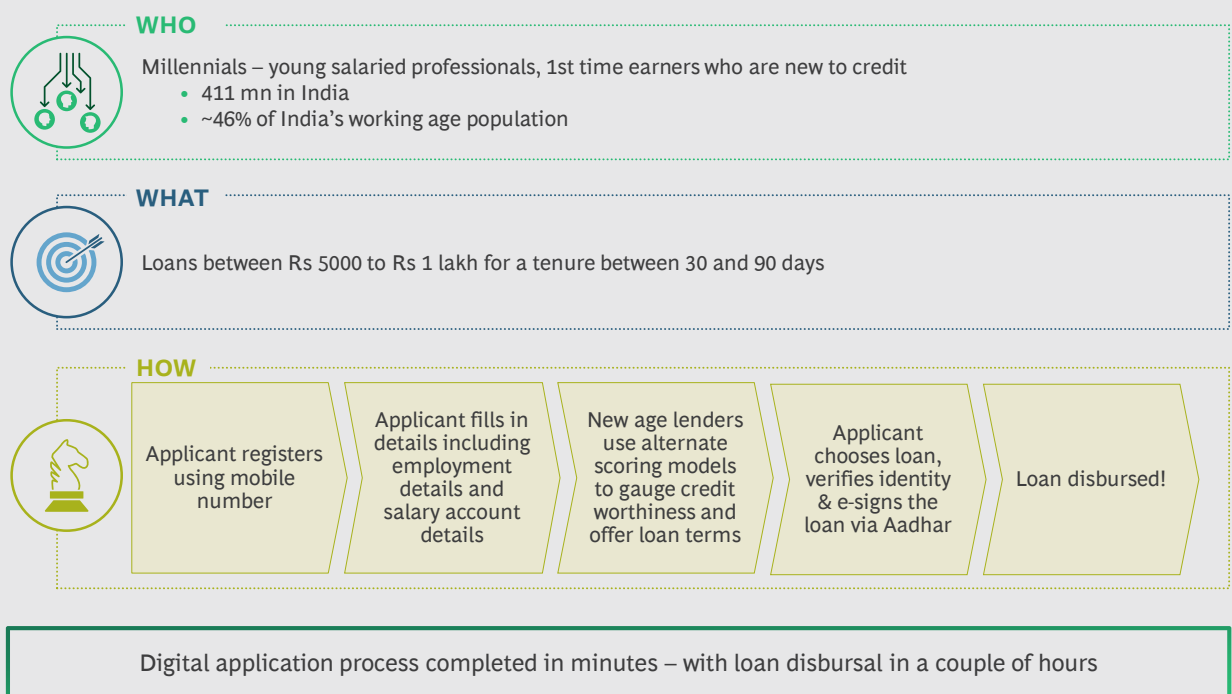
5. Bank-led digital models

While several banks have launched pure digital savings account acquisition journeys, a few banks like Kotak Mahindra Bank are leveraging this digital platform to sell loan products as well—refer to exhibit 2.6. The Bank's 811 application is also being leveraged to acquire new to bank consumers for credit cards. Another example is HDFC Bank's 10 second personal loan proposition where the bank is leveraging its digital assets to offer an end-to-end digital experience to its consumers.

6. 'Captive' models, especially by non-financial players

An ominous trend which is emerging is that of non-financial players launching lending solutions to their captive consumer base. These are either through partnering with NBFCs or by spawning their own NBFCs.

EXHIBIT 2.5 | Paisabazaar—Digitizing Short Term Loans for Millennials

WHO

Millennials – young salaried professionals, 1st time earners who are new to credit
- 411 mn in India
- ~46% of India's working age population

WHAT

Loans between Rs 5000 to Rs 1 lakh for a tenure between 30 and 90 days

HOW

Applicant registers using mobile number → Applicant fills in details including employment details and salary account details → New age lenders use alternate scoring models to gauge credit worthiness and offer loan terms → Applicant chooses loan, verifies identity & e-signs the loan via Aadhar → Loan disbursed!

Digital application process completed in minutes – with loan disbursal in a couple of hours

Source: Paisabazaar.

Pull credit score	Identify eligible customers	Display offers to customer	Capture biometric KYC
• Customer is asked whether she wants to view her credit score for free • 85% of customers opt-in	• Business Rule Engine decides credit worthiness basis customers bureau data	• Eligible customers are shown upto 3 credit card offers, in the savings account journey	• Credit card is dispatched to the customer once biometric KYC is completed

Launched in Nov 2017, with product NPS in top quartile across categories for the Bank

Source: Kotak Mahindra Bank.

Some examples of partnerships in recent times include cab tech companies like Uber and Ola partnering with Banks like SBI to introduce financing solutions to their drivers. E-commerce fintech partnerships have been playing out over the last 3-4 years. Xiaomi, the Chinese mobile handset manufacturer, has launched a credit program for its consumers in India. This is in partnership with KreditBee.

A few players plan to execute this through their own NBFC. Examples include Flipkart which has recently applied for an NBFC license. Automotive sector is also seeing traction with OEMs as well as digital attackers such as Cars24 planning to launch new age digital NBFCs.

7. Peer to peer (P2P) lending

Fintechs like Faircent have emerged in this space. P2P model aims to meet the demand of borrowers through supply from HNIs / affluent segments as well as in who have excess liquidity and are looking to deploy cash in as alternative assets class. RBI recognizes

these lenders as a separate category called NBFC-P2P.

While these innovative models are gaining a foothold in the lending market, they are by no means the only ones available. One thing is for certain, this space will continue to see rapid innovation and investor interest. Incumbents who ignore this threat would do so at their own peril.

NOTES:
1. BCG Centre for Consumer Insight
2. Secondary sources, BCG research
3. UIDAI, RBI, Secondary sources
4. SIDBI, Secondary sources
5. GeM, BCG research

INDIAN CONSUMERS READY TO MAKE DIGITAL LENDING THE NEW NORMAL

I N ORDER TO DECODE the size and opportunity of digital lending, a detailed consumer research was undertaken. The objective of the research was to gain insights around consumer behavior across the purchase journey, from need origination, to research, to decision and finally to the actual purchase. The preface of this report provides details of the consumer research parameters and the definitions of terminology to follow.

Insights from the Consumer Research

The consumer research threw up many interesting insights. Many data points confirmed our going in hypotheses while others challenged them.

The following are the top 10 insights from the research:

1. 50 percent of loan seekers with internet access 'buy' online

2. The Indian consumer is 'digital ready' across loan product categories

3. Consumers across demographic segments exhibit similar 'digital behaviors'

4. Consumer journeys are 'phygital'

5. India is already mobile first; smartphones are the device of choice

6. Search engines and lender sites are the most important digital touchpoints, followed by online marketplaces

7. Price comparison and eligibility matter most to consumers researching online

8. Referrals largest influencer; word of mouth increasingly going social / online

9. Convenience and trust key barriers to digital research

10. Digital ticket sizes comparable to physical purchases (in fact marginally higher)

Below is a closer look at these insights:

50 PERCENT OF LOAN SEEKERS WITH INTERNET ACCESS "BUY" ONLINE

First, the digital footprint of consumers in the financial services category is 50 percent. Second, of these consumers (with digital footprint), 55 percent are digitally influenced (see preface for definition). In other words, of the entire population, 55 percent of 50 percent, i.e. 28 percent are digitally influenced. Third, of these consumers (with digital footprint), 47 percent purchase digitally today. In other words, of the entire population, 47 percent of 50 percent, i.e. 23 percent are digital purchasers (see preface). An interesting observation is that 80 percent of digitally influenced consumers are digital purchasers. There is very little

drop off between digital research and digital purchase.

As exhibit 3.1 shows, 23 percent of consumers 'buy' online and that is nearly 50 percent of the consumers with digital footprint (access to internet).

The Indian consumer is 'digital ready' across loan product categories

Influence and purchase are high across product categories with influence ranging from 55-65 percent and purchase from 45-55 percent - refer to exhibit 3.2. The digital influence and purchase are slightly higher in SME and personal loans categories. These products typically have no collateral backing (true only for lower end of SME lending) and lenders have built and aggressively marketed end-to-end digital supply chains. This is corroborated by the query trends on Google India. Personal and SME loan queries grew the fastest between Jan 2017 and Jan 2018 (82 percent and 61 percent respectively).
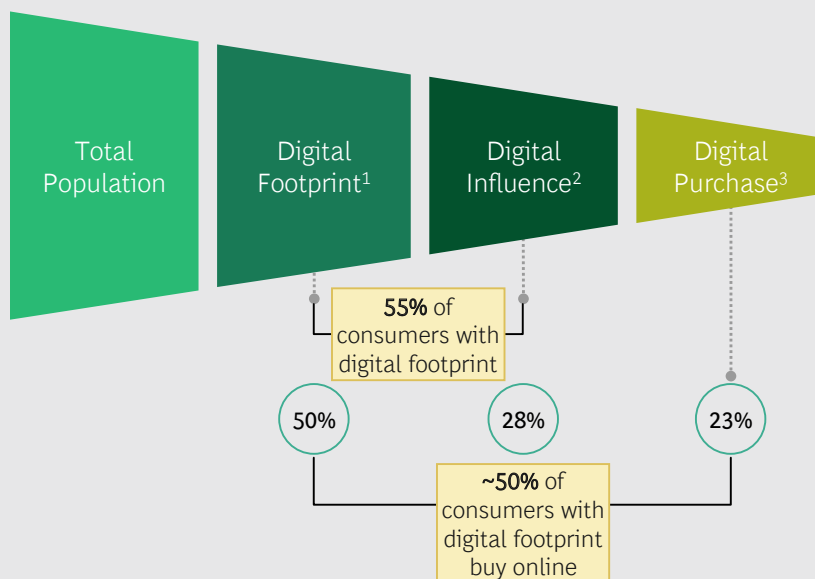
The fact that consumer behavior is similar in other retail loan categories (such as home

loans and auto loans) is a clear indication of the readiness of the Indian consumer. These products have been traditionally brick and mortar dominant journeys—e.g. dealer originations for auto loans. However, the research indicates that consumer journeys are dramatically shifting to digital not just for loan purchases but also for research and purchase of the underlying assets. Car purchase journeys for instance have over 80 percent digital influence (amongst internet users). Increasingly, consumers are comfortable researching, purchasing and securing the right car loan from the comfort of their homes. The same is true for home loans.

