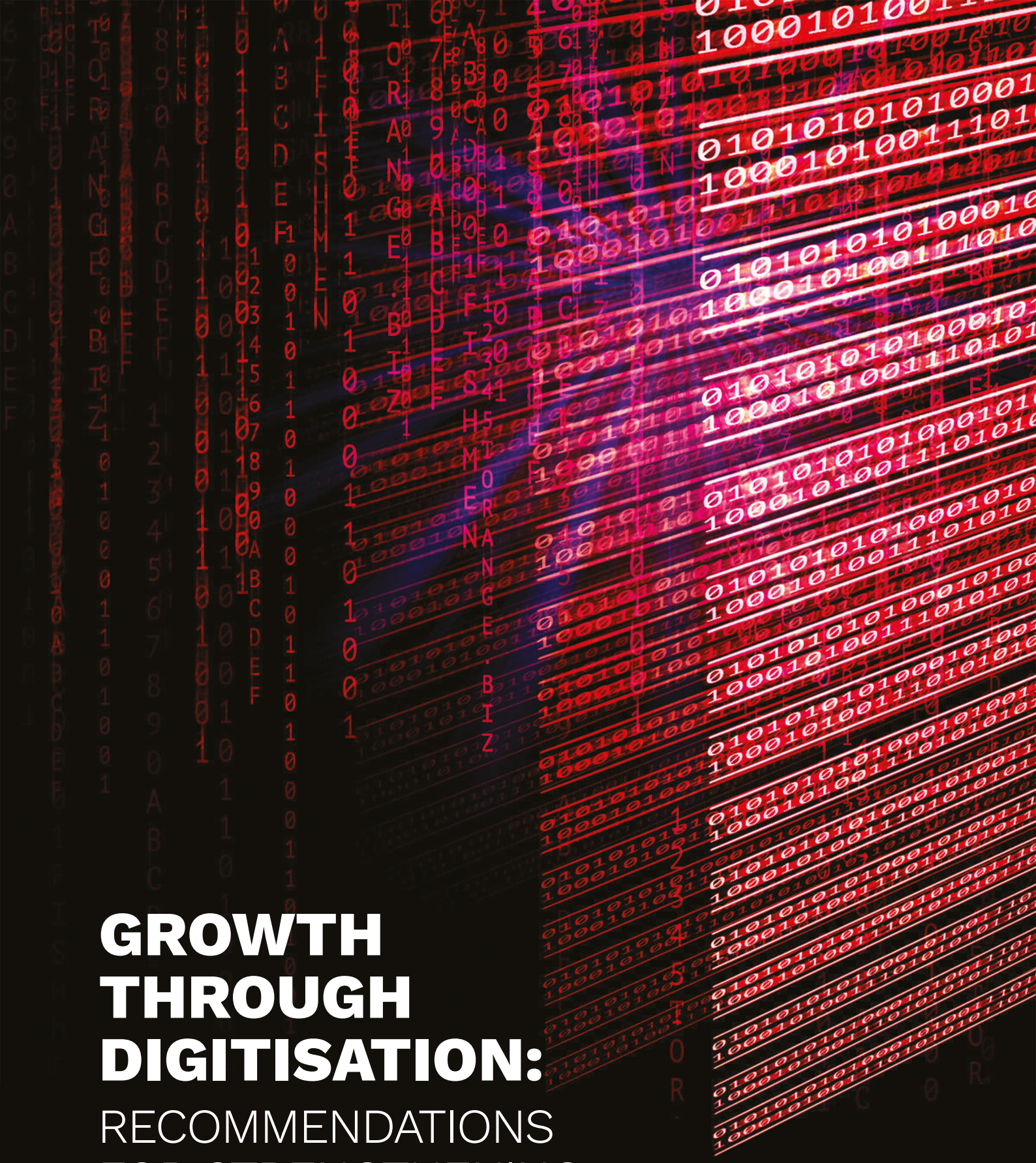

GROWTH THROUGH DIGITISATION:

RECOMMENDATIONS FOR STRENGTHENING INDIA'S MSMEs

KOAN

About Koan Advisory Group

Koan Advisory Group ("Koan") is a New Delhi based technology policy consulting firm. More details can be found at www.koanadvisory.com

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Acknowledgement: *This report would not have been possible without support from Mastercard. In particular, we would like to thank Mr Ashutosh Chadha and Ms Latika Taneja of Mastercard for their technical inputs. All views expressed here, as well as errors therein are the authors' alone.*

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EXECUTIVE SUMMARY

Cash is the preferred mode of transaction in India. This is because of aspects like convenience, ease of use and reliability. Such factors make it difficult for everyday users to simultanosuly recognise or understand the economic cost of cash which is well-documented and is borne by households, businesses, banks and the Central Bank.[1] In contrast, digital payments and digital financial services save such costs and simultaneously drive financial inclusion among the underbanked and unbanked.

This report approaches digital payments and digital financial inclusion through the lens of India's Micro Small and Medium Enterprises (MSMEs). India has 63.3 million MSMEs, which contribute one third of the country's total GDP. After agriculture, the MSME sector is the largest employer of Indians across the country and constitutes 92 percent of India's retail market by value (2016). Therefore, the roadmap prescribed here is aligned with the Government's objectives of building a trillion dollar digital economy.

Prior studies have found that only six percent percent of Indian micro merchants receive digital payments for commercial transactions. Others suggest that even after adoption of digital financial services, usage remains low. Therefore, MSMEs continue to have limited access to complex financial products like credit, insurance, securities, stifiling future growth prospects. With this context, this report delves the following areas:

- **Access to Finance:** The report highlights how digital payments and digital financial services in Busines to Consumer (B2C) and Business to Business (B2B) value chains can bring MSMEs out of informal lending ecosystems into more formal ecosystems. According to a 2019 Reserve Bank of India (RBI) Expert Report on MSMEs, the total addressable demand for external credit is INR 37 trillion, while the total credit supply from formal sources amounts to approximately INR 14.5 trillion.

- **Access to Market:** Decisions to adopt or not are not predicated on affordability alone. Other factors include customer demand, value to the business, and implications on tax liability. This section highlights need for policies to move beyond focus on lowering costs, to enabling value alignment (i.e. value-added services) with MSME business models. Key features of this would include price competitiveness (affordability) and need-based specialisation (innovation). The report also highlights structural incentives-mismatches for traditional banking institutions to adequately service the demands of MSMEs.

- **Infrastructure:** The report covers challenges such as low deployment of payment and settlement infrastructure like Automated Teller Machines (ATMs) and Point of Sale (POS) terminals. India compares unfavourably with countries like Indonesia, South Africa, Mexico, China and Brazil. India's feature phone segment also remains under addressed by digital payment solution providers. The report also assesses features such as the One Time Password (OTP) reliant transaction authentication regime.

- **Technology Integration:** The report studies last mile dimensions and contemplates interventions which can ease Indian MSME digital transformation especially in rural segments. It emphasises the role of non-banks, the importance of competition and quality of service. It also considers the challenges of merchant acquisition, and how limitations on dynamic pricing inhibit technology solution providers from building products and services which can nudge MSMEs to adopt payments acceptance infrastructure.

• **Knowledge Dissemination:** The report surveys the need for policy interventions to effectively raise MSME awareness of digital payments and digital financial services. MSMEs require training in how best to leverage digital payments for business growth and expansion, and how to avail of benefits in terms of forward and backward linkages.

Based on the analysis in the report, the key recommendations that are detailed subsequently are as follows:

1. **Decentralised financial inclusion** through channels like State Level Bankers' Committees (SLBC), District Level Coordination Committees (DLCC) and Block Level Coordination Committees (BLCC).

2. **Evidence Based Interventions** to understand merchant and customer attitudes towards digital payments and cash.

3. **Regulatory Approaches** that promote competition, innovation, convenience, affordability, trust and security. This means decision-makers should adopt a light touch and a risk-based approach, espousing principles of ownership, platform and technological neutrality.

4. **Regulatory Sandboxes** to test low-scale and time bound deployment of new digital payments solutions for MSMEs.

5. **Institutional Reforms** such as appointmet of a Payments Regulatory Board (PRB) and constitution of a multi-stakeholder Payment System Advisory Council (PSAC) to support decision-makers.

6. **Addressing Single Points of Failure** to overcome risks of market concentration by streamlining processes towards establishement of a regulatory framework for authorising new payment system providers.

7. **Improving the Merchant Acquisition Ecosystem** by enhancing incentives and minimising price regulation.

