



Resilience and Resurrection

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Foreword by CII

The banking sector is the fulcrum of Indian economy which is one of the fastest growing in the world. Not only are the banks in India sufficiently capitalized, they are well regulated, too. Credit, market and liquidity risk studies suggest that the banks in India are also resilient enough to withstand external factors. Enhanced spending on infrastructure, speedy implementation of projects and continuation of reforms are expected to provide further ground for growth of the banking industry.

In recent times, the banking industry has seen the roll-out of some innovative models such as payments and small finance banks. India's Immediate Payment Service (IMPS) is the only system at level 5 in the Faster Payments Innovation Index (FPPI).

The promulgation of the Banking Regulation (Amendment) Act 2017 has altered the financial landscape. Efforts are also underway for the resolution of stress in the balance-sheets of banks and corporations in a time-bound and effective manner.

The Government's in-principle approval for the consolidation of PSBs through an 'Alternative Mechanism' and the massive recapitalisation plan for PSBs are aimed at meeting the fast-growing credit needs of the economy.

RBI has done well to limit India's exposure to the sub-prime crisis of 2008. Though the government is working hard to control inflations, the industry expects full implementation of Basel III (currently banks in India are following Basel II). This will require a considerable credit raise, especially for public sector banks.

However, the stress in the banking sector continues as gross non-performing advances (GNPA) ratio has risen. The profitability of scheduled commercial banks (SCBs) has fallen, partly reflecting increased provisioning. While this has added pressure to SCBs' regulatory capital ratios, the provisioning coverage ratio has increased. Credit growth of SCBs picked up during 2017-18 notwithstanding sluggish deposit growth.

A number of technological reforms have come about since then – Jan-Dhan, Aadhaar, BHIM, to name a few. Another major development is demonetisation which is fast creating conditions for large-scale adoption of digital payment systems. After the success of POS machines to the National Electronic Fund Transfer, the Unified Payment Interface, the country has also introduced payment banks.

It is predicted that by 2020, large number of Indians will embrace digital and biometric systems, which will in turn lead to a slew of new models – Cognitive Technology & Artificial Intelligence, Block Chain Technology, Robotics Process Automation, Fintech and of course Cyber Security. In technology-based banking, IT and electronic funds transfer system are being seen as the twin pillars of modern banking development.

With 'Resilience and Resurrection' being the theme of the CII-Deloitte Report, considerable time and energy has been devoted to identifying the key factors – both external and internal – impacting the banking and financial sector in India. Not only has the CII-Deloitte team prescribed a set of business models which would be suitable in the current scenario, it has also prescribed how the stakeholders should go about it in the changing market dynamics.

We hope that the readers would find this report useful.

Jagi Panda

Chairperson, CII Eastern Region

Message by Deloitte

India has been undergoing a number of changes and developments in the form of reforms in last few years. The reforms have led to higher growth rates, stable economy, and improvement in macroeconomic stability, global integration, etc. Further, there is an improvement in the business environment with the implementation of stable governance standards. However, the economic slowdown in the last few quarters has raised a number of questions on the country's growth potential to be answered by the leaders across domains. These include the following:

- Is the Indian growth story over?
- What are the new opportunities for India's growth potential?
- What sets of policies might be needed to revive growth?

One of the major priorities have been to fix the banking system in the country. The country should aim at developing a dynamic banking sector that encourages innovation and simultaneously is keeping a track of the inefficiencies. A robust and well-capitalized banking sector helps in capital formation and stabilizing economic activity. The system enables circulation of financial products between savers and borrowers. Thus, it plays an important role in channeling the savings into productive investments. The International Monetary Fund (IMF) opined that the Indian banking system appears resilient; however, it is subject to considerable vulnerabilities and capital requirement.

In order to recover from the slowdown in reform and build-up the macroeconomic sustainability, India has exhibited a renewed spirit for revival. The Government has made changes in the institutional and regulatory frameworks.

The government implemented reforms in a number of areas ranging from a new inflation targeting framework, reduction in the level of subsidies by energy subsidy reforms, containment of the level of fiscal deficit, re-instatement of the fiscal deficit frameworks, strengthening of the fiscal federalism, and improvement in the the quality of fiscal expenditure. The implementation of the Insolvency and Bankruptcy Code (IBC) has improved the legal landscape and is expected to fasten the recovery of bad loans in the country. Other focus areas include corporate governance reforms and improved financial supervision. The banking system should strengthen the lending standards for lending to sensitive sectors and bigger projects as well as make provisions for the expected losses. All these reforms will lead to a significant improvement in the macroeconomic stability and building a strong banking system.



Introduction

Redefining the financial services landscape

To ensure a strong economic growth, a nation needs a robust and a resilient financial services sector. It becomes a critical component of the governance. Currently, the sector is facing challenges such as an adverse global environment, increasing level of defaults and bad loans.

We focus on the theme of Resilience and Resurrection for the banking sector

- Resilience – If there is any impact (through external or internal factors); then how well is the industry (or the bank) ready to withstand the impact i.e. how **resilient** are the bank's operations
- Resurrection – Should there be an impact, then how strong is the bank to **resurrect or rebuild** itself and make a comeback.

One cannot eliminate risk 100% from the banking system; however, efforts can be made to minimize the risk by adopting several pre-emptive measures.