Consumers across demographic segments exhibit similar "digital behaviors"

In the early days of the internet boom, the users were primarily millennial, male and metro residents. That is now history, with all of India going online. Interestingly, research shows the same regarding consumer behavior for digital lending. Exhibit 3.3 shows that this behavior is within a narrow range across demographic segments, be it age, sex or occupa-

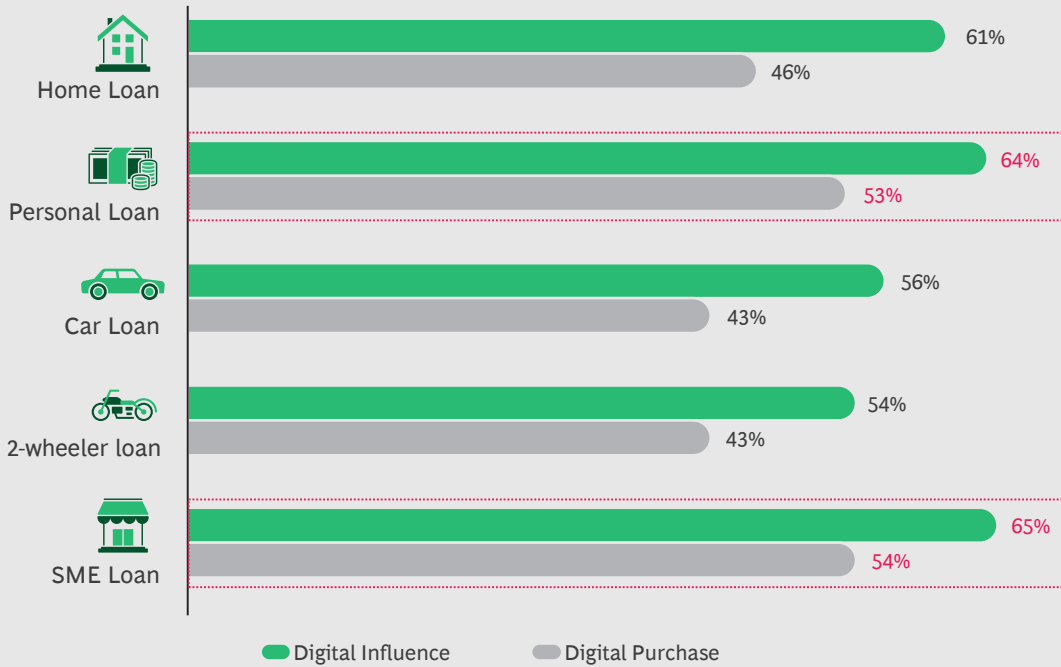Exhibit 3.1 | 23% Consumers Purchase Retail Loan Digitally Today

Total Population

Digital Footprint[1]

Digital Influence[2]

Digital Purchase[3]

55% of consumers with digital footprint

50%   28%   23%

~50% of consumers with digital footprint buy online

Sources: BCG Google 2018 Digital Lending Survey (N=2364), conducted among users who purchased a loan in the last 12 months or were intending to purchase in the next 3 months), BCG analysis.
[1]% Indian FS consumers who have access to internet ; data as of 2017 ; source : BCG CCI
[2]Percentage consumers who used online channel at least once during the purchase process (for research and/or purchase of in scope financial product) ; source : GFK survey 2018
[3]Percentage buyers who applied online , i.e. filled an application form on an online channel. Basis categories: Home Loan (23%), Personal Loan (27%), Car Loan (21%), 2W Loan (21%), SME Loan (27%)

EXHIBIT 3.2 | SME Loans and Personal Loans have Highest Digital Influence as well as Purchase

Home Loan
- Digital Influence: 61%
- Digital Purchase: 46%

Personal Loan
- Digital Influence: 64%
- Digital Purchase: 53%

Car Loan
- Digital Influence: 56%
- Digital Purchase: 43%

2-wheeler loan
- Digital Influence: 54%
- Digital Purchase: 43%

SME Loan
- Digital Influence: 65%
- Digital Purchase: 54%

● Digital Influence   ● Digital Purchase

Sources: BCG Google 2018 Digital Lending Survey (N=1882), conducted among users who have purchased a loan in the last 12 months), BCG analysis.

EXHIBIT 3.3 | Influence Goes Beyond the 3 M and Salaried
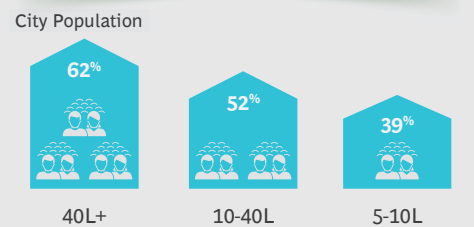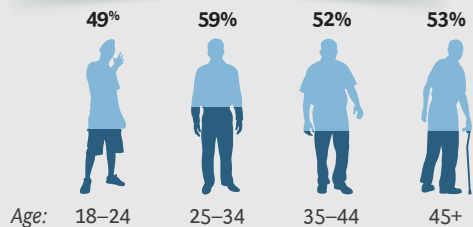
% OF BUYERS WITH INTERNET ACCESS

Occupation[1]
- Salaried: 60%
- Self-Employed: 53%
- Other: 42%

Gender
- Male: 54%
- Female: 56%

Geography

City Population
- 40L+: 62%
- 10-40L: 52%
- 5-10L: 39%

Age Group
- Age: 18–24: 49%
- 25–34: 59%
- 35–44: 52%
- 45+: 53%

Sources: BCG Google 2018 Digital Lending Survey (N=2364), conducted among users who purchased a loan in the last 12 months or were intending to purchase in the next 3 months, BCG analysis.% of people using a particular touchpoint.
[1]Salaried: clerical/salesman, supervisory level, Jr/Mid/Sr. executives. Self-employed: petty trader, shop owner, businessmen, self employed prof. Others: Student, Retired, Housewife

tion. Though there is difference across city tiers, even on that dimension, the smaller towns are catching up rapidly and the absolute numbers are already large.
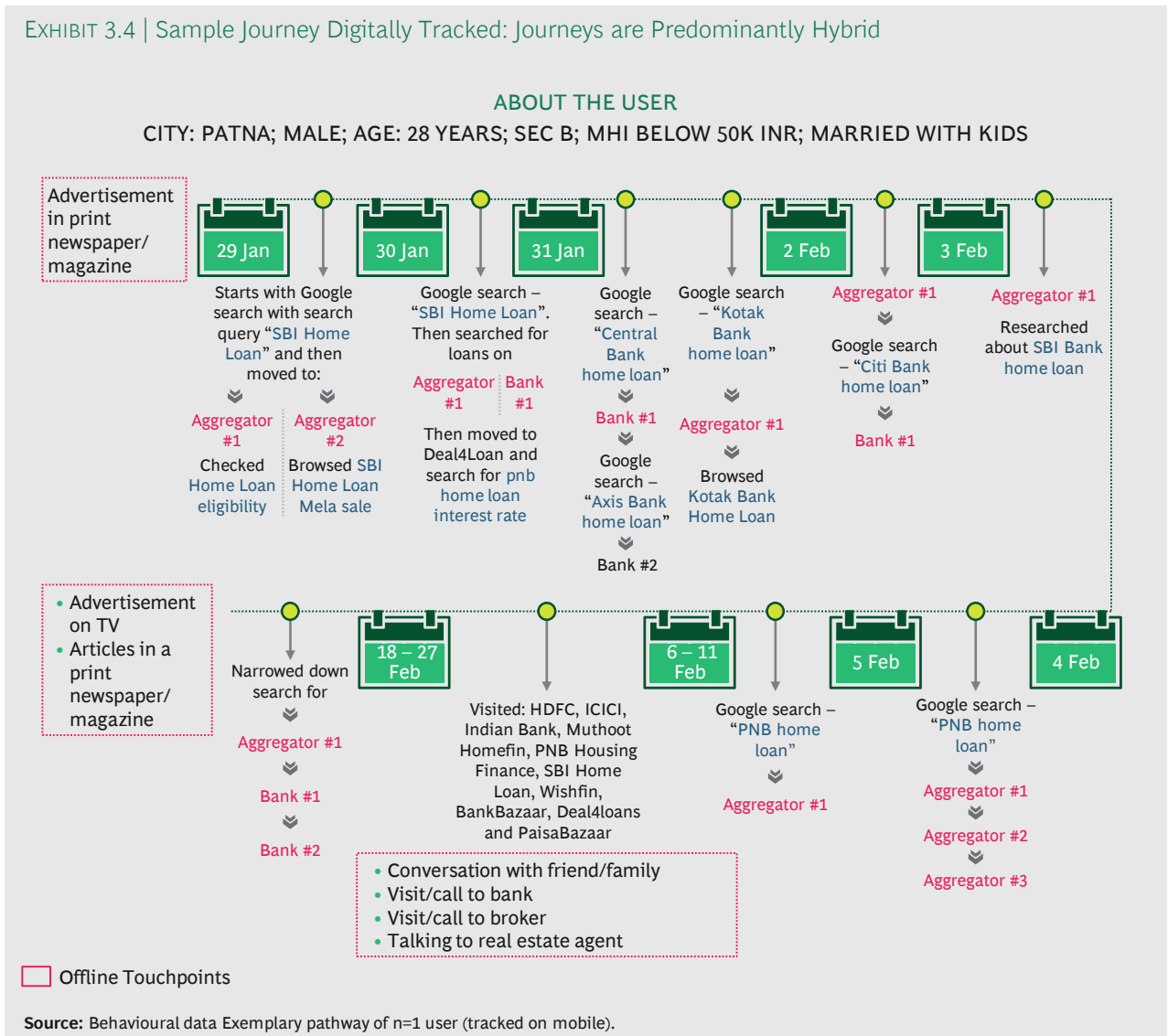
There is no such thing as a 'digital boundary'. More than 50 percent of consumers from developing cities (population range of 1 to 5 million) are being influenced online in their decision-making. Additionally, digital influence on middle-aged and older segments is growing, with consumers becoming more aware and mature in terms of digital usage. Digital influence extends to over 50 percent of self-employed individuals. While digital influence is equal amongst men and women, a higher proportion of women end up purchasing loans online than men. This opens up the entire market for digital disruptors.

CONSUMER JOURNEYS ARE "PHYGITAL"

Not surprisingly, the research identified that consumer journeys are hybrid, a combination of physical and digital, coined as "phygital". As a part of the research, more than 100 home loan seekers were digitally tracked through an app installed on their mobile phones—driving an understanding of their online activities, sites used, search preferences, etc.

Journeys were predominantly found to be hybrid (refer to exhibit 3.4)—with both online and offline touchpoints. On average, digital touchpoints were greater than physical ones. Digital touchpoints involved an average of 14 visits to 5 different sites, with an average of 22 minutes spent online. Physical touchpoints involved on average 7 offline touchpoints for home loans.

EXHIBIT 3.4 | Sample Journey Digitally Tracked: Journeys are Predominantly Hybrid

ABOUT THE USER

CITY: PATNA; MALE; AGE: 28 YEARS; SEC B; MHI BELOW 50K INR; MARRIED WITH KIDS

Source: Behavioural data Exemplary pathway of n=1 user (tracked on mobile).

Journeys typically start with a physical touchpoint (word of mouth is still a winner!) then move to a digital touchpoint such as search. From here, the consumer is directed to other digital touchpoints such as lender websites. In parallel, the consumer constantly explores options by visiting physical touchpoints such as bank branches. The search is typically exhaustive and often time-consuming, as consumers explore multiple lenders and different terms. Our study indicates that the research phase on average was 113 days for a home loan. Metro consumers often take longer to research than consumers from smaller cities. Our hypotheses for this involved search and purchase journey is that the consumer is looking for a home loan in parallel to closing a home deal and hence is in no hurry. In addition, perhaps, the consumer is shopping for the best possible price. The journeys often culminate with the consumer filling a form on an aggregator site / app or on a lender site. End-to-end digitization (upto disbursement) is not yet a reality for most transactions.

INDIA IS ALREADY MOBILE FIRST—SMARTPHONES ARE THE DEVICE OF CHOICE

Smartphones are clearly the primary device of choice, with 43 percent of users doing research only on smartphones, compared to a mere 1 percent only on desktops and laptops. A whopping 98 percent of the loan seekers used a smartphone to research online—refer to exhibit 3.5.

It is estimated that by 2020, over 40 percent of mobile phone users in India would be using a smartphone, with ~250 million new smartphone users being added every year. The 'Jio' phenomenon has had a remarkable, two-fold impact in enabling internet access for Indians on the small screen. Firstly, high speed and reliable internet access has become almost ubiquitous across the country. Secondly, the price of data has dropped by a staggering 97 percent - from Rs 200 / GB in April 2016, to about Rs 6 / GB now. BCG estimates that there will be 650 million Indians with a digital footprint (internet access) by 2020, with more than 85 percent having access to high-speed internet.