Other recommendations in the report relate to (a) interoperability of new acceptance infrastructure like Qucik Response (QR) Codes, (b) private public partnerships to accelerate awareness and adoption, (c) data sharing and collaborations to support non-banking digital financial players, and (d) disincentives for cash withdrawal and usage.

INTRODUCTION: BENEFITS OF DIGITAL PAYMENTS AND THE COST OF CASH

There has been an impetus to formalise India's economy since demonetisation.[2] Such measures aim to reduce cash circulation, shrink the shadow economy, improve tax collection, increase financial inclusion, bring in transparency, and stimulate economic productivity. Demonetisation was also meant to catalyse a less-cash economy driven by the widespread adoption of digital payment and settlement systems. However, current levels of cash have surpassed pre-demonetisation levels.[3] This report highlights key bottlenecks to overcoming the use of cash, and offers pathways for digitisation to help the effort. In particular, the analysis focuses on digitising India's MSME segment.

Cash remains the preferred mode of transacting because of qualities like user-friendliness,[4] inclusivity, easy accessibility, the absence of third-party facilitators or transaction fees, no procedural hassles like Know Your Customer (KYC) identity verification processes,[5] privacy and anonymity, and reduced visibility to tax collectors. Another perceived advantage is that cash does not require electricity, network connectivity, or investments in hardware or software. Nor is it susceptible to system failures or cyber attacks. Additionally, participants in cash-centric markets often have some hidden affinity or intrinsic value[6] associated with transacting in cash. This may include considerations such as security, finality or even achievement—factors which extend beyond the paradigms of demand and supply. While such perceived benefits are intuitively apparent, the cost of cash is often ignored.

" A 2014 study estimated the cost of cash to india's banking system to be inr 210 billion per year.[7]

Even at the individual level the use of cash is not free nor as seamless as perceived. The costs include inexact settlement, the time spent in withdrawing fees, transportation fees and cash withdrawal fees or charges (when applicable). Such costs are collectively borne by households, businesses, banks and the Reserve Bank of India (RBI). According to an estimate, the net cost of cash was 1.7 percent of India's real Gross Domestic Product (GDP) in 2014-15.

" The ensuing shadow economy so created led to a loss of tax revenues amounting to 3.2 percent of GDP that year.[8]

Crucially, cash does not help with financial inclusion objectives. The RBI defines financial inclusion as ensuring that underserved sections of society can access appropriate financial products and services when they are needed. Such access must be affordable and available in a fair and transparent manner.[9] Financial inclusion is particularly important for vulnerable groups like women, youth, traditionally disadvantaged communities, persons with disabilities, and rural residents in unbanked or underbanked areas. And digital financial inclusion, or financial inclusion through digital financial services,[10] can among other benefits help increase the labour market participation of marginalised groups. For instance, the gender divide in Indian financial services is severe. A 2017 survey by the World Bank observed that

42.8 percent of Indian males aged 15 or over possessed a debit card, compared to only 22.3 percent of Indian females of the same age. Additionally, 5.5 percent of males in this group used the internet to pay bills or buy something online, compared to just 3 percent of females.[11] Targeted interventions for the adoption of digital payments could help disrupt such social inequities and add economic value.

Digital payments technologies can broadly be bucketed into internet banking, mobile money and credit/debit cards.[12] Such technologies are viewed as the cornerstones of financial inclusion initiatives here—for instance, mobile money has been introduced in more than 90 countries.[13] Digital payments help overcome the frictions mentioned earlier and can increase security from threats like physical theft. They also help businesses keep records and maintain formal and verifiable transaction histories. Moreover, economy wide benefits include greater tax compliance. Such features can augment opportunities for traditionally excluded segments to interact with the formal financial sector and upltift people's lives.[14] In countries like Kenya, universal coverage of mobile money has led to a two percent reduction in the total number of poor households in the country.[15]

Considering the obvious benefits of digital financial inclusion, an effective point of entry is at the level of MSMEs. Globally, micro merchants serve 4.5 billion customers each day and annually transact around USD 6.5 trillion.[16]

" India has 63.3 million MSMEs, which contribute one third of the country's total GDP. [17]

Still this share is some 10 percentage points less than in the US and 23 points less than China.[18]

Most of the sector is unorganised, informal and unregistered, and employs 110.9 million people of whom 76 percent are men and 24 percent women. 36 percent of these MSMEs operate in manufacturing and 38 percent operate in trade.[19] Moreover, it was estimated in 2016 that micro merchants account for 92 percent of India's retail market.[20] After agriculture, the MSME sector is the largest employer of Indians across the country and constitutes a significant part of the country's economic activity.

In its roadmap for achieving a trillion dollar digital economy by 2024-25, India's Ministry of Electronics and Information Technology (MeitY) earmarked the uptake of "next-generation financial services" as one of its central goals.[21] In this context, the roadmap identified flow-based lending and advanced underwriting of credit for MSMEs as key objectives.

" MeitY sees an opportunity to create value worth USD 40 billion by reducing cash circulation within the sector by around 40 percent.

Digital payments will also bring with them the opportunity for MSMEs to earn interest on money stored in bank savings or current accounts. And digitising transactions will help MSMEs reduce the costs associated with manual processes.

Digital payments are a critical component of the MSME ecosystem, as they can be used to access more complex products and services like credit, insurance, securities, financial planning, etc. The RBI's Ombudsman Scheme for Digital Transactions, 2019 defines "digital transactions" as a payment transaction effected without the need for cash in at least one of the two legs, with either the sender or receiver operating digital or electronic modes of payment.[22]

Digital payments is a two-sided market, where the first side is supply/issuance and the second is demand/acceptance. The supply/issuance side comprises payment services delivered through bank accounts, bank branches, card-based instruments, business correspondents, mobile phones and related devices. These services are provided via an underlying payments infrastructure such as:

- Real Time Gross Settlement (RTGS), the National Electronics Fund Transfer (NEFT), the Immediate Payment Service (IMPS) system, the Unified Payments Interface

(UPI), the Bharat Interface for Money (BHIM) which functions over the UPI architecture, major card networks, QR Codes, ATMs, mobile wallets, the Aadhaar Payment Bridge System (APB), the Aadhaar Enabled Payment Systems, POS terminals, etc.

There are three levels in a payments ecosystem. The first is the providers of hardware, software and network-related infrastructure such as POS terminals, smartphones, mobile apps and internet access (mobile or fixed line). The second level comprises payment system operators which facilitate transactions between banks or financial service providers. Finally there are the banks and other transaction account providers who process and record payments.

Another way to imagine digital transactions is through three discrete stages:

1. **Initiation**— the trigger for the transaction, like a card or mobile app,
2. **Infrastructure**— the clearing and settling system, like UPI or an authorised card network, and
3. **Information**— which includes value added information services like inventory management and procurement intelligence.

Digital payment adoption, especially in MSME environments, remains suboptimal. Cash remains the preferred instrument for commercial transactions in most developing or emerging markets. One reason is the lack of reliable internet connectivity in rural areas. Another is low awareness of the economic and security benefits of digital payments. And while merchants may be aware of the Merchant Discount Rate (MDR) and similar transaction fees,[23] they are less appreciative of the costs associated with performing all transactions via cash and other paper-based instruments.

As a result, only around six percent of micro merchants in India receive any form of digital payment for commercial transactions.[24]

> **" MSMEs operate under very small margins (in cash-based ecosystems) and tend to serve low-income customers.[25] They may be deterred by the high upfront costs of accepting digital payments. Even when MSMEs do adopt the requisite infrastructure, usage remains low.**

One survey of micro merchants across the five cities of Jaipur, Kanpur, Indore, Nagpur and Surat found mobile phone penetration was relatively high in these areas (at 95.4%) yet only 22.5% of merchants used their mobile phones for financial transactions.[26]

To explain such low usage of digital financial products, let us first assess the barriers MSMEs face in interacting with financial markets.

ACCESS TO FINANCE

The revenue cycles of most MSMEs in India are seasonal in nature. Due to this, traditional financial products are not aligned with their business activities, which leads to a higher likelihood of unpaid instalments and negative repercussions. The time and frequency of visits it takes for MSMEs to avail of formal credit is often a major obstacle as well. Exacerbating this, formal credit providers are not in a position to provide MSMEs with loans and other financial services because they lack formal transaction histories, account statements, trade receivables and reconciliated statements.