The key focus points of the paper include the following:

- Technology is a driver, not a disruptor anymore
- Future successful institutions and leaders will have to look at an integration of the physical and virtual world
- With the advent of technology, cyber threats and privacy become a real challenge that banks have to deal with
- Regulatory regime continues to dictate health of banks

This report discusses resilience and resurrection in the banking space through five sections, namely External Business Factors, Internal Operations, Technology, Cybersecurity & Privacy and People. Through these chapters, the report discusses a number of external and internal factors impacting the sector, identifies the disruptions to the current business model and how prepared institutions are to face the changing market dynamics.





Business: External business ecosystem

Digital Disruption in the Banking Landscape

The Indian banking industry is seen witnessing significant disruption with financial technology companies ("FinTech") driving innovative business models and use cases and capturing market share from the existing established players. While the banks have traditionally relied on their branch infrastructure to acquire and service customers, emerging players are leveraging digital channels to directly reach out to their customers. This has enabled them to keep the costs lower and achieve scale; benefits of which are passed on to the customers. Not only this, digital channels have been offering a

significantly better onboarding and service experience for customers.

Further, banks have traditionally structured their retail products keeping standardisation as the focus with limited emphasis on customisation based on the different customer segments/unique needs. While this one size fits all approach makes implementation and operationalisation of the products easier for the banks, it does not provide the customisation and personalisation that the new generation of customers now desire. In contrast, FinTech are seen tailoring their products to target the unique needs of specific target customer segments (for instance, FinTech are

targeting specific segments within the overall SME space, and specific retail customer segments marked by differences in availability of documentation). This customisation/ customer led approach has been seen driving a relatively higher adoption and usage of products designed by FinTech.

Banks under pressure to rethink credit

Among the various areas that FinTech are focusing on, lending/ credit has been noteworthy. It has seen significant disruption by FinTech. Given credit is the primary driver of revenue for banks, such disruption by FinTech is likely to directly affect the business of the banks.



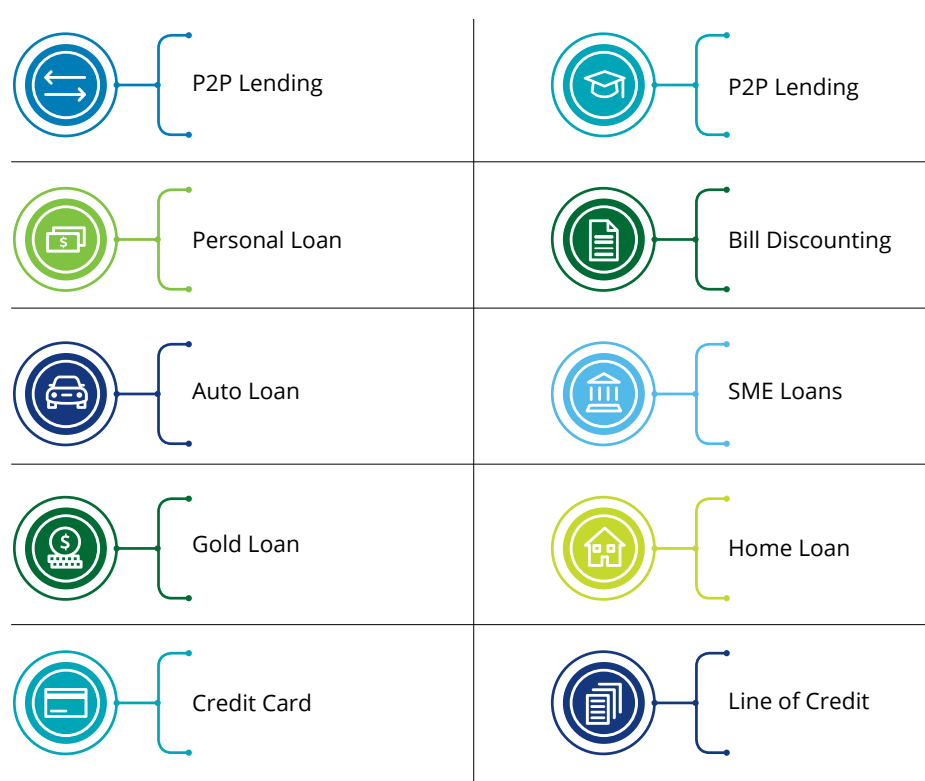
Banks have typically relied on a formal documentation based approach involving significant manual effort (including document collection, Original Seen and Verified (OSV) processes, credit appraisal etc.) which has traditionally taken a week or longer. Additionally if the customer doesn't have these documents or has insufficient credit history ("thin-file customer"), this process typically takes even longer period or in some cases even leads to a rejection of the application.

FinTech have focused on addressing these two challenges traditionally faced by banks i.e.,

- a) longer turnarounds
- b) credit for thin-file customers and carved out a niche for themselves. FinTech have created efficient service delivery platforms leveraging the following key technology capabilities:

- 1) **Drive automation** for processing documents to reduce turn-around time. For example a leading NBFC leverages Digilocker¹ to collect authorized documents digitally (e.g. PAN Card, Aadhaar Card, Driving License, Income Tax Return etc.), thus, reducing