Google query data also corroborates this. While across products, mobile is the dominant device for search, there are some products where mobile is more preferred (e.g. in

EXHIBIT 3.5 | Mobile is the Predominant Device to Research Online
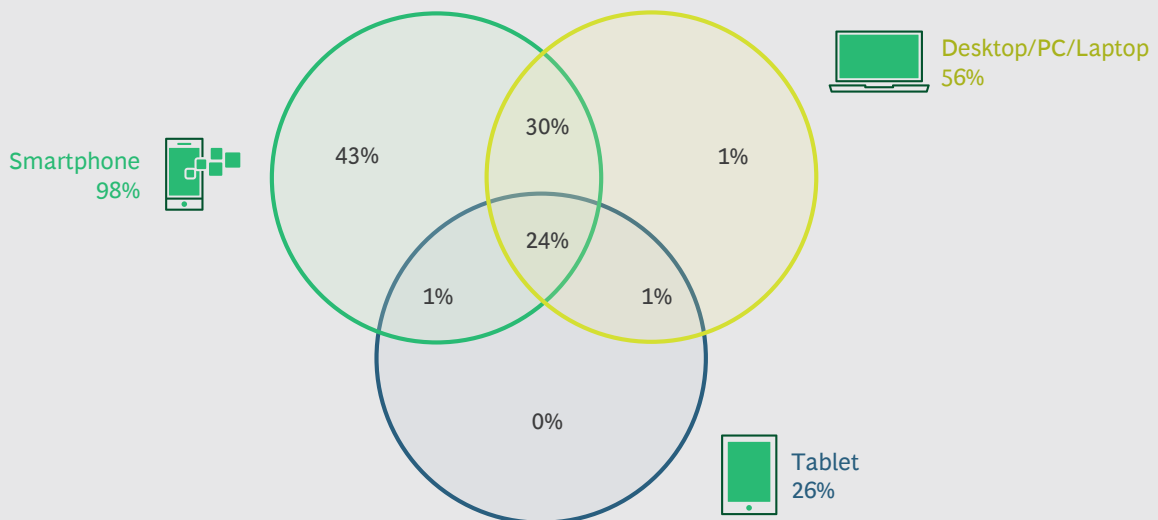
Smartphone 98%

Desktop/PC/Laptop 56%

43%   30%   1%

1%   24%   1%

0%

Tablet 26%

Sources: BCG Google 2018 Digital Lending Survey (N=2364) conducted among users who purchased a loan in the last 12 months or were intending to purchase in the next 3 months, BCG analysis.
Base = 731 who have researched online and purchased the loan

Jan to Mar 2018, 74 percent of queries for personal loans were through mobile as compared to 65 percent for home loans).

SEARCH ENGINES AND LENDER SITES ARE THE MOST IMPORTANT ONLINE TOUCHPOINTS, FOLLOWED BY ONLINE MARKETPLACES

As in other categories such as fashion and retail, online search is amongst the most important touchpoints for potential loan purchasers. Consumers are influenced by different types of online touchpoints and often multiple touchpoints feature in each journey. Google is the preferred touchpoint for online search for digital loan products - influencing 69 percent of digital loan seekers. Lender websites influence 45 percent while marketplaces influence 25 percent of the loan seekers (refer to exhibit 3.6).

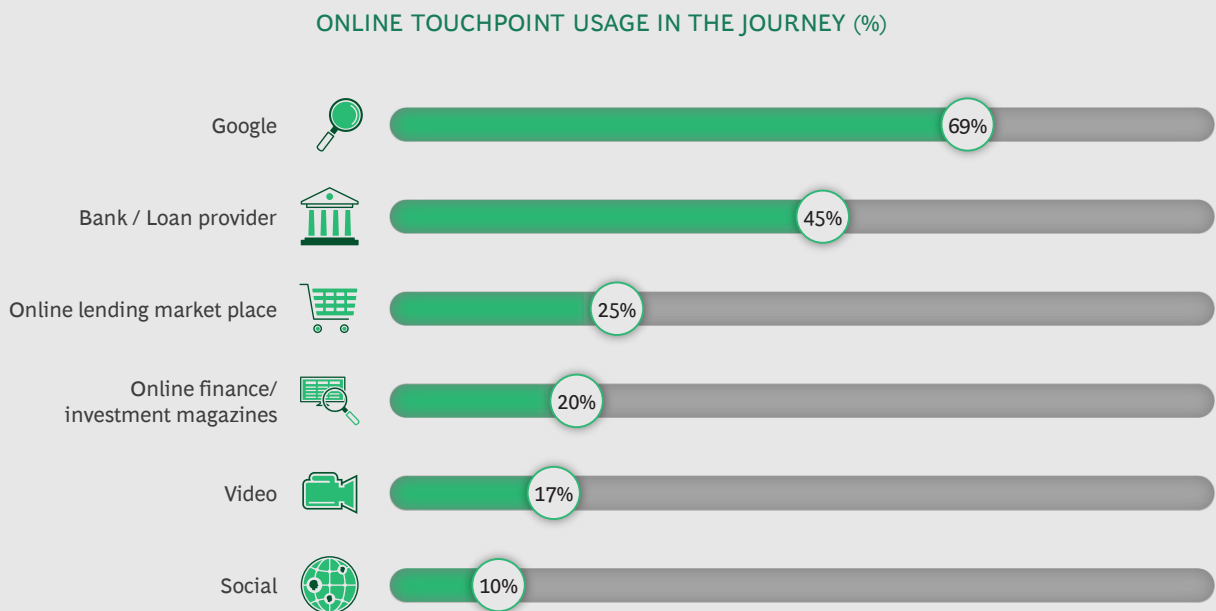### PRICE COMPARISON AND ELIGIBILITY MATTER MOST TO CONSUMERS RESEARCHING ONLINE

Of the consumers who researched online, 64 percent of consumers actively researched for rate of interest / EMI / processing fee. 58 per-

cent actually compared loan options across different providers. Eligibility criteria and documentation requirement mattered to 52 percent of consumers. Value added features like calculators mattered to 43 percent of consumers who accessed them. Recommendations and feedback regarding loan providers mattered to 42 percent of consumers showing that word of mouth (the most critical physical touchpoint) is moving rapidly to the social / digital world as well.

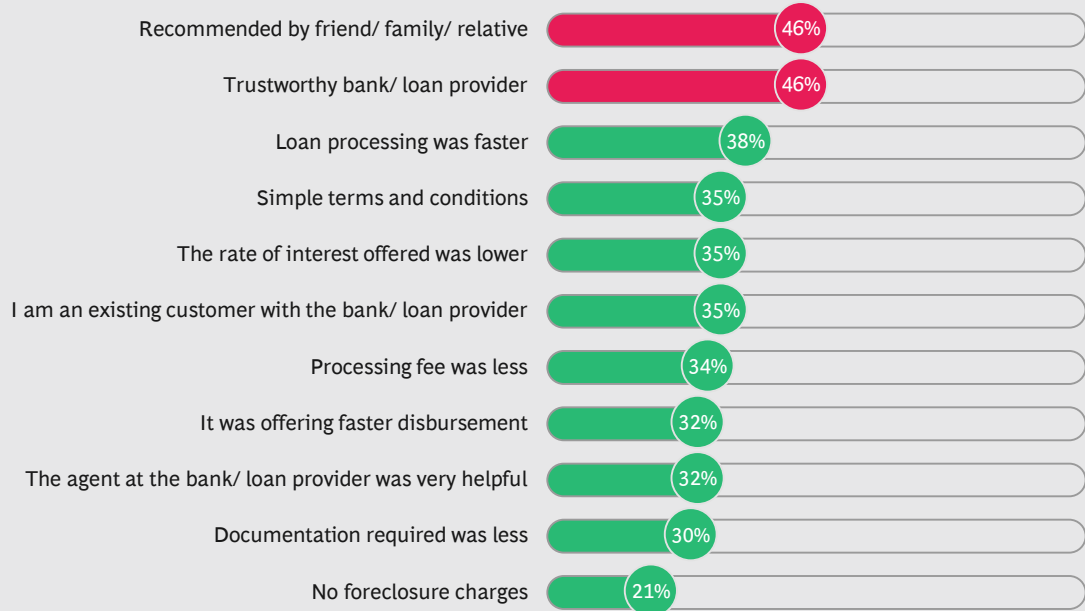### REFERRALS LARGEST INFLUENCER; WORD OF MOUTH INCREASINGLY GOING SOCIAL / ONLINE

Advice from friends and family remains the most important factor influencing lender selection—refer to exhibit 3.7. While financial institutions need to provide a consumer-friendly purchase process as point of parity, consumer referrals could be the differentiator driving business growth. Referrals in the digital world in terms of 'ask for recommendations' on social media and related forums are therefore increasingly becoming important drivers of choice. Therefore, helping the consumer in their digital journeys (e.g. always

EXHIBIT 3.6 | Online Search Being Led by Google Followed by Online Lending Marketplaces

ONLINE TOUCHPOINT USAGE IN THE JOURNEY (%)

Google	69%
Bank / Loan provider	45%
Online lending market place	25%
Online finance/ investment magazines	20%
Video	17%
Social	10%

Sources: BCG Google 2018 Digital Lending Survey (N=2364), conducted among users who purchased a loan in the last 12 months or were intending to purchase in the next 3 months), BCG analysis.

Driver	Percentage
Recommended by friend/ family/ relative	46%
Trustworthy bank/ loan provider	46%
Loan processing was faster	38%
Simple terms and conditions	35%
The rate of interest offered was lower	35%
I am an existing customer with the bank/ loan provider	35%
Processing fee was less	34%
It was offering faster disbursement	32%
The agent at the bank/ loan provider was very helpful	32%
Documentation required was less	30%
No foreclosure charges	21%

Sources: BCG Google 2018 Digital Lending Survey, conducted among users who have purchased a loan in the last 12 months, BCG analysis.
Survey Question: What were the reasons for selecting to acquire loan from your institution?
Base: Those who have acquired a loan (n=1882)

on social chatbot), resolving their queries and complaints rapidly (e.g. prompt responses to complaints on forums) and integrated digital journeys (e.g. social to research options to purchase) are all capabilities that the eco-system needs to develop.

CONVENIENCE AND TRUST KEY BARRIERS TO DIGITAL RESEARCH

Majority of digitally influenced consumers (80 percent) become purchasers. The key question therefore is what will it take to increase digital influence amongst Indian consumers? Refer to exhibit 3.8 for barriers to digital influence. Convenience of search and ease of getting a good price emerged as key drivers. 28 percent of consumers who researched only offline perceived that they could get a better rate of interest, or more favorable loan repayment terms by speaking to a representative at the lender's branch. Furthermore, 19 percent of such consumers are overawed by the 'complicatedness' of online research. Financing is a business of 'trust' and consumers expect the same or higher degree of trust even on digital platforms. 23 percent of consumers who researched only offline stayed away from online

research due to a fear of online frauds and low confidence in online security.

DIGITAL TICKET SIZES COMPARABLE TO PHYSICAL PURCHASES (IN FACT MARGINALLY HIGHER)

The ticket sizes of online loans are comparable to those offline. In fact, in categories such as home, personal and SME loans, where digital touchpoints often influence more than 60 percent of all consumers with internet access, digital ticket sizes are marginally higher than offline loans (refer to exhibit 3.9).
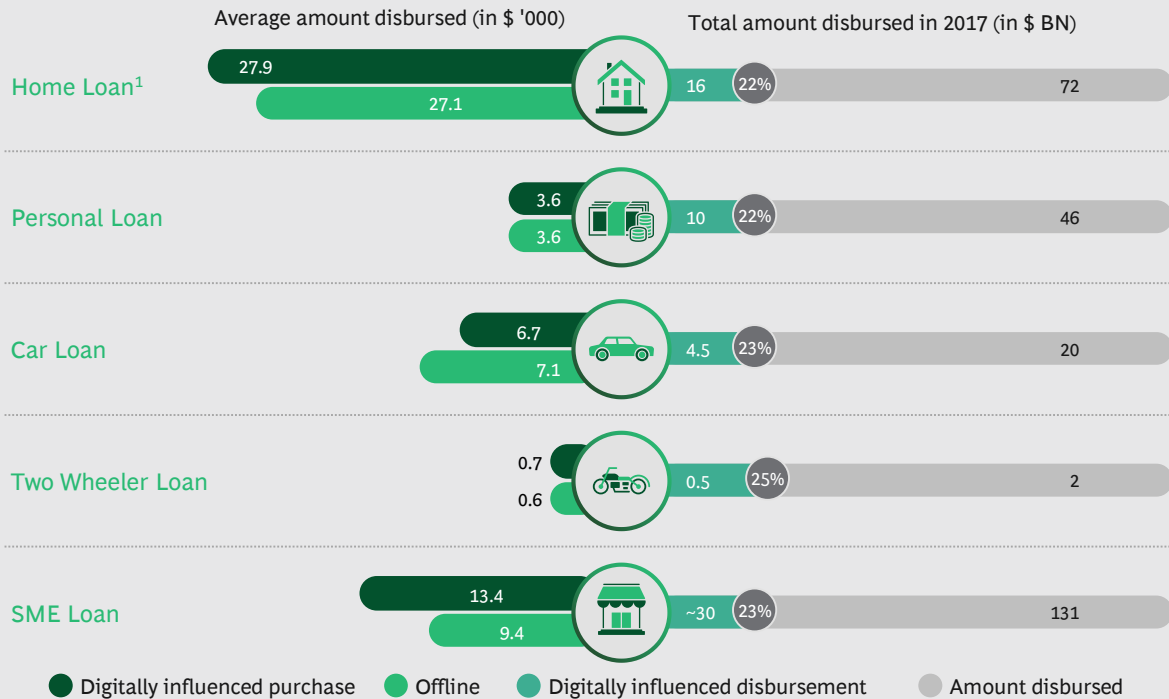
IN summary, today's consumer journeys are hybrid and complicated. They involve multiple digital and physical touchpoints over several weeks. However, it is clear that consumers are ready, willing and increasingly able to seek credit online. The digital behaviors are similar across consumer demographics and product types. Digital ticket sizes are comparable to the physical world (actually marginally higher in a few categories). India, therefore is on the cusp of a digital lending boom which is likely to become the new normal.