Such financial exclusion ultimately hampers MSME growth. Specifically, it hurts MSME working capital flows which are used to secure inventories, purchase input materials and tide over delays between product delivery and the receipt of payments.

" **Banks have little appetite to lend to small businesses due to transaction costs and perceived high risks. MSMEs also find the terms of microfinance institutions (MFIs) burdensome.**

Such factors lead to a credit gap, referred to as the 'missing middle'. MSMEs tend to resort therefore to informal loans, which are smoothly sought through pre-existing relationships but have much higher interest rates.

Digital payments and ensuing financial services have the capacity to serve the aforementioned missing middle, by reducing transaction costs and increasing efficiency and transparency. Digitising both B2C and supply chain transaction histories could lead to increased MSME access to formal credit, which is cheaper and faster, and it would offer flexible repayment or instalment structures. It does this by creating historical records of cash flows, costs and related information (the establishment's digital footprint) paving the way for flexible or innovative flow-based lending opportunities.

Further, entry into an institutionalised credit ecosystem could create an opportunity for MSMEs to expand and grow their businesses, and transition away from high-interest informal moneylending markets. Access to such finance would help the business maintain books and make capital investments.[27]

" **The government estimates that digital flow-based lending could address up to 80 percent of the credit gap faced by MSMEs, and generate additional economic value up to USD 120 billion by 2025.[28]**

According to a 2019 RBI Expert Report on MSMEs, the total addressable demand for external credit is INR 37 trillion, while the total credit supply from formal sources amounts to INR 14.5 trillion approximately. This suggests an overall credit gap in the MSME sector amounting to INR 22.5 trillion.[29]

Around the world, small and medium enterprises receive only a minimal share of credit from formal financial systems. Such a trend persists across advanced and emerging markets.[30] The major structural barriers to bank lending to MSMEs include information asymmetries, high transaction costs, and potential adverse impacts on traditional relationship lending operations.

In the Philippines, for instance, small businesses struggle to access credit from formal financial providers.[31] Almost all loan rejections in such markets are concentrated in small business segments.[32] Discussed in more detail later is one of the main reasons smaller firms struggle

to reap benefits from traditional financial institutions like banks: they are not central to the core business of large banks. The Philippines financial regulator even explicitly stated that bank business models may not be geared toward lending to the “agrarian and MSME sectors”.[33]

One way to apprise MSMEs of the connection between digital payments and streamlined access to cheaper formal credit, is by creating a platform to undertake literacy and training workshops. At this stage it is important also to understand the incentive structures and policy bottlenecks that hinder MSME participation or access to digital payments and related markets.

MARKET ACCESS

Most Indian authorities believe that supply side barriers, i.e. prohibitive costs, must be reduced in order to spur adoption and regular usage. However, a recent study of MSME fixed-store owners in Jaipur highlights nuances often overlooked by decision makers.[34] The study found that although such store owners operate with low profit margins, they have the resources and documentation necessary to install the requisite payments acceptance infrastructure, acquire an internet connection with appropriate bandwidth, and pay the concomitant transaction charges or fees. A large number of these MSMEs also had the literacy and know-how to use payments platforms.

The study found that MSME decisions to adopt or not were based on more than affordability. These factors included customer demand, value to the business, and implications on tax liability.

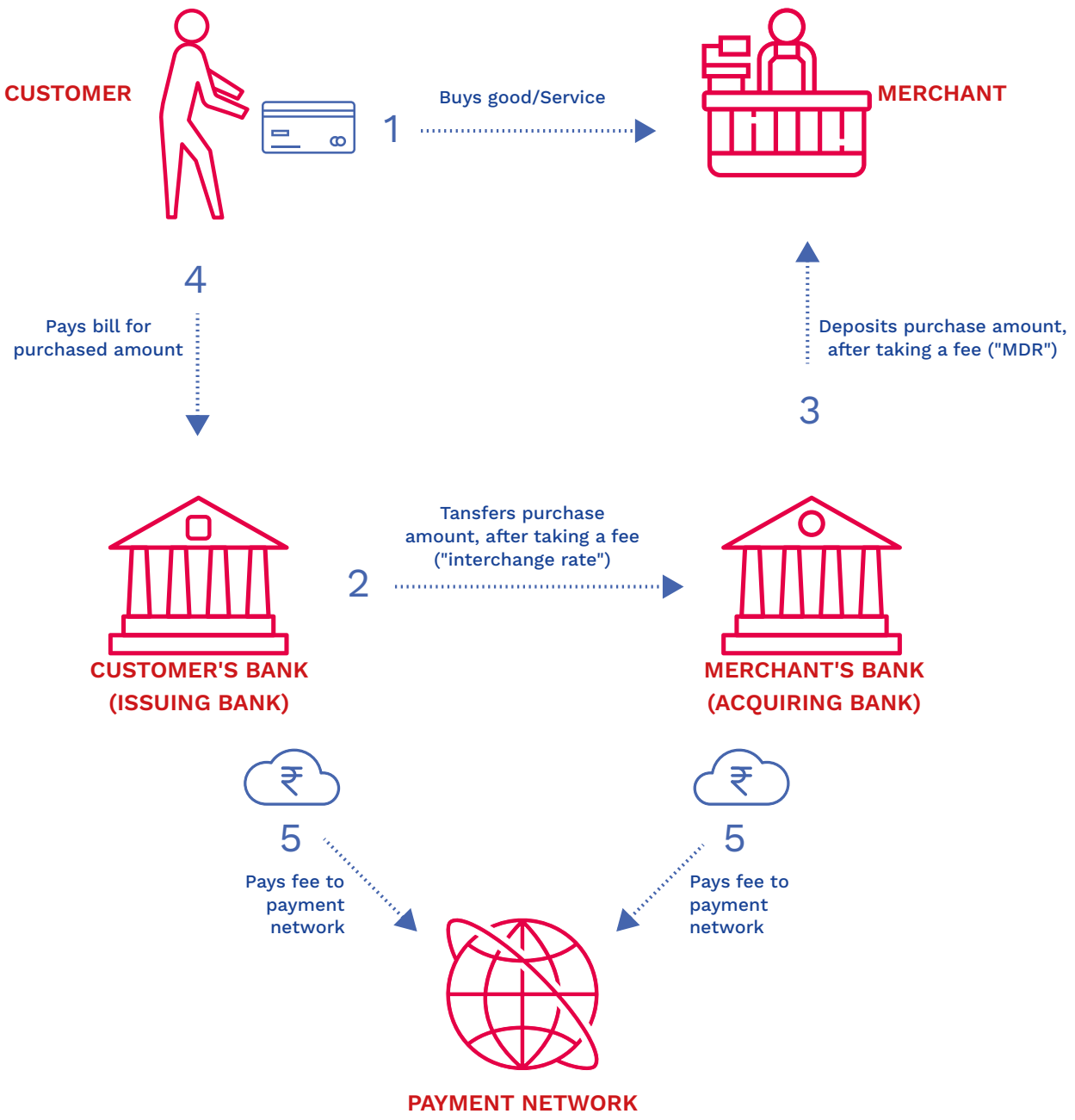
Strikingly, the study found that even among digital payments adopters, 81.4% of transactions by value were performed through cash. This is especially the case in supply chain and B2B payments, where cash or cheques are used for over 90% of total transaction value. The supply chain aspect is important, because if merchants must transact in cash to secure their inventory (and conduct day-to-day activities) then there will always be a need for cash.Therefore, digital payments may in fact prove a hindrance to business operations.

" There is thus a need for the policy stance to move beyond lowering costs, to creating value aligned with MSME business models.

Gaps to Bridge to Spur Adoption and Usage:
The core functionality of digital payments must supersede cash. One of these core functions is convertibility. Since upstream ecosystems are cash-laden, working capital requirements dictate the need for digital funds to be acceptable in B2B and supply chains. Moreover, near-term merchants who accept digital payments should be provided with features/ facilities where they can easily obtain cash for follow-up transactions. Business continuity, efficiency and growth features may also have a certain appeal for regular use among MSMEs.

Benefits such as access to capital (being the most salient) new revenue streams and business/ inventory analytics may attract potential adopters.[35] Key features in this regard include price competitiveness (affordability) and need-based specialisation (innovation). A structural challenge for merchants in developing markets is the time required for businesses to formally apply and set up acceptance infrastructure.[36] There is a need for Indian policymakers to assess whether such procedural requirements can be streamlined.