Exhibit 3.8 | Major Barriers of Online Research

28%	Convenience of visiting the bank branch
23%	Risk of online frauds and lack of trustworthiness
19%	Complicatedness & struggle of online research
15%	Unattractive loan options

Exhibit 3.9 | Ticket Sizes Online are Greater than Offline in most Categories

Average amount disbursed (in $ '000)   Total amount disbursed in 2017 (in $ BN)

Category	Digitally influenced purchase	Offline	Digitally influenced disbursement	%	Amount disbursed
Home Loan[1]	27.9	27.1	16	22%	72
Personal Loan	3.6	3.6	10	22%	46
Car Loan	6.7	7.1	4.5	23%	20
Two Wheeler Loan	0.7	0.6	0.5	25%	2
SME Loan	13.4	9.4	~30	23%	131

● Digitally influenced purchase   ● Offline   ● Digitally influenced disbursement   ● Amount disbursed

INDIA DIGITAL LENDING: A $1 TRILLION OPPORTUNITY OVER NEXT FIVE YEARS

THE FORCES OUTLINED IN the previous three chapters—viz. the global experiences in digital lending, growth of digital infrastructure in India and readiness of the Indian consumer will combine to expand the digital lending space in India exponentially.

Digital Lending Will Grow 5X

It is estimated that the total value of digital lending business in the country will exceed $1 trillion over the next five years. This growth forecast is based on estimating the progression on the underlying drivers as shown in exhibit 4.1 and as described below.

2.2X INCREASE IN RETAIL LOAN DISBURSEMENTS

Retail lending growth has been robust, witnessing a CAGR of ~16 percent over the last five years in disbursements, and 30 percent annual growth in enquiries hitting the bureaus. Contrary to corporate lending, bad debts in retail lending have held up well and the bureau score profile of consumers receiving loans has broadly been stable. With rising affluence levels and a burgeoning middle class with higher disposable incomes, demand for retail credit is expected to be robust in the next five years driven by consumption growth across sectors like housing, automobiles and white goods. To match this rising demand, supply will expand, especially in the fast-growing Tier-1 and Tier-2 cities.

These trends are expected to drive a ~2.2x growth in overall retail loan disbursement, taking it from approximately $330 billion today to approximately $730 billion by 2023.
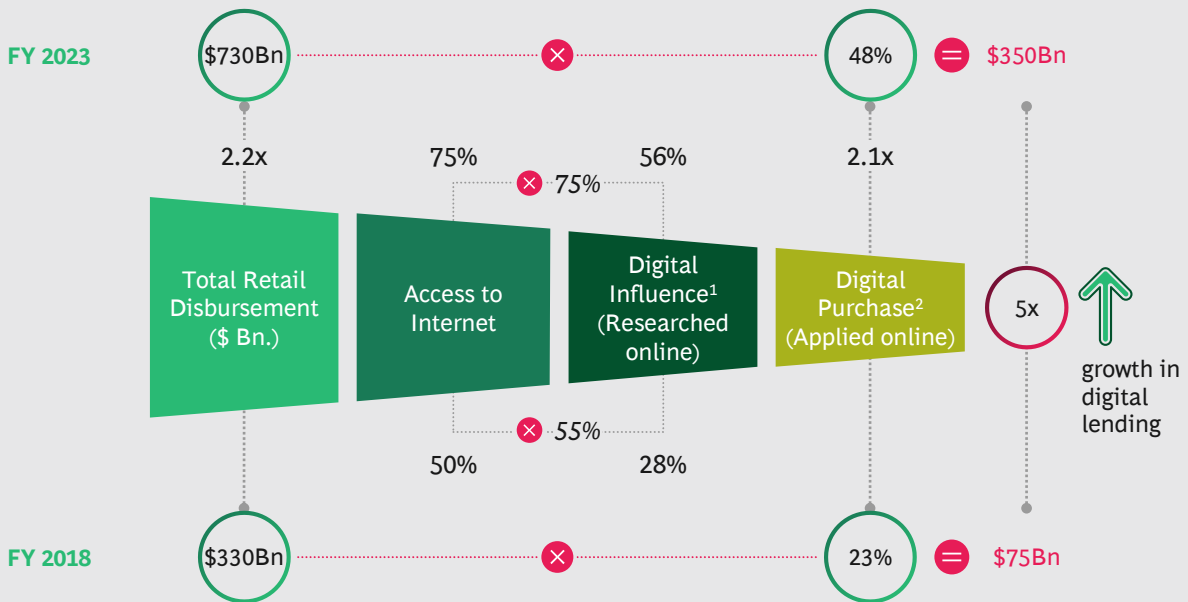
GREATER ACCESS TO INTERNET

Our research indicates that by 2023, the digital footprint of financial services consumers would increase to 75 percent (from current 50 percent). This is primarily due to explosion of smart phones as well as mobile internet.

INCREASE IN DIGITAL INFLUENCE

Different consumption categories are at different levels of maturity of digital influence today—ranging from ~40 percent for apparel, footwear and accessories to more than 80 percent for cars. Majority of consumers with access to internet are today influenced by what is available online. These numbers have seen good progression across all categories over the last 3-4 years, increasing by 20-25 percent points for a few categories. The proportion of "digitally influenced" consumers has grown the fastest for cars, moving up to 82 percent from 58 percent. Most of the other categories like air travel, mobiles, household appliances, apparel, footwear and accessories etc. have seen a growth of 10-15 percent in terms of digital influence. PC, laptops and tablets have been flat at ~55 percent.

Digital influence in financial services has been growing faster than several categories

EXHIBIT 4.1 | 500% Growth in Digital Loan Purchases in Next 5 Years

FY 2023 — $730Bn — ✕ — 48% — = — $350Bn

2.2x — 75% — 56% — 2.1x

✕ 75%

| Total Retail Disbursement ($ Bn.) | Access to Internet | Digital Influence[1] (Researched online) | Digital Purchase[2] (Applied online) | 5x | ↑ growth in digital lending |

✕ 55%

50% — 28%

FY 2018 — $330Bn — ✕ — 23% — = — $75Bn

Sources: BCG Google 2018 Digital Lending Survey (N=1882), conducted among users who have purchased a loan in the last 12 months), BCG analysis.
[1]Percentage buyers who used internet during purchase process for any product,
[2]Percentage buyers who applied online (Survey Question: did you use any online medium for applying or acquiring the loan),
[3]Conversion Rate: 1 USD = 65 INR

(e.g. higher than categories such as online travel) which have been early movers in the digital sphere, and is currently tracking at 55 percent of consumers who have a digital footprint—see exhibit 4.2.

The digital influence on retail lending will continue to grow at a pace comparable to other retail categories. Further, increased influence in a few categories would have a domino effect on others. Correspondingly, it is estimated that by 2023, the digital influence on retail lending could grow to reach 70-75 percent of consumers, from 55 percent today.

INCREASE IN DIGITAL PURCHASE

When asked in the research, 64 percent of the respondents (all internet users) mentioned that they are likely to use a digital channel to purchase loans in the future. Even with this conservative estimate, it translates to 48 percent of the overall population (compared to 23 percent currently) likely to make digital purchase of a retail loan by 2023.

The above drivers translate into digital lending being over a $1 trillion opportunity over the next five years—see exhibit 4.3.

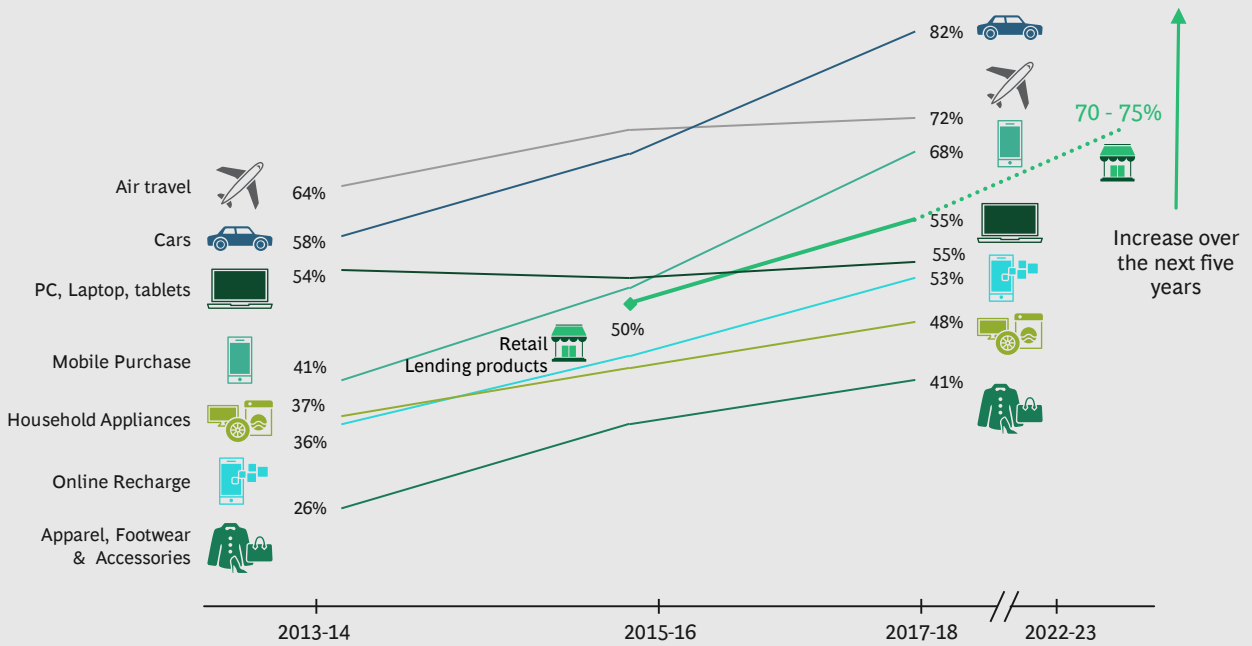## The Transforming Digital Lending Landscape—10 Predictions

While the numbers are exciting and narrate one part of the story, what is even more exciting is the seismic shifts in the industry—from the participants, to their construct, to the underlying technologies and the processes that will make it happen.

Amara's Law states that "We tend to overestimate the effect of technology in the short run and underestimate the effect in the long run." In order to not fall in the "underestimate" category, here are ten predictions on what will shape the future of digital lending in India:

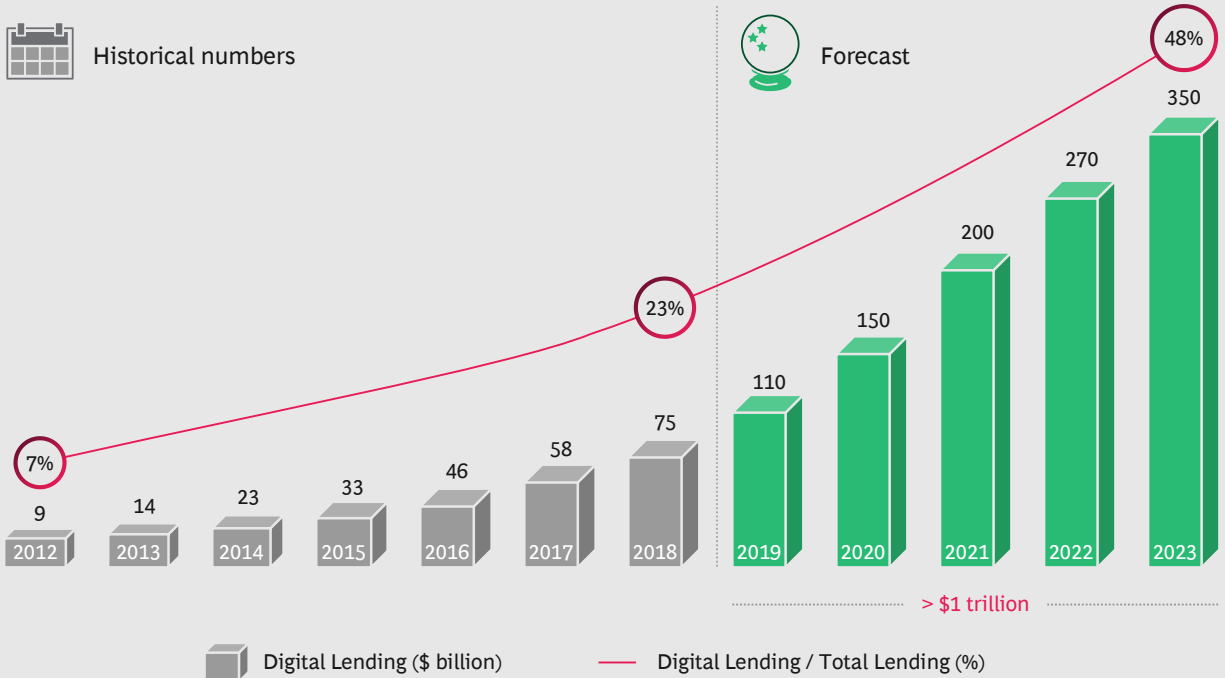#### INCUMBENTS WILL FUND / SPAWN NEWCO DIGITAL ATTACKERS

Realizing the full potential of digital lending in the country will require skills that do not adequately exist today with the incumbents. Moreover, the organization culture required to breed digital lending is very different from the legacy culture prevailing at traditional lenders. Hence, a true digital lender will benefit from operating as an independent entity. Banks and NBFCs will incubate or support

EXHIBIT 4.2 | Digital Influence Expected to Increase to 75%

Air travel — 64%
Cars — 58%
PC, Laptop, tablets — 54%
Mobile Purchase — 41%
Household Appliances — 37%
Online Recharge — 36%
Apparel, Footwear & Accessories — 26%

82%
72%
68%
55%
55%
53%
48%
41%

70 - 75%

Increase over the next five years

Retail Lending products
50%

2013-14   2015-16   2017-18   2022-23

Sources: BCG Centre for Consumer Insight, BCG Google Digital Lending Survey, 2018.

EXHIBIT 4.3 | Digital Lending: $1 trillion Opportunity over Next 5 Years

Historical numbers

Forecast

48%

350
270
200
150
110

23%

7%

9   14   23   33   46   58   75
2012 2013 2014 2015 2016 2017 2018

2019 2020 2021 2022 2023

> $1 trillion

◼ Digital Lending ($ billion)   — Digital Lending / Total Lending (%)

Sources: CIBIL, BCG Google Digital Lending Survey, 2018, BCG analysis.

such lending companies to enable them to operate in a truly digital fashion.

Marcus and Hello Bank! are examples of digital attackers spawned by banks. The collaboration between J.P. Morgan and OnDeck, launched to score small-ticket loans to be given by J.P. Morgan through the OnDeck Score engine is an example of a bank partnering with a fintech. The partnership provides J.P. Morgan with flexible integration through advanced scoring systems, bringing same or next day funding to small clients, which earlier were not fully served due to the bank's inflexible scoring systems. Indian incumbents will follow suit.

Non-traditional companies with access to consumers will challenge incumbents

Given the low penetration of credit in India, lending is an attractive business opportunity in the country. Several non-financial services companies have entered the lending space over the last few years. Non-traditional companies that have a brand, large consumer base as well as a strong distribution network will get into lending and challenge the incumbents.

There are several examples already across industries. Auto OEMs are leading the charge with almost everyone from Maruti to Volkswagen to Hero Motocorp to Hyundai and others setting up captive finance companies to give auto loans. Retail companies like Future Retail have also talked about plans for setting up a lending business. Drawing inspiration from Chinese giants like Ant Financial, Indian e-commerce companies like Flipkart have applied for an NBFC licence to offer credit to shoppers as well as sellers. Telcos like Airtel are actively getting into financial services business and are likely to tie-up with NBFCs to distribute loans to their large consumer base. Conglomerates like Aditya Birla Group and Cholamandalam are likely to combine significant capital with digital models in a bid to win. Handset manufacturers like Xiaomi and Samsung are exploring 'value +' models to potentially underwrite a large base of consumers on the back of handset linked data. And finally internet based payment companies like Paytm and MobiKwik are likely key contenders as well, on the back of a large base of acquired and engaged consumers.

New age fintechs will continue to disrupt

Traditionally financial services providers have built large, multi-layered organizations that result in complexity and inefficiency. This inefficiency will not go unpunished. New age fintechs, with their lean organization and innovative operating models, will be able to offer agile and cutting edge products that will address current consumer pain points with taking a loan. There are several examples of fintechs offering disruptive solutions to consumers. Fintechs like Kabbage have pioneered giving uncollateralized small business loans. Funding Circle and LendingClub are P2P specialists and provide a platform for peer-to-peer loans. Others like Lendio and Biz2Credit have set up successful loan marketplaces that match borrowers with lenders.

Even closer home, fintechs like CapitalFloat, LendingKart and Neogrowth have set up NBFCs and provide digitally enabled, seamless loans to commercial borrowers. Several others are trying niche and innovative business models. For instance, KredX and Marketbills focus on invoice discounting, while Faircent and WorldofLending run a P2P marketplace for individual loans. Several fintechs have also set up platforms that enable digital loans. Bankbazaar and Paisabazaar have set up lending marketplaces, while CreditMantri and CreditVidya provide a credit-scoring platform.

It is only fair to expect this space to proliferate, and many more fintechs to come up with innovative models to participate in the lending ecosystem in the country.

Data and analytics will disrupt the lending value chain

The last few years have seen an explosion in the availability of digital data in India. More than 1.2 billion Indians are enrolled in Aadhar as of May 2018 and have a digital as well as biometric footprint. Digitization of various databases and records has resulted in multifold increase in data of individuals and corporations being digitally available. Demonetization provided an impetus for digitization of payment transactions, thereby making transaction data available online, and this was enhanced by the implementation of GSTN which made invoices and trade data digital.

The credit bureau data in the country is also getting augmented rapidly. The bureau footprint has increased from 15 percent in 2012 to over 44 percent in 2017.

Big data will grow bigger as more consumers come online, and discovery, research, transactions and consumer service move online. This will enable lenders to take better-informed underwriting decisions, offer personalized and customized solutions to consumers and drive higher consumer engagement and hence better consumer satisfaction.
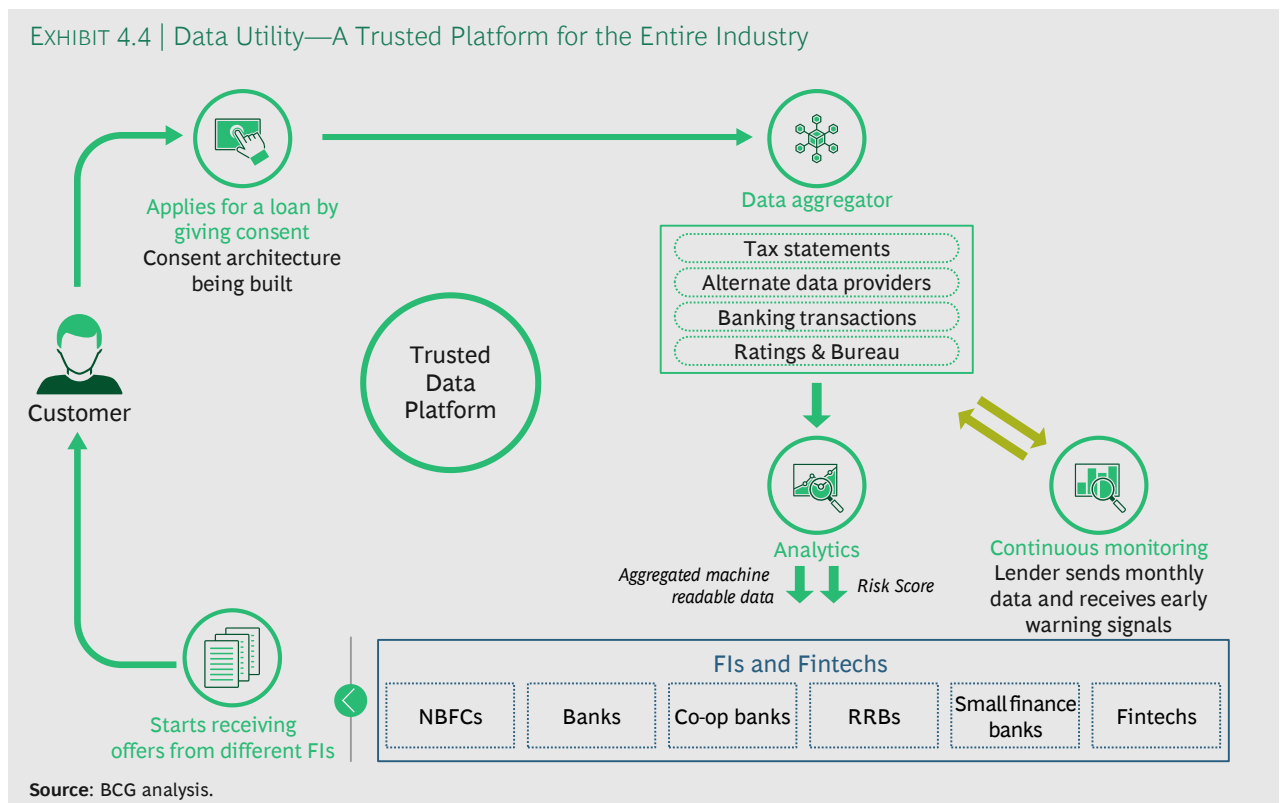
INDUSTRY PLATFORMS WILL BECOME A REALITY

While lenders seek access to consumer data to drive their digital initiatives, the vision of 'Digital India' is being amply supported by the government through a variety of initiatives, e.g., TReDS as a platform for enabling online invoice discounting, GSTN as an entity providing the technology infrastructure to enable GST implementation, GeM as a marketplace taking government procurement online, and other such initiatives. Another key step announced by the regulator is the launch of a Public Credit Registry (PCR). Such a registry will augment the existing bureau databases

and immensely help in collections and resolutions. RBI has also acknowledged the potential of disruptive technologies like blockchain and has successfully tested a transaction platform based on blockchain. These initiatives, combined with other initiatives on implementing UPI, Aadhar etc. are taking significant strides in making India presence-less, paperless and cashless, the first 3 layers of India Stack.

Looking ahead, a Data Utility that brings the various data pools together and facilitates digital lending can be a game changer for the financial services industry—refer to exhibit 4.4.

As an illustration, an MSME borrower applies for a loan while simultaneously providing consent to pull data. With this consent, data is extracted from different data sources including tax authorities, credit agencies, alternate data providers, marketplaces, utility/e-commerce companies etc. and aggregated to generate a single risk score. This risk score is made available to the banks, NBFCs and lending fintechs registered on the platform, thereby eliminating duplication of effort by each entity and creating significant

EXHIBIT 4.4 | Data Utility—A Trusted Platform for the Entire Industry

Applies for a loan by giving consent
Consent architecture being built

Customer

Trusted Data Platform

Data aggregator

Tax statements
Alternate data providers
Banking transactions
Ratings & Bureau

Analytics
Aggregated machine readable data   Risk Score

Continuous monitoring
Lender sends monthly data and receives early warning signals

Starts receiving offers from different FIs

FIs and Fintechs

| NBFCs | Banks | Co-op banks | RRBs | Small finance banks | Fintechs |

Source: BCG analysis.

efficiencies in the system. Each lender may further feed this data and/or score to their respective proprietary risk models. The MSME borrower receives different bids from different lenders based on this risk score and chooses the lender based on his/her requirements.