Incentives Mismatch:
Major service providers (in certain banks) do not have adequate economic incentives to service MSMEs. The typical debit or credit card transaction operates on the four-party model, as detailed in the figure below.[37]



This model is further disintermediated by other payments facilitators who participate in the payments value chain. All these parties are compensated for facilitating the transaction as shown above. This compensation comes from the transaction fees paid by the merchant, i.e. the MDR. Profitability for payments facilitators is contingent on large transaction volumes, without which providers find it difficult to meet their costs. The costs are typically shouldered by the banks and include terminal rental, maintenance, and follow-up services for merchants. Such costs drive the MDR, the ultimate transaction fees.

" These underlying economics mean that bank-led merchant acquisition models can be prohibitively expensive, with poor product and follow-up service experiences and no compelling value proposition. International studies have also observed that commercial banks are ill-suited to serving MSMEs in payments markets. [38]

This is attributed to incentives for serving high income, urban markets rather than informal ecosystems like those of MSMEs. Other factors include regulatory constraints like KYC requirements, and banks' own allocation of resources to other business verticals.[39] These studies also found that commercial banks have limited incentives to collaborate to expand the market.

Impact of Price Regulations on Access: Considering the above, price controls imposed by government authorities may limit market expansion. This is because the incentives to serve small businesses could erode. For example, MDR caps in Nigeria led banks to treat digital payments as a loss-making endeavour, where digital payments is perceived as an ancillary component of their wider activities.

Need for Value Added Services:
Technology and service providers must provide merchants with value propositions extending beyond the perceived advantages of cash. For MSMEs this value could be centred on improving working capital and driving efficiencies in work processes. At its core the success of an MSME is contingent on its ability to generate sales (revenue) and secure inventory/inputs (purchases) in a sustainable manner. In this regard, digital payments can help with both forward and backward linkages.

A type of value-added service that can help with this are flow management and recurring payment solutions. Examples of such sophisticated payment models include Equated Monthly Installments (EMIs), subscriptions, and the Bharat Bill Payment System (BBPS) which is an inter-operable bill payment architecture (physical and virtual) for invoicing and payments, developed and operated by the National Payments Corporation of India (NPCI). Another system with untapped potential is the Trade Receivables Discounting System (TReDS). TReDS helps MSMEs tide over liquidity constraints to allow them to secure financing through their trade receivables from corporate and other buyers—like the Government and Public Sector Units (PSUs) —in a model where there are multiple financiers. This mechanism takes place through digital platforms. Although the RBI introduced it in 2014, there are as yet only three operational TReDS platforms. Such platforms require greater impetus as articulated in the RBI's *"Payment and Settlement Systems (PSS) in India: Vision – 2019-21".*[40] Bridging the gap in adoption/usage also requires greater participation from the private sector.

The experience in countries like Australia[41] suggests that non-banking digital payments solutions create compelling value propositions for MSMEs curated to their needs. For instance, Australian paytech firms have helped retail MSMEs digitise their supply chains. They bring value to wholesale vendors as well, by introducing process related efficiencies and transferring maximum value upstream. Such technology companies solve for considerations like user experience, risk protection/ diversification, speed, efficiency, etc. The benefits include timely cash flows and robust client management. Finally, with advances in technology[42] digital payments providers are able to focus on greater specialisation. Such product and service innovation augments MSME choice, since digital financial solutions move away from generic, bank led options.

The Australian paytech ecosystem has benefited from features like competition, open regulation and open API architecture. This has allowed specialised paytech companies to develop tailored solutions for SMEs (such as reconciliation and reward programmes); and ensure transaction and network security by riding on the rails of authorised card networks or other underlying payments infrastructures.

Such value creation was the result of disintermediating value chains. Value erosion leads conversely to a scenario where bank-led generic offerings are all that remain, leading to suboptimal outcomes in terms of adoption. For such an open ecosystem, Indian regulators would do well to preserve revenue streams for disparate use-cases.

" Similar to jurisdictions like Japan and the European Union (see the Revised Payment Services Directive i.e. PSD2[43]), policymakers should consider a consent-based and privacy respecting data sharing architecture.

Such measures can remove barriers to entry for new players who can dynamically solve for customer analysis, transaction reconciliation, reward schemes, target marketing assistance, better business analytics, procurement insights, customer relations management, process automation, and a general easing of the administrative burden. At the same time it will be important to ensure that such measures balanced with principles of fairness, reasonableness, purpose limitation, collection limitation, adequate notice and consent, data storage limitation and accountability which are expected features of India's eventual data protection/online privacy framework.

The need is to spur innovation, because no one-size-fits-all solution will entice all MSMEs, which are all in different stages of their digital journeys. While some are still stuck in cash or paper-based paradigms, others have adopted digital payments solutions but their usage is suboptimal. In a generic services situation such value gaps cannot be bridged, which means value is left on the table.

In India, the use of digital payments remains inefficient and value is left on the table because of ad hoc interventions by authorities seeking to remove supply-side barriers (costs) for merchants. In the process, value for specialisation is inadvertently eroded, resulting in a bank-led merchant acquisition ecosystem with generic payments solutions. For appropriate solution and price discovery, Indian policymakers must facilitate competition, innovation and choice, and avoid decisions picking winners as that can harm user welfare.

Nevertheless, small and semiformal merchants in developing markets face similar pain points. Primarily these revolve around issues like customer relationships, staff performance, inventory management, supplier payments, and working capital (which tends to be the chief constraint). According to one World Bank estimate 70% of MSMEs worldwide cannot access formal credit—due largely to a lack of formal financial information. These doors can be opened even by digitising a model share of transactions, which would provide adequate baseline data for digital financial service providers to extend loans. Examples of such modern value-added service providers include *Kopo Kopo* in Kenya and Square in the USA.[44]

Low-Hanging Prospects for Digitisation: While MSME awareness of digital banking and related tools is high, usage remains low.[45] This is because digital payments products and related financial services are not designed and/or tailored to meet specific business needs. For instance, formal lending comes with indirect costs like multiple visits to physical branches and lengthy loan disbursal processes. Therefore, many MSMEs prefer to interact and deal with informal lenders who may charge high or texploitative interest rates.

This indicates that digital financial inclusion programmes that focus on access must also pay adequate attention to design and delivery—in the form of flexible credit propositions aligned with sales patterns, for instance—which are often linked with factors like seasonality. Therefore, targeted credit propositions that are in sync with business cycles could be attractive to MSMEs.

Digital payments solutions that aid with asset- and cash-flow based lending are promising in this regard.

" In Kenya, card network providers have partnered with organisations to provide solutions like *Jaza Duka* which offer small merchants low-interest loans based on purchasing data (an indicator of creditworthiness).

The need for tailored solutions is particularly important in the MSME segment, given how many of these businesses have operated outside formal financial systems since their inception. Many MSMEs are unfamiliar as a result with basic aspects like making a budget or deploying credit in a strategic manner aligned with overall business growth objectives.[46]

B2B and Supply Chain Payments:

Each B2B interaction (where MSMEs interact with counterparties) is an opportunity for a mature fintech or digital financial offering. The value in targeting such transactions is that such interactions are steady and consistent in nature. Once digitised, it becomes a periodic channel for transferring value. It can also act indirectly to convert MSME establishments into digital payments accepters, leading to greater customer adoption of digital payments solutions. The tools to unlock such channels could come in the form of rewards programmes for transaction volumes, or the exchange of information that helps with reconciliation processes.