For instance, going forward, this data utility can also collaborate with marketplaces like GeM (the Government e-Marketplace). Transaction data from GeM can be made available to the data utility, through which lenders may provide working capital facilities to MSME sellers. Another example is that of TReads, which if integrated with a Data Utility and/or GeM can further create a multiplier impact on digital loan growth.

Further, data will get increasingly democratized spurred by government and regulatory initiatives such as consent architecture as described in the write-up below. A regulated data utility, aggregating all sources of consumer information (bank transactions, GST, legal, director information, taxation, utility payments etc.) into a central warehouse may be more 'here and now' rather than a far-fetched concept.

Technological advancements will disrupt how consumers research and apply for a loan, as well as the onboarding experience. It will make the entire experience more intuitive, seamless and convenient. Some upcoming technologies can even disintermediate the channels that consumers rely on today for research, application or servicing.

For example, voice AI and smart assistants will become a significant channel for product and brand discovery. The market for smart voice assistants has been burgeoning with Amazon's Echo, Google's assistant and Apple's Siri in the fray. Each of these players is looking to make their offerings relevant in the Indian context, with natural, human-sounding voices comprehending and speaking in Indian accents. Use cases are rapidly evolving powered by machine learning. While early generations of digital tools often felt robotic, future versions can retain the feel of a 'trusted advisor'. Imagine these virtual assistants understanding and speaking Indian languages in natural sounding voices! Given Indian consumers' preference for 'human' interaction in the research and selection process, Indian

CONSUMER (CONSENT) IS THE KING!

With growth in data usage and digital transactions, clarity on consent and ownership of private data remains a crucial issue, the fourth layer of India Stack. iSPIRT, a think-tank, has outlined a framework for the same. They have created a Data Empowerment and Protection Architecture (DEPA) to empower users to decide what data they want to share with different entities and achieve data democracy. At the heart of the DEPA is Electronic Data Consent which enables a user to give consent to bits of data, authenticated by his/her digital signature before sharing it with data consumers.

RBI has proposed a rigorous framework consisting of 'Data subjects', i.e. households which generate financial informa-

tion through transactions, savings etc and 'Data controllers', i.e. financial firms, who will be held liable for any harm caused to the data subject as a consequence of the breach of their rights. Intermediaries and a 'Data Commissioner' will be responsible for oversight of security mechanisms and redressal of grievances. This framework, inspired by Scandinavian countries where trust in the government's data security mechanisms has led to the widespread availability of consumer data, is likely to go-live soon. RBI has also given the go ahead for account aggregators to collect information on consumers' financial assets and share it with authorized entities in the desired format.

lenders would be able to leverage this emerging technology to supplement existing contact centers, branches and distribution channels to acquire and service consumers.

The focus of digitization will shift from moving processes online, to offering a seamless, simplified consumer-centric experience. From creating micro-segmented and personalized offers to proactive re-pricing, traditional product development would be turned on its head. This would prevent consumer drop offs along the digital funnel and enable increased digital purchases.

Finally, biometric and e-KYC will continue to ease consumer authentication, allowing speedier on-boarding of retail and SME consumers. OTP-based e-KYC is a positive step in making the loan sanctioning process digital. With the passage of time, the current restrictions in the use of e-KYC (like upper limit of Rs 60,000 for e-KYC based loans) will be eased in order to provide a further boost to digital lending. Biometrics will be especially critical for financial inclusion projects and priority-sector lending, where a majority of NTC (new to credit) consumers originate. Armed with a low-cost, internet-enabled biometric device, lenders will increasingly leverage their business correspondents or partners with offline feet-on-street to grow their existing consumer base.

Data and automation, linked with data explosion, will revolutionize underwriting, providing an option to offer credit to all

Until now, credit bureaus have been the single source of information on credit worthiness of borrowers. While the coverage of bureaus has been growing at 23 percent, this alone will not be sufficient to expand credit facilities to all borrowers. For example, 90 percent of potential MSME borrowers have been historically unserved, primarily due to paucity of data that enables lenders to underwrite them. On the retail side too, credit facilities to New-to-Credit consumers have been limited to certain highly collateralized products such as home loans. Despite credit coverage expanding in terms of the overall transaction database, a large number of consumers still have only a thin-file on the bureau with a limited set of

data points that makes them ineligible for credit under today's scoring models.

An explosion of data from multiple sources, for both retail and corporate consumers is imminent. In fact, there is a long trail of consumer data with alternate systems (utility payments, telco data, etc.) that will become available, providing additional inputs for credit worthiness. Exhibit 4.5 illustrates multiple data points that exist for a retail borrower in the country today. They are today captured by multiple sources and need to be consolidated. There are already a large set of 'alternate data' companies such as Perfios, Jocata, Probe and Saverisk, that are pulling this together and can be leveraged by lenders.

This data explosion will give an impetus to the creation of big-data driven algorithmic lending models that will likely return a decision in minutes. Furthermore, these models will be self-learning, tuning themselves basis data from connected collections and payment systems. This will trigger network effects in the models, strengthening them further and giving lenders an option to extend credit to all.
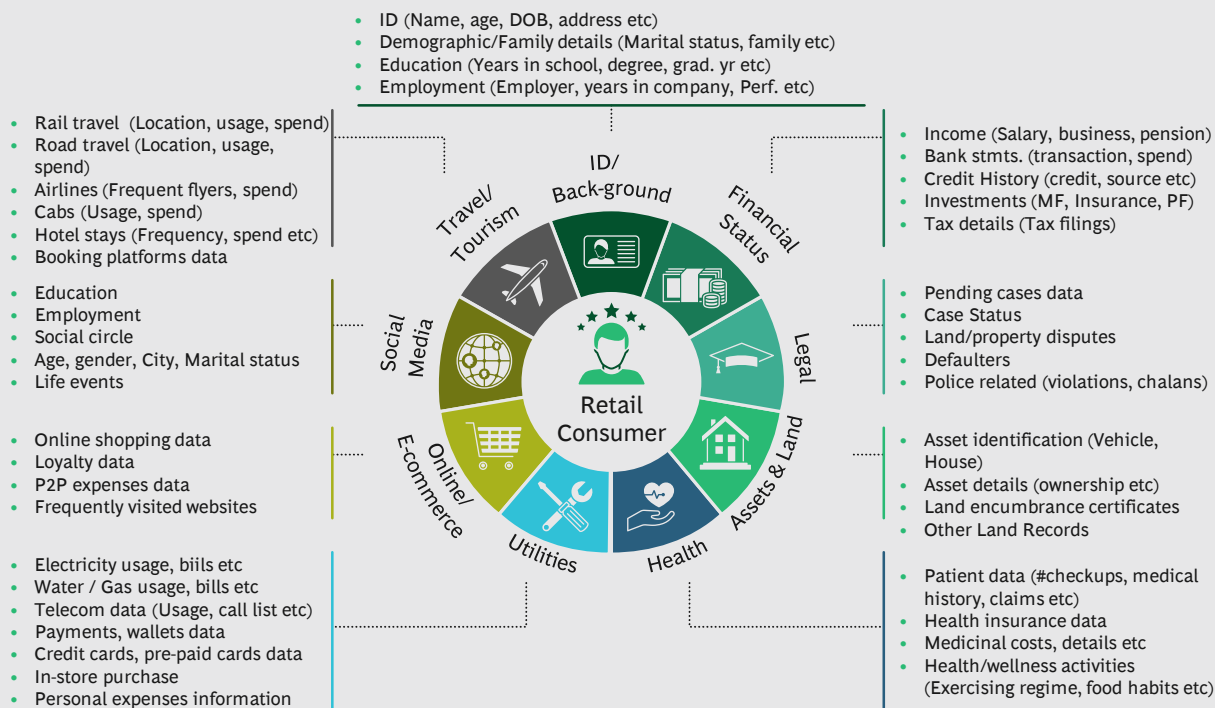
Finally, all this has an implication of coverage of consumer segments. With the proliferation of alternate data sources, lenders do not need to only depend on bureau data. Furthermore, cost of serving in digital models is a fraction of that of physical ones. This will help serve hitherto underserved segments such as small and marginal borrowers, micro enterprises, and contractual workers etc., thereby bringing several unserverd consumers into the formal credit economy.

Technology advancements will enable full scale digitization of operations

There has been a lot of talk around the use of blockchain in financial services, but the practical implications have been unclear. Blockchain, or distributed ledger systems, have the potential of revamping record-keeping, digitizing and speeding up collateral assessment and fraud analytics.

A crucial part of the lending chain, which is the 'last frontier' of digitization, is that of establishing collateral security against funds

Exhibit 4.5 | Multiple Data Points Exist for Retail Banking Consumer

- ID (Name, age, DOB, address etc)
- Demographic/Family details (Marital status, family etc)
- Education (Years in school, degree, grad. yr etc)
- Employment (Employer, years in company, Perf. etc)

- Rail travel (Location, usage, spend)
- Road travel (Location, usage, spend)
- Airlines (Frequent flyers, spend)
- Cabs (Usage, spend)
- Hotel stays (Frequency, spend etc)
- Booking platforms data

- Income (Salary, business, pension)
- Bank stmts. (transaction, spend)
- Credit History (credit, source etc)
- Investments (MF, Insurance, PF)
- Tax details (Tax filings)

- Education
- Employment
- Social circle
- Age, gender, City, Marital status
- Life events

- Pending cases data
- Case Status
- Land/property disputes
- Defaulters
- Police related (violations, chalans)

Travel/Tourism **ID/Back-ground** **Financial Status** **Social Media** **Legal**

Retail Consumer

Online/E-commerce **Utilities** **Health** **Assets & Land**

- Online shopping data
- Loyalty data
- P2P expenses data
- Frequently visited websites

- Asset identification (Vehicle, House)
- Asset details (ownership etc)
- Land encumbrance certificates
- Other Land Records

- Electricity usage, biils etc
- Water / Gas usage, bills etc
- Telecom data (Usage, call list etc)
- Payments, wallets data
- Credit cards, pre-paid cards data
- In-store purchase
- Personal expenses information

- Patient data (#checkups, medical history, claims etc)
- Health insurance data
- Medicinal costs, details etc
- Health/wellness activities (Exercising regime, food habits etc)

Sources: Secondary sources, expert interviews, BCG analysis.

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lent. There is a general lack of transparency, especially in terms of fixed collateral, e.g., legacy issues linked to land titles. To add to the complexity, there exist variances in record maintenance process and data across each state of the country. Here, blockchain technology is likely a good solution—lenders will greatly benefit from distributed ledgers on land titles and collateral valuation.

Identity verification of borrowers could be faster and more efficient with the use of the blockchain network. Smart contracts could regulate the loan through its lifecycle, eliminating the possibility of defaults, delayed reporting of loans and unreported loans, as seen recently in the Indian sector. Shared control in the review of past loan records, verification of financial information, and shared consensus would assure limited scope for fraud, efficient governance and transparency in underwriting.

Instant digital payments will continue to drive real time disbursements and improve collections. Today, registering a physical mandate (NACH) takes anywhere between 30 to 45 days and is largely restricted to a few private and public sector banks. A faster turnaround for registering e-mandate time will allow easier repayment of EMIs.

A better e-Sign mechanism with stronger legal infrastructure around digital lending agreements will ease recoveries. Growing lender confidence will drive a seamless, paperless lending experience. Lenders seek access to virtual IDs that will definitively identify borrowers and provide a link to their loan history, even for those consumers not covered by other existing governmental systems such as PAN. E-sign is a powerful solution today. It is expected that e-sign will grow rapidly.