INFRASTRUCTURE

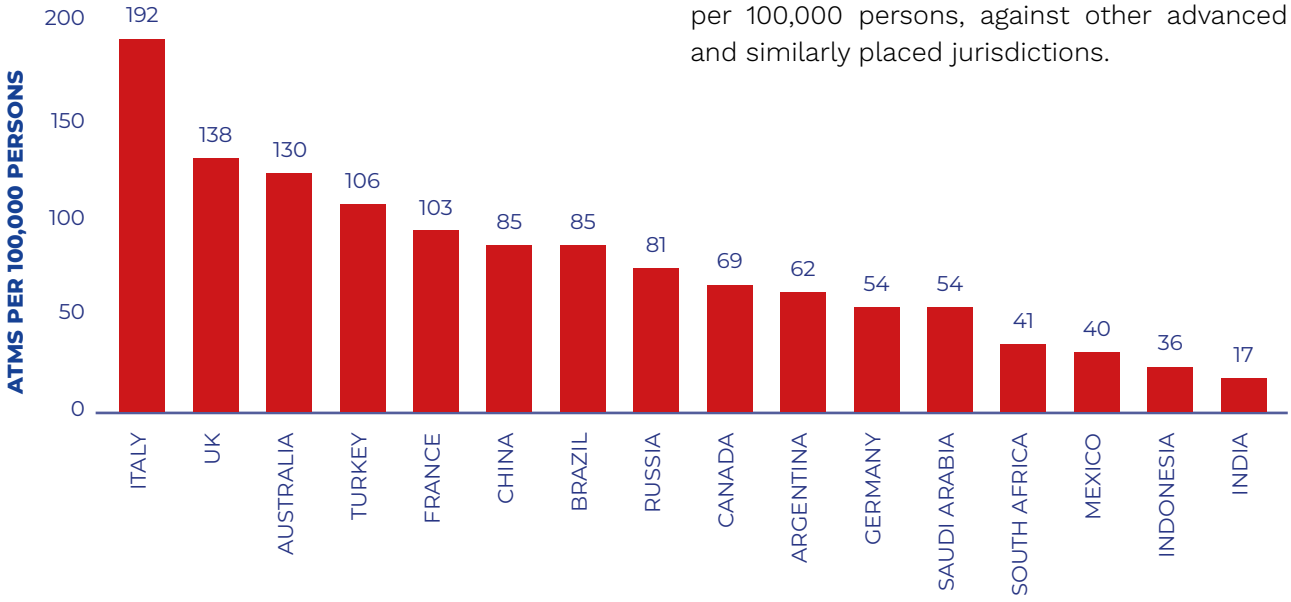
India's Card Based Ecosystem:

Cards are the most ubiquitously owned payment and settlement instrument for retail digital payments in India. In March 2019 the country had 925 million debit and 47 million credit cards. India's card market is dominated by the NPCI's RuPay, and global players Visa and Mastercard. These authorised card network players can have members or associate members from scheduled commercial banks and non-banking PPI issuers. Despite the clear disparity in the number of debit cards and credit cards, only recently did the volume and value of debit card transactions surpass those of credit card transactions.[47] Per card, the volume and value of credit card transactions remain comfortably ahead of debit cards.[48] Credit cards are used more often for larger purchases and for online[49] transactions. The underpenetration of credit cards is a matter policymakers must investigate, especially given that leading credit information companies like TransUnion CIBIL have information on around 550 million individuals and businesses.[50]

Demand/Acceptance Side:

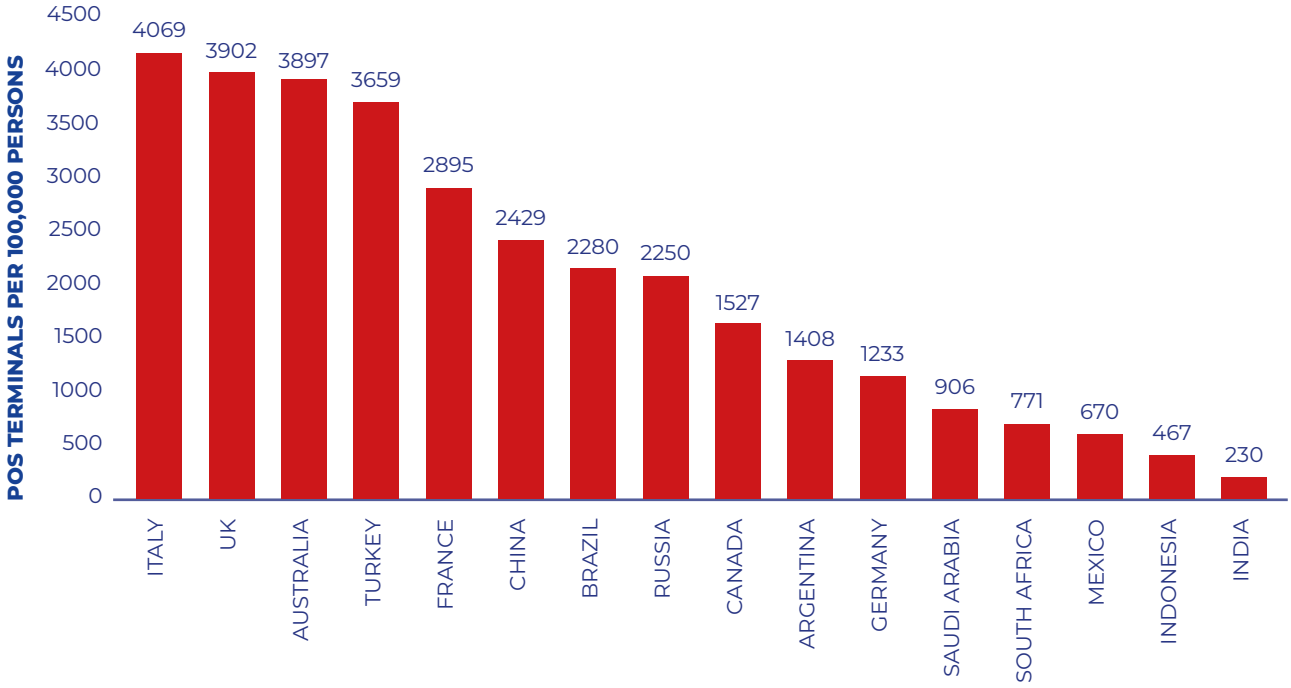
Apart from virtual online transactions, card instruments can be used at Automated Teller Machines (ATMs) operated by banks and non-banks,[50] and at Point of Sale (PoS) terminals installed at merchant locations.[51] Importantly, the viability of ATMs is dwindling. The WLAO ecosystem has struggled to pick up, and investments by Scheduled Commercial Banks (SCBs) and the total number of ATMs have reduced.[52] Besides these infrastructure constraints at the ATM level, the deployment of acceptance infrastructure at merchant locations remains low—China in 2016 had over 4 credit/debit cards and 0.2 PoS terminals per capita, while India had less than one card and 0.002 PoS terminals per capita.[53]

India's PoS density numbers clearly illustrate this. Prior studies have found that PoS penetration in India is far lower here than in developed Asian economies like South Korea and Singapore.[54] India's suboptimal performance in terms of infrastructure penetration can be shown in the two figures below. In it we juxtapose India's performance in terms of ATM and POS density per 100,000 persons, against other advanced and similarly placed jurisdictions.



ATM DENSITY IN INDIA (2017)

Source: BIS, World Bank



POS DENSITY IN INDIA (2017)

Source: BIS, World Bank

" In December 2018, India's PoS density only improved marginally and was at 266 per 100,000 people and its ATM density deteriorated to only 15 per 100,000 persons.[55]

The comparison of infrastructure density provided in the figure above[56] illustrates where India ranks against other developing and developed markets.

Such low comparative performances certainly mean that India suffers from some structural bottlenecks, or a type of market failure, dissuading acquirers from deploying critical payments infrastructure. Market failure is demonstrated by the prohibitively high cost structures and the limited availability of attractive digital payments offerings with accompanying financial service use cases. This leads us to conclude that the market lacks in terms of cost competitiveness and product or service innovation.

Policy interventions have so far largely focused on the issuance side of the marketplace. The May 2019 report of the RBI's High Level Committee on Deepening Digital Payments suggests a shift in policy focus to the acceptance side, to catalyse the continuous and voluntary use of digital payments.[57] Such realignment would help digitise upstream value chains (at the B2B level) and bring higher-value transactions into the digital fold. It would also present fewer touchpoints to target collectively, as customers would be more disaggregated.

As stated earlier, merchants have more permanent economic relationships and interactions which can be digitised in a more consolidated fashion. Such an approach would require a greater policy focus on the barriers and incentive structure for last mile deployment. This could mean investigating the prevailing cost structures for merchant acquisition, transaction and service fees or charges, procedural barriers causing frictions such as KYC processes, trust in network-based payment solutions, and the non-smartphone or internet segments.

Mobile-First Internet and Feature Phone Infrastructure:

According to February 2019 data provided by the Telecom Regulatory Authority of India (TRAI), India has 1.184 billion wireless mobile subscribers and 532 wireless broadband subscribers. Despite the more than 350 million smartphone users, a significant portion of India's 1.35 billion population still operates outside the smartphone and internet ecosystem. Even as data prices tumble, India's mobile-first internet economy is not likely to be as reliable or robust as wirelined internet societies. It is important for both industry and policymakers to ensure that digital payments initiatives account for these deficits and address the needs of feature-phone and USSD users—who typically reside in lower tier areas.

Network Related Issues:

The digital payments ecosystem in India depends highly on the reliability of underlying internet networks. This is because robust internet connectivity is a prerequisite for both in-store transactions (at PoS terminals) and online transactions (to receive OTPs in time). Network availability and reliability is crucial. Authorities should therefore encourage alternative solutioning. An example is modern transaction authentication technologies which do not require a lossless internet connection, such as passive biometrics, passwordless transaction authentication, tokenisation, Near Field Communication (NFC) based Tap and Go solutions, etc. Further, payment network end points (like PoS terminals and applications) should be encouraged to monitor the quality of network connectivity, and based on aggregate data inform the relevant authorities (RBI, MeitY, TRAI, etc.) of the need for network infrastructure upgrades.

TECHNOLOGY INTEGRATION

ATM Viability to Engender Trust:
In order to ease rural segments into the digital transformation it is important to provide people with the facilities to get cash when necessary. This is especially the case for MSME segments where most of the supply chain and supplier relationships tend to be cash centric. ATMs may need to be reimagined as access points for financial/transaction services beyond cash withdrawal. Options in this regard include customer education, awareness, support, redressal and also use as a means of conducting certain digital financial transactions. Similarly, other last-mile digital payments acceptance infrastructures could be used as a cash in/ cash out ecosystem allowing users to convert digital money into cash during exigencies. Such systems would indirectly help engender trust in digital payments systems. They can also be a subtle way of dissuading people from using cash, by imposing a withdrawal fees to avail of such facilities.

Business Correspondent Dimension:
Business Correspondents (BCs) and agents are integral in extending the reach of the banking system to the last mile, especially in underserved or rural regions. They work akin to formal banking outlets and under formal contractual arrangements with banks. These agents could be a potential pathway to initiate the MSME digital journey. India can learn from countries like Nigeria, Kenya, Uganda and the Philippines, and allow banks and non-banking financial operators to transform BC agents into establishments where rural citizens can access multiple digital financial services.

Merchant Acquisition Challenge:
While merchant acquisitions are essentially a technology enabled business, only banks are allowed to perform this activity. Such a regulatory barrier was identified as a market structure issue by the RBI's High Level Committee on Deepening Digital Payments.[58] With a view to increasing investment and innovation in merchant acquisition, the Committee recommended permitting non-banks to participate in payment schemes, and build/deploy acceptance infrastructure.

Such regulatory barriers subsist because growth in India's financial services has been led by banks,[59] through basic bank accounts operationalised through agent networks or local institutions. However, the Indian[60] and international[61] literature highlights that the business models of standard commercial banks are ill suited to last-mile connectivity, adoption of payments acceptance infrastructure and digital financial inclusion endeavours. This may be attributable largely to the fact that their offerings are generic, and lack specialisation curated to the needs of any particular sector or establishment.

In other special financial inclusion initiatives, the authorities have conceived specialised financial service providers like Payment Banks and Small Finance Banks for low value customers. Other examples of specialisation for financial inclusion initiatives include Micro Finance Companies (for loans) and Business Correspondent agents for last mile banking correspondence.

The lack of specialisation in the payment acceptance infrastructure space is a critical failure in the market, since generic banking solutions fail to provide a compelling value proposition for merchants to replace cash. Subjecting them to both product/service and price competition is a prerequisite to breaking the culture of cash.

A key component of this is competitiveness in dynamic pricing, which offers providers with the flexibility to deliver value to merchants/ customers superseding that of cash. However, the authorities have artificially capped this in certain transaction markets. They do this by capping or prohibiting facilitators from charging Merchant Discount Rates or MDR.

" Critically, fees paid by merchants like MDR serve as remuneration for participants in the value chain which disintermediate the transaction, i.e. aggregators, acquirers, authorised card network providers, issuers, technology providers, etc. Consequently, providers are not allowed to extract value and meet the merchant's specific demands.

Technology providers in India are not in a position to take alternative paths to provide merchants with payments acceptance infrastructure/ solutions. As a result, merchants are provided with inefficient linear/generic cost solutions. The RBI's High Level Committee on Deepening Digital Payments notes that interventions removing or capping the MDR distort incentives and make it more beneficial to activate cards rather than acquire merchants. This is because the interchange fees at the wholesale level remains unregulated. Such an approach is a departure from how other Indian regulators treat such networked ecosystems. In telecom for example, TRAI regulates prices at the wholesale level, i.e. interconnection, and allows for competitive price discovery at the retail level subject to conditions relating to transparency, choice, interoperability and non-predation. Even in payments markets, international best practices from Australia and the US indicate that interventions capping interchange rates (at the wholesale level) have been successful in reducing merchant costs and increasing digital payments usage.[62]

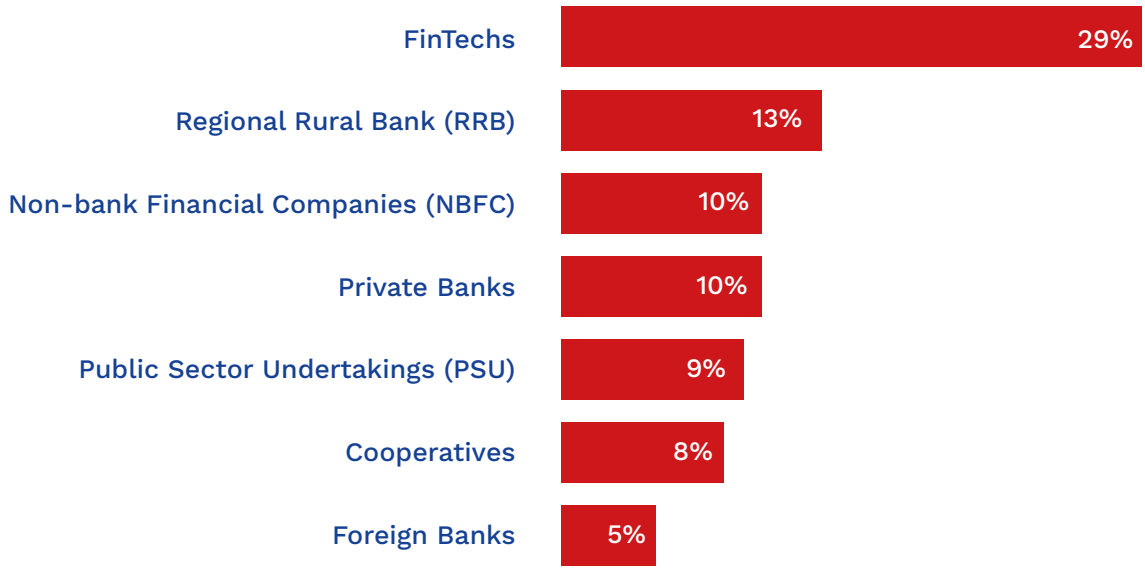
Complementing Competition with Trust (Quality of Service):

With increased competition and disparate payment service and system providers,[63] regulators should concurrently focus on trust. Standardisation helps build trust. To this end there is a need for policies and regulations to focus on quality of service or QoS. QoS must focus on aspects such as fraud protection, risk mitigation/limited liability, chargeback requests, network reliability, transaction completion rates, hardware security, privacy, grievance redressal, online dispute resolution (ODR), a standardised turnaround time for customer complaints and compensation,[64] etc. The RBI's High Level Committee on Deepening Digital Payments has also articulated the need for authorities to focus on QoS as the digital payments ecosystem scales.[65] In particular, ODR should be able to handle complaints in a timely manner with both automated and human facilities, after which there is an appeals mechanism to an overarching ombudsman setup.

Such efforts are essential because merchants and customers need assurance that digital payments processes are predictable and easy to navigate. For instance, in countries like Lagos and Colombia transactions with multiple stages cause friction and can lead to cancellations and loss of sales.[66] Similarly, splitting payments at food and beverage outlets can cause friction. The issue of chargeback can also erode trust customers, merchants and facilitators require clarity on how chargeback liability is assigned. Finally, another key aspect of QoS is service after sales, i.e. the repair and maintenance of PoS terminals.[67]

Role of Non-Banks in Digital Financial Opportunities:

Interest rates in the informal sector tend to be twice as high as in formal markets.[68] Technology can upend this paradigm to provide digital lending opportunities. This could unlock value of USD 80 to 100 billion dollars by 2023. This can be achieved with tailored/segmented offerings for differentiated customer bases. Policymakers should allow such technology providers the opportunity to leverage online platforms and supply chain ecosystems to facilitate customer acquisition, and can improve lending outcomes by solving for adoption, usage and loyalty.[6] This can be advanced by facilitating institutionalised data sharing (with consent and privacy safeguards) and other means of collaboration where MSME formalisation can be incentivised. It is important to highlight that fintech companies have the flexibility to adopt novel technologies and strike strategic partnerships, which allows them to formalise new people into financial markets. Their success in reaching "new-to-credtit" (NTC) borrowers as compared to other financial institutions has been observed in several studies as shown in the figure below.