Partnerships will fill capability gaps

In order to build the new digital capabilities required to redefine consumer lending journeys and expand the scope of credit to those previously underserved, lenders will forge partnerships and collaborations—with credit bureaus, fintechs, technology companies and alternate data providers. Multiple new fintechs in the arena of credit scoring (e.g.,: experion, EquiFax, etc), digital income assessment using bank statement analysis (e.g., Perfios), eSign (e.g., eS-
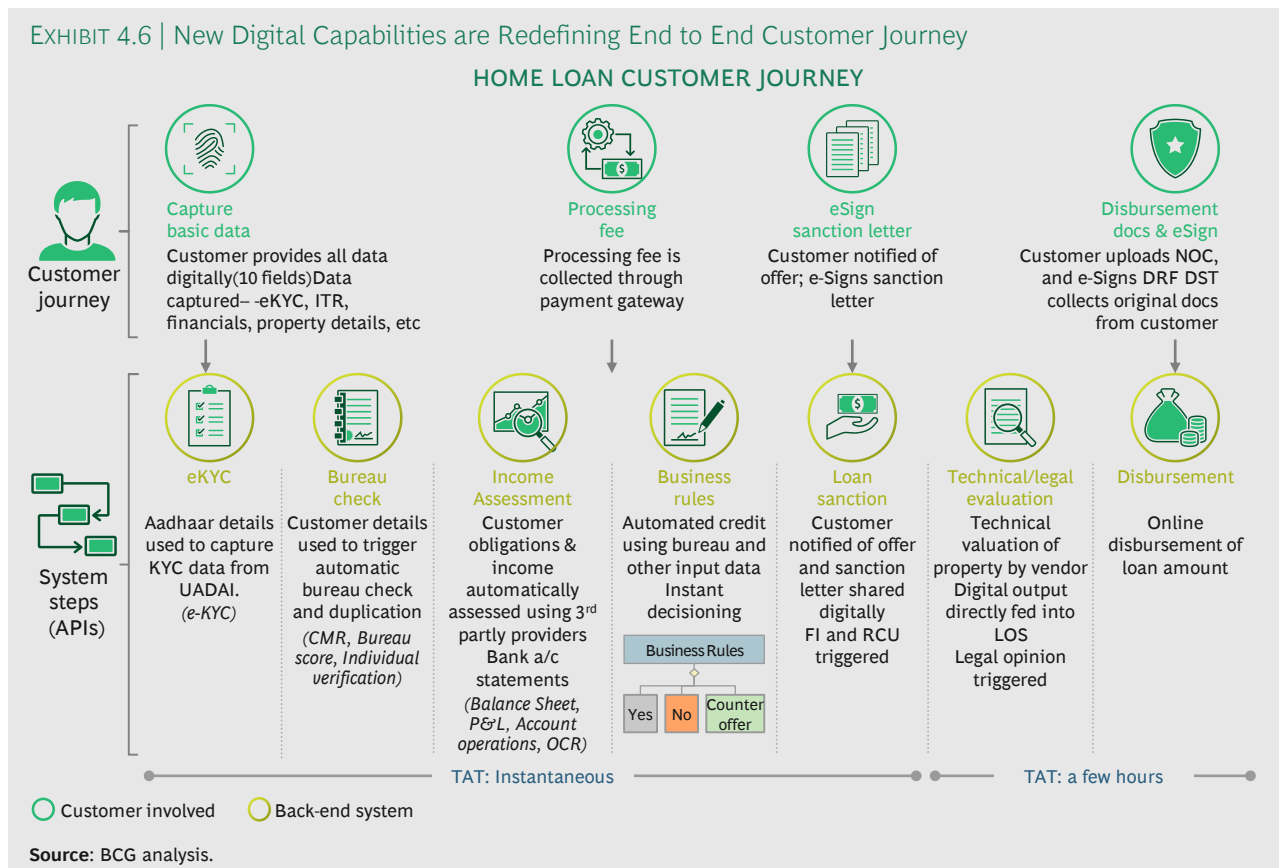
ignDesk, Digio, etc), even property valuation (e.g., Propequity) are gaining credibility and expanding the scope of straight through processing in digital lending by digitizing more of the steps to sanction. In the MSME space, companies such as Indifi, Cointribe, ZipLoan and ePayLater are building on algorithm-based lending. This is driven by multiple data points such as the automated bank statement analysis provided by Yodlee and Jocata etc.; financials and business information provided by Probe, CMIE etc., trade credit information from Vayana, IndiaMart and KredX etc.; export and import data from Dun & Bradstreet etc. and industry specific data e.g., crop data from CropIn. By partnering with some of these entities, banks and NBFCs can acquire the capabilities required to offer an end-to-end digital experience to their borrowers.

THE LENDING ORGANIZATION WILL TRANSFORM WITH DRAMATIC SHIFT IN POWER BASES

Finally, the increase in the extent of digitization and automation will mean a shift in the power bases within the organization. As processes and underwriting become more auto-mated, the 'importance' of erstwhile power centers like operations and credit will go down. Technology and data will emerge as the new power centers in the organization, and will be the key differentiators across lenders. This will imply that lenders will have to create a digital-ready organization, focus on re-skilling of their people and build the right mindset and culture in the organization. With the shape of the organization undergoing dramatic changes, managing large scale change will become an indispensable leadership competency across lenders. Winning organizations will be those who continuously adapt and where leaders manage the shift in the overall culture extremely well.

The forces outlined above will create the platform for end-to-end digitization of consumer loan journey. An illustration of a home loan journey, for a salaried consumer taking a loan to buy a house in an approved project, is illustrated below in the exhibit 4.6.

EXHIBIT 4.6 | New Digital Capabilities are Redefining End to End Customer Journey

HOME LOAN CUSTOMER JOURNEY

Customer journey

Capture basic data
Customer provides all data digitally(10 fields)Data captured– -eKYC, ITR, financials, property details, etc

Processing fee
Processing fee is collected through payment gateway

eSign sanction letter
Customer notified of offer; e-Signs sanction letter

Disbursement docs & eSign
Customer uploads NOC, and e-Signs DRF DST collects original docs from customer

System steps (APIs)

eKYC
Aadhaar details used to capture KYC data from UADAI.
(e-KYC)

Bureau check
Customer details used to trigger automatic bureau check and duplication
(CMR, Bureau score, Individual verification)

Income Assessment
Customer obligations & income automatically assessed using 3rd partly providers Bank a/c statements
(Balance Sheet, P&L, Account operations, OCR)

Business rules
Automated credit using bureau and other input data Instant decisioning

Business Rules

Yes | No | Counter offer

Loan sanction
Customer notified of offer and sanction letter shared digitally FI and RCU triggered

Technical/legal evaluation
Technical valuation of property by vendor Digital output directly fed into LOS Legal opinion triggered

Disbursement
Online disbursement of loan amount

TAT: Instantaneous   TAT: a few hours

○ Customer involved   ○ Back-end system

Source: BCG analysis.

REALIZING THE OPPORTUNITY: THE WINNING AGENDA

FOR INDIA TO REALIZE the full opportunity, all the key stakeholders will need to play their part. There is a large agenda ahead for the industry.

Ten Point Agenda for the Industry

REIMAGINE CONSUMER JOURNEYS; SIMPLIFY ONBOARDING

The consumer of today, and, even more so, of tomorrow, is an internet homo sapien. Her / his expectations are defined by the experiences at Google, Amazon, Flipkart or Paytm. Consumers want the same frictionless, intuitive, and convenient experience for all their needs. This is what lenders need to deliver.

The trap is to just embark on a 'digital BPR' (Business Process Reengineering). In other words, execute a program which involves digitization of existing processes. Unfortunately, this will not be enough. Lenders need to dramatically reimagine consumer journeys. This involves a deep understanding of consumer behavior, typically gained through ethnographic research techniques. This also entails applying a consumer lens and working through all the 'break-points' in the journey that exists today. The resultant experience needs to be simple, intuitive and convenient.

For instance, a home loan journey actually starts with home purchase. Lenders therefore might want to offer their consumers an end-to-end integrated digital journey involving home purchase, home financing and home wealth management. Exhibit 5.1 shows a curated end-to-end offering by a 'bank of the future'. This solves for the multiple break points that exist in the consumer journeys today and 'vertically integrates' the offering by the lender. The consumer can explore homes, secure financing and continuously monitor the price of her / his home in a 'one stop' solution.

While several measures have already been taken to ease consumer on-boarding, a few additional initiatives could simplify it further:

- **E-KYC:** OTP based e-KYC for digital loans is working well. However, currently the limit is capped at Rs. 60,000. Increasing the limit of loan amount permitted through OTP based e-KYC to, say, Rs. 500,000 can enable a hassle free process to borrow small ticket size loans for both retail consumers and SMEs.

- **E-sign:** Currently, courts ask for wet signatures on physical loan agreements and police ask for a hard copy to file a complaint under Section 138 of the Negotiable Instruments Act, 1881. An enviornment where the judiciary and police treat digital signatures and digital loan agreements at par with physical ones will help strengthen

Dream Home Shopper
- Find homes according to your taste, lifestyle and budget
- Connect with professionals who can make your dream home a reality

Digital Mortgage
Step by step guide to walk you through the process of finding, applying and closing a mortgage loan

Home Wealth Manager(HoWM)
See the estimated value of your home in real time. Increase the accuracy of home equity estimates and perform tasks to enhance your home value

Source: BCG analysis.
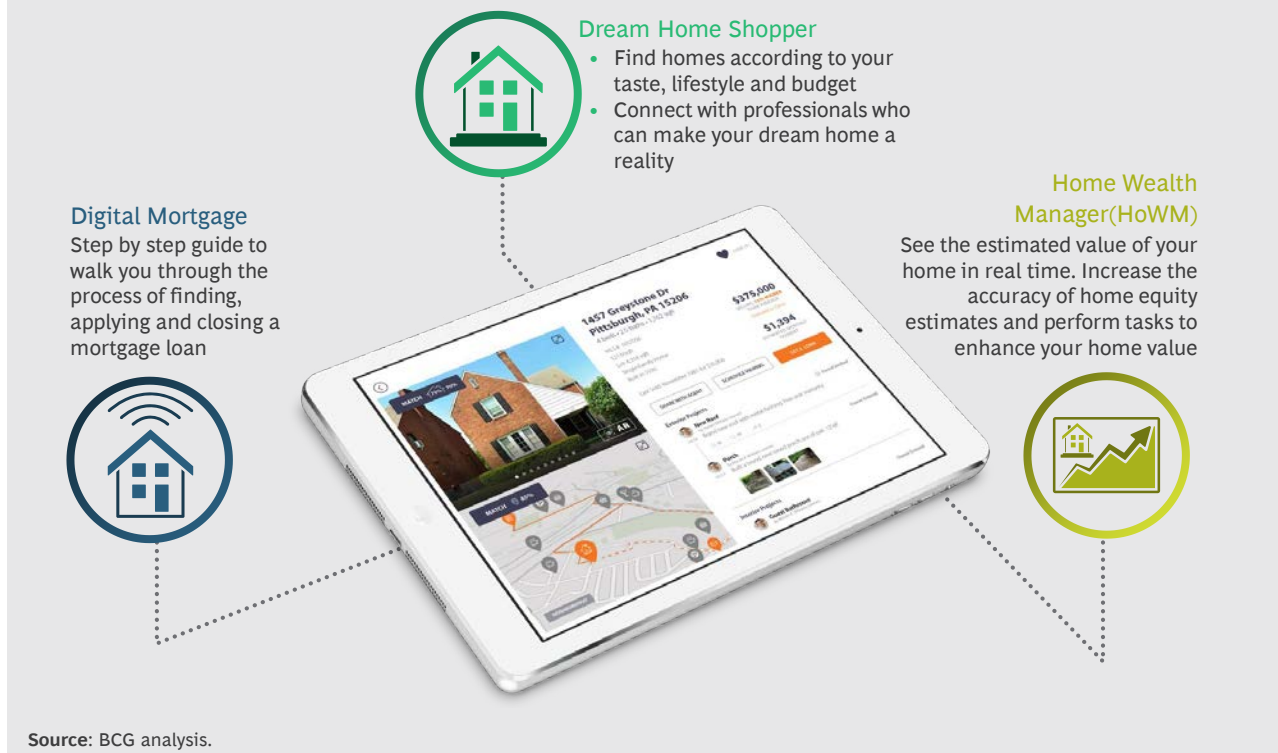
the legal infrastructure around digital lending agreements and back a paperless lending economy.