PROPORTION OF NEW-TO-CREDIT BORROWERS BY LENDER TYPE

Source: Omidyar Network and Boston Consulting Group, 2018

The above illustration also indicates that non-banking financial companies (NBFCs) offer another promising avenue of credit for NTC customers. However, the ability of NBFCs to provide such credit is restricted by the RBI. Specifically, while banks are allowed to issue credit cards through automatic route, NBFCs cannot. RBI's regulatory framework, for NBFCs to issue credit cards, involves:[71]

- Taking prior approval from the RBI;
- Mandatory partnership with banks where the bank assumes credit risks and the NBFC brings its distribution and marketing reach;
- NBFC must have a minimum Net Owned Fund of INR 100 crore;
- The NBFC in question should have made profits in the last two years;
- The percentages of NPAs/net advances in the last balance sheet should not exceed three percent

Furthermore, NBFCs are prohibited from issuing charge cards, stored value cards and debit cards. Such conditions deny NBFCs the opportunity to issue regular streams of zero interest credit which could allow small businesses to address working capital needs. In addition, NBFCs are disallowed from partnering with non-banking technology companies for issuing credit cards.

The Payments Council of India (PCI) advocates that policymakers consider allowing NBFCs to issue (physical or digital) credit cards through an automatic route.[72] Should NBFCs be enabled, the MSME ecosystem as a whole can benefit since NTC borrowers will have formal credit histories. In addition, it could help create a market for businesses that install merchant acquiring payments infrastructure.[73]

KNOWLEDGE DISSEMINATION

Disseminating knowledge is an important mechanism to catalyse higher usage of digital financial services. Users must be educated about the benefits of digital payments and different types digital financial products like credit, insurance, mutual funds, securities, and so on. They must be empowered with the requisite know-how about their rights, and security/privacy do's and don'ts. Users must also be made aware of mechanisms and means of redressal, to engender trust in these digital systems.

" **MSMEs require training in how best to leverage digital payments for business growth and expansion, and how to avail of benefits in terms of forward and backward linkages. Other benefits they can be sensitised about include seamlessness/convenience, safety/ security, reduced transaction costs, ease in reconciliation, ability to access credit, and the value that accompanies digital formalisation. There should also be a greater impetus to sensitise MSMEs about bundled digital financial product offerings and leveraging channels they are already comfortable with.**

To achieve this the authorities must mobilise institutions at various levels. First, for better targeting of education/awareness campaigns, officials at the State Level Bankers' Committees (SLBC), District Level Coordination Committees (DLCC) and Block Level Coordination Committees (BLCC) should apprise stakeholders of specific adoption challenges at the local or regional level. Second, local touchpoints like Common Service Centres (CSCs), BC agents, post offices, ATMs, rural finance companies, Regional Rural Banks (RRBs), Self Help Groups (SHGs), etc. must be mobilised for education and awareness purposes.

As recommended by the RBI High Level Committee another promising avenue through which small merchant acceptance of digital payments can receive a boost are local weekly village markets ("Haat"). Such platforms can be used to expose MSMEs to receiving payments into their accounts through suitable payment acceptance infrastructure.[74]

For financial literacy the eventual aim is to get people who are new to digital financial services to understand and use simple products, and nudge them towards regular use and more complicated product/service offerings. However, to navigate this digital journey users require support.

Two avenues for intervention are the National Centre for Financial Education (NCFE) which can create standardised materials on digital financial literacy and disseminate them through local touchpoints, and the PMGDISHA programme [75] wherein standards for digital payments literacy require updating.

Such endeavours could also learn from other sectoral experiences. For instance, in broadcasting the entire industry had to get consumers/households to transition from using analogue to digital technologies. Two key aspects of this transition were that it was implemented in a phased manner, and there was widespread knowledge dissemination through private and public broadcaster airwaves. The relevant authorities should work in similar with the Ministry of Information and Broadcasting (MIB) and Prasar Bharati (PB) to disseminate information through television, radio and other means, on the virtues and risks of digital payments and related services.

RECOMMENDATIONS

Decentralising Financial Inclusion:
State Level Bankers' Committees (SLBC), District Level Coordination Committees (DLCC) and Block Level Coordination Committees (BLCC) can be leveraged to map the availability of ATMs, BC networks, acceptance infrastructure, Cash In Cash Out (CICO) networks, the reliability of telecom/internet networks and also regional/ rural performance against financial inclusion benchmarks. Some of these networks can be used to push financial literacy and deliver digital financial products. They could also coordinate with payments banks and other specialised micro-finance institutions to cover known gaps in banking facilities and credit availability. These local authorities could also map local customer behaviour and identify the reasons why cash is preferred, the location and operational status of PoS terminals, etc.

Evidence-Based Interventions:
To craft tailored policies and knowledge dissemination or messaging initiatives, there is a need to understand merchant and customer attitudes towards digital payments and cash. Therefore, there is a need to support surveys which seek to understand the retail payment habits of individuals in India. Such data should be shared with the SLBC, DLCC and BLCC so they can accordingly tailor customer awareness and education campaigns. Such behavioural data could also be shared with industry practitioners, so they can curate their service or product delivery accordingly.

Future Regulatory Outlook:
The major pillars for future regulation should include competition, innovation, convenience, affordability, trust and security. This means decision-makers should adopt a light touch and a risk-based approach, espousing the principles of ownership, platform and technological neutrality. Key elements include user choice, interoperability, safety and standardisation. The regulator should not favour one of type system provider over the other, but rather foster competition which allows industry participants to push each other and grow the ecosystem.

Test and Learn Approach (Regulatory Sandbox):
India could leverage mechanisms like regulatory sandbox environments for low-scale and time bound deployment of new digital payments solutions for MSMEs. Such frameworks have been deployed in other emergent markets like Rwanda and the Philippines. The latter has adopted a "test and learn" for new technologies, to ensure that regulatory decisions for new technology solutions are made only after fully understanding the business models and associated risks.

Institutional Reform:
Digital payments regulation should be participatory and reflect the views of all relevant stakeholders. In this regard the Government should appoint a new Payments Regulatory Board in line with the 2017 amendment of the Payment and Settlement Systems Act, 2007.[76] Authorities also should constitute a multi-stakeholder Payment System Advisory Council (PSAC) which would inform decision-makers of technological, incentive, market and consumer realities outside the banking perspective. The template for this could be a combination of Singapore's multi-stakeholder Payments Council,[77] and the Advisory Council proposed in the RBI's PSS in India Vision 2018 policy document.[78]

Limiting Single Point of Failure Risks:
The NPCI is India's sole retail payment system provider. Among other things, it operates interoperable platforms like the National Financial Switch (for ATM networks), the BBPS, UPI, the IMPS architecture and its proprietary BHIM App. It has also co-developed specialised

interoperable solutions like the National Common Mobility Card (NCMC) for public transportation and the Bharat QR Code.[79]

However, a single retail payment system provider market leads to heightened single point of failure market risks. Such a conclusion is supported by the findings of the seminal Watal Committee Report.[80] In addition to the Watal Committee, global authorities like the Bank for International Settlements (BIS)[81] and the European Central Bank (ECB)[82] have stated that authorities must swiftly address single point of failure risks, which can adversely implicate a country's digital payments systems.

" To overcome risks of market concentration, decision makers should streamline processes to set up a regulatory framework for authorising new payment system providers. This could help spur effective competition at the system/infrastructure level of India's retail payments ecosystem, in alignment with other jurisdictions like the United Kingdom.

Improving the Merchant Acquisition Ecosystem:

First, the regulator should allow both banks and non-banks to acquire merchants to accept digital payments. Additionally, as stated by the RBI High Level Committee on Deepening Digital Payments, "ideally, MDR and interchange fees should both be determined by the market". At the same time, authorities could start monitoring interchange rates to ensure that equitable value is distributed across the acceptance infrastructure value chain. Such a review of the interchange could include all relevant stakeholders and will allow the ecosystem to collectively determine whether there is a risk of market failure. India's regulations on MDR prices should be lifted, and if necessary the regulatory caps should be applied at the wholesale level, i.e. interchange fees. This will help unlock incentives for retail acquirers. Such a measure would be aligned with other network regulation in India (see telecom[83]), and payments regulations in jurisdictions like Europe and Australia.

It would also be aligned with the *RBI's 2019-2021 Policy Vision for Payment and Settlement Systems*, which highlighted the need for an ethos of minimal intervention in the pricing of chargers for digital payments.[84] It would aid business model flexibility and price competitiveness, leading to multiple service and product offerings and an overall increase in MSME welfare. In addition, like in telecom retail level tariffs by acquirers, i.e. MDR, could be subject to principles of tariff regulation such as competition, non-predation, transparency and consumer choice. This would provide a suitable safeguard against information asymmetries which stifle merchant adoption.

Interoperability in Low Cost Acceptance Infrastructure:

In developing countries, merchant adoption of digital payments has been catalysed by the recent push for low-cost Quick Response (QR) Codes. These systems require merchants to use only their phone and the corresponding QR code, without the need to install expensive hardware. Interventions should focus on simplifying merchant on-boarding and KYC related processes. They should focus also on MSMEs' adopting efficient interoperable solutions as much as possible, removing the requirement to install the QR Codes of different network providers. To encourage interoperability, there is a need to encourage QR Codes with API architecture for prospective solution developers. These lightweight QR systems should be generated through cost effective channels like USSD and/or mobile phones. An example of such a best practice model is Bharat QR Code. Interoperable models can help reduce adoption costs several fold.

Support Industry-Led Initiatives:

The Business Council of Australia has developed the Australian Supplier Payment Code,[85] a voluntary initiative to ensure large organisations pay small business suppliers on time. The initiative is meant to help Australian SMEs improve their cash flows and expansion opportunities. One of the provisions of this code is to help SMEs adopt technologies and practices that help with electronic fund transfers, accurate invoicing, etc.[86] Such an initiative could be replicated in India through major collective organisations like

the Confederation of All India Traders or the Federation of Indian Micro Small and Medium Enterprises.

Facilitating Data Sharing and Collaboration: As highlighted throughout this report, a critical pathway for the formalisation and financial inclusion of MSMEs are non-banking players. These industry players deploy innovative technological and customer-centric solutions which have the capacity to catalyse MSME digitisation/formalisation. However, a prerequisite for such a pathway is the democratisation of data and collaboration. In this regard, access to enterprise-level data is critical for digital finance models. To unlock this potential, Indian decision-makers must consider policy, regulatory and technological solutions which facilitate a seamless data sharing framework.

Technological answers can be found through solutions like open source, standardised API frameworks which allow for plug and play solution creation. Any such pathway must be consistent with India's forthcoming personal data protection law and the fundamental right to informational privacy.[87] Integrated data sharing of MSMEs across financial institutions and players can lead to more accurate credit risk models, which would allow for curated product development. For instance, the Japan Risk Data Bank (RDB) and Credit Risk Database (CRD) could be a template for India to consider. In similar vein France has the FIBEN database,[88] a comprehensive set of data on French SMEs which are utilised for loan reviews, portfolio management and rate setting—and leveraged for advanced credit
risk analysis.

Such data sharing is being formalised through regulatory interventions in jurisdictions like the EU and its Revised Payment Services Directive (PSD2). This allows innovative payment service providers to access data[89] like information on bank accounts (deposits and payments), e-commerce transactions, invoice data, customer surveys, etc. Such data can help with credit costs and loan review times, driving efficiencies in credit disbursal.

Another avenue for collaboration is in the credit card market. As highlighted earlier, there is under penetration of credit cards in India. This shortfall requires a greater impetus from regulators/policymakers to facilitate the entry of non-banking institutions like NBFCs. The Government should enable NBFCs through licenses to issue credit cards and other similar instruments—outside mandated partnerships with banks. Regulators and policymakers should explore if they can enable NBFCs to collaborate with fintechs to enable credit card based solutions to aid with working capital requirements of MSMEs.

Disincentives for Cash:
The authorities should evaluate tax disincentives and incentives to help increase the cost competitiveness of digital payments. To this end, there is merit in considering certain tax discounts or rebates for businesses which process a significant portion of their transactions or their low-value transactions through digital or electronic modes of payment. Such a strategy has worked well in countries like South Korea. Similarly, there is a need to assess if MSMEs should be allowed to charge customers cash handling fees, or legally be allowed to turn down cash payments for certain transactions.

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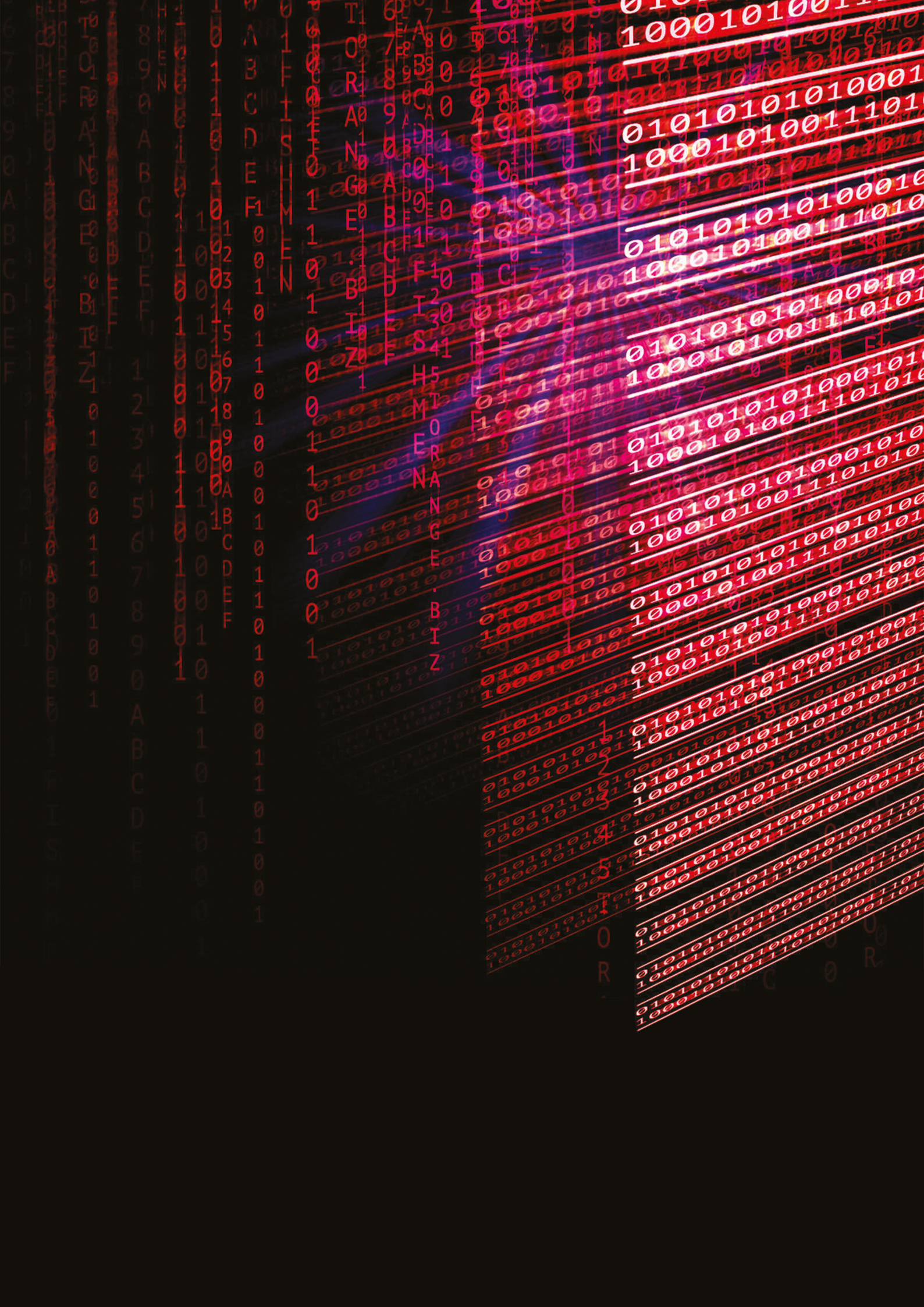
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