- **E-mandate:** Currently, registering a physical mandate (NACH) takes anywhere between 30 to 45 days and is restricted to a few banks. A faster turnaround for registering e-Mandate will allow faster loan disbursal. Allowing API based e-mandates, supported by all scheduled banks, will also help accelerate the process. Further, at present, e-mandates cannot be registered on any business account (including current accounts) or joint account. Allowing access to these accounts is critical for both SME and consumer lending, as most borrowers tend to repay from their current account or joint personal account.

- **E-stamping:** Home loan journeys are closely intertwined with home purchase journeys and today, these journeys are far from smooth. Land titles are unclear (legal vetting of properties happens on a case-to-case basis and each transaction

takes between 1-2 weeks) and each lender follows its own diligence mechanism to ascertain clean titles. Blockchain has the potential to solve the issue of land title search. Furthermore, stamp duties are different in each state adding to the complexity. A single centralized and standardized stamp duty process with the facitiy of e-stamping can truly unleash the potential of digital loans.

Drive personalization; one size does not fit all

Humans are social beings and like to be recognized. It never ceases to amaze how much of a difference being called by one's name makes vis-à-vis a bland "Madam / Sir". All consumers are looking for a product / service tailored to their specific context. Now, with data in abundance and with low cost computing infrastructure, it is feasible for lenders to do exactly this: drive personalization to the holy grail of 'segment of one'.

Starbucks is a great example of successful personalization. Starbucks started with the fundamental premise that consumers' needs

(in this case, choice of beverage and food) depend on individual taste, time of the day and weather conditions among others. Basis data collected on multiple variables, Starbucks makes customized offers to its consumers (on app). While the 'segment of one' is a distant dream, the company today already has 400,000 variants (or segmented offers). This has created a huge upside for Starbucks, dramatically improving the results of sales campaigns while simultaneously leading to consumer delight.

The Starbucks example is very instructional to lenders. Today, there is very little differentiation in terms of the offer (documentation, pricing, tenure, bundling etc.). Lenders need to replicate the 'Starbucks experience' in lending. Lenders have enough consumer data to be able to personalize offers and it is only a matter of time before this space truly gets disrupted.

Create a data 'mindset'

Data is one of the most critical and valuable assets for any company. The challenge is for companies (and individuals) to appreciate this fact and then act accordingly. Even today, across lenders, transaction data is not fully captured in all processes. Where the data is captured, lenders often do not leverage this to enhance the experience and add value to their consumers. The need of the hour is to recognize the value and then to invest in both the data infrastructure and in creating a 'data mindset'.

A 'data mindset' needs serious organizational commitment. A data project is often confused with just procuring the necessary IT infrastructure (e.g. data warehouse) and exploring a few experiments. It is often not led by a critical unit within the organization nor is capital explicitly allocated for the purpose. As a result, the organization is confused between big data use cases and support services such as MIS / reporting etc.

Jim F. Barksdale hit the nail on its head when he exclaimed "If we have data, let's look at data. If all we have are opinions, let's go with mine!". Data is at the heart of a digitization program. Lenders who can monetize data will reap significant benefits. But this needs an overall strategy, large scale commitment and careful planning.

One model that we have seen work is when companies have separated data as a business. Such companies have carved out a data organization as a business unit (BU) led by a Chief Data Officer (CDO). The CDO is given an appropriate budget with the mandate to scout for 'unicorn use cases', create a business case, partner with relevant BU's, set up project teams and execute in an agile manner.

Develop the tech platform of the future

As companies embark on digital transformation, it is critical to get a few key elements right to develop the tech platform of the future:

First, to ensure a sustainable and robust technical backbone, companies need to invest in making their tech stack 'digital ready' (e.g. SOA enabled, API gateway etc.) and not just implement temporary patches. Second, tech platforms will need to be scalable. Scalability is ignored by lenders, possibly because lenders often underestimate the scale of digitization in the medium term. E.g. adopting an open banking model could result in an exponential increase in transactions overnight. Cloud infrastructure can help lenders be more agile to changing needs. Third, in a bid to build technology rapidly, poor cyber security and frauds pose the biggest risk for lenders. While pressures to go-live fast will always exist, adequate security testing is a must, even if this leads to minor delays. Testers must check for loopholes in design, coding, as well as potential areas for hackers to break through. Fourth, as companies build the platform of the future, it is critical to 'stage-gate' investments and continuously emphasize RoI. Lenders often go overboard on investments in ancillary applications, in other words, the 'too much, too soon' phenomenon. It is necessary to build a list of use cases, prioritize basis stakeholder requirements, and then invest in technology. Finally, for a sustained competitive advantage, lenders will need to build intellectual property of their own, with an experience tailored to their consumer base. Traditionally, IT development is synonymous with 'vendor management'. However, there needs to be significant change in this vocabulary going forward. Lenders now

need to build and protect technological intellectual property.

CREATE A CONTROLLED ENVIRONMENT FOR INNOVATION

Sandbox is a "development first, compliance later" approach. Sandbox provides an environment for fintechs and traditional lenders to experiment while able to contain consequences of failure. Fintechs can pilot new product and service offerings under relaxed requirements.

The fintech regulatory sandbox of the Monetary Authority of Singapore (MAS) is an instructional example. This is how it works:

- **Application:** Any firm that wants to provide new financial services can apply. Applicant needs to specify sandbox's boundary conditions, e.g. duration, target consumer type and numbers. MAS potentially relaxes the following types of requirements: minimum paid up capital, license fee, management experience.

- **Evaluation:** Applicant needs to meet the objective, principles and evaluation criteria of the sandbox. Evaluation is based on a set of pre-defined criteria, e.g. innovative use of technology, clearly defined test scenarios and outcomes, exit and transition strategy.

- **Experimentation:** Product and service can be offered within agreed sandbox. Two options exist at the end of sandbox period: exiting the sandbox and operating under standard regulatory requirements or extending sandbox until regulatory requirements are met.

India will clearly benefit from a well thought through regulatory sandbox concept.

PARTNER, PARTNER, PARTNER

The digital world is extremely fluid with new players emerging everyday. With all the changes in technology and continuous innovations, it is impossible for one company to do it all. Therefore, the need of the hour is to partner. Partnerships can be of multiple types. Incumbent lender-fintech partnerships are the most obvious, where established lenders with access to consumers and a strong balance sheet partner with fintechs with deep technical expertise in niche areas including innovative products and alternate / surrogate data amongst others. The full potential is not being captured at the moment. There are several challenges today. For instance, aligning on risk appetite and the consequent go-to-market model takes time to agree upon. Data sharing between partners is another challenge as trust is still getting established between the various parties. Questions which are debated endlessly include the ownership of the consumer, data and the underwriting algorithm. As a result, consumer needs remain unfulfilled. Looking ahead, the industry needs to resolve the 'partnership conundrum' quickly—easier said than done!

MULTIPLY IMPACT VIA INDUSTRY WIDE PLATFORMS

The vision of 'Digital India' is being amply supported by the government through a variety of initiatives, e.g. TReDS as a platform for enabling online invoice discounting, GSTN as an entity is providing the technology infrastructure to enable GST implementation, GeM as a marketplace is taking the government procurement online. RBI has also acknowledged the potential of disruptive technologies like blockchain and has successfully tested a transaction platform based on blockchain. These initiatives, combined with other initiatives on implementing UPI, Aadhar etc. are taking significant strides in making India presenceless, paperless and cashless, the first 3 layers of the India Stack.

Additionally, along with credit bureau data, there exist several other digitized data points that are of interest to lenders (e.g. telecom data, utility bill, taxes, transactions, accounts etc.) A Data Utility which brings all these data pools together and facilitates digital lending can therefore be a game changer for the financial services industry.

Blockchain technology can be a powerful industry wide initiative. Here, it is important to identify use cases which can be scaled up and powerfully deployed over the next 2-4 years. For instance, blockchain could help fast track collateral evaluation and subsequent disbursement (especially in pari passu type of

charges where turnaround times are sluggish at the moment).

Build the digital ready organization

Digital capabilities required to win in this space are scarce. They are very different from those of legacy lending. Some examples of the skills of the future include UI/UX designers, solution architects, agile product managers, scrum masters, data scientists, digital transformation leads and programmatic marketing managers.

Since demand for such skills far outweigh supply, skilled employees have a wide choice of options. To attract and retain the right talent, lenders first need to understand what this class of talent looks for and therefore what should the new age employee value proposition (EVP) be. Lenders need to actively market this EVP, thereby building a brand. For instance, providing complete autonomy ("you will not report into any of us and will be working out of our new age digital centre") and absolute organizational commitment ("we are investing Rs XX billion on our digital initiatives that you will lead. You have the freedom to experiment and fail") are examples of a potential new age EVP.

Going forward, 2-minute algorithmic lending and digital consumer engagement will make multiple roles in credit sanctioning, credit operations and other back end operations redundant. Lenders will need to identify opportunities for redeployment of capable resources in alternate functions. Additionally, employees need to be re-skilled / up-skilled to take over technical roles of the future.

Go agile @ scale—break the silos

Amidst changing consumer needs and external environment, lenders' ability to execute rapidly will be tested. They will need to adopt 'agile @ scale' that entails no longer waiting for years to develop and roll-out platforms, but releasing early, highly functional versions adapting to changing consumer needs. Cross-functional squads will need to be set up. Development will need to move to short 'sprints', two to three weekly durations in which products are designed, built, tested, and deployed, driven entirely by consumer needs. These iterations need to translate into minimum viable products to ensure the product is being built incrementally and market tested iteratively. A cross-functional team is critical to the success of this approach, with traditional teams working hand in hand with technical resources (including vendors).

Manage cultural transformation

All of this implies a radical shift in the strategy and operations of lenders. Ironically, it is people who will impact the digitization agenda the most. People across the organization will be impacted severely. The shape of the organization will change, many current roles will get redundant and new age employees will be recruited. Furthermore, organizational power centres will shift. Erstwhile power centres—operations, credit and risk will lose out in the power battle, while technology and data will gain in power. Fiefdoms will collapse and new age leaders will rise. It truly is a perfect storm.

Amidst this storm, leadership will be tested like never before. Leaders need to remember that this is not the Old vs the New. The organizations that will win will be those that can combine the best of both worlds, the wisdom and experience of the old and the energy and digital capability of the young.

Conclusion: The digital lending tsunami is for real, and the opportunity is here and now. For lenders who are successful in riding this wave, it will result in ROA accretion of 0.4-0.5 percent, adding directly to their bottom line.

FOR FURTHER READING

The Boston Consulting Group publishes other reports and articles on related topics that may be of interest to senior executives. Recent examples include:

Global Retail Banking 2018 : The Power of Personalization
An article by The Boston Consulting Group, May 2018

It's Not a Digital Transformation Without a Digital Culture
An article by The Boston Consulting Group, April 2018

The Big Leap Toward AI at Scale
An article by The Boston Consulting Group, June 2018

Digital Innovation on the World Stage
An article by The Boston Consulting Group, May 2018

Getting Big in Small Business Banking
An article by The Boston Consulting Group, June 2017

Hopping Aboard the Sharing Economy
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Understanding the Financial Needs of an Evolving Population
An article by The Boston Consulting Group, December 2015

Customers Steer Digital Trends Driving Retail Banking Transformation
An article by The Boston Consulting Group, May 2016

Getting Bank Automation Beyond the Pilot Phase
An article by The Boston Consulting Group, August 2017

FIBAC 2017 - Finance in Digital Era : Navigating the Knowns and Unknowns
A report by The Boston Consulting Group in association with The Federation of Indian Chambers of Commerce and Industry (FICCI) and India Bank's Association (IBA), September 2017

Why Aren't Banks getting More From Digital?
An article by The Boston Consulting Group, December 2017

Encashing on Digital : Financial Services in 2020
An article by The Boston Consulting Group, June 2017

Retail Banks at the Crossroad
A report by The Boston Consulting Group in association with Efma, June 2016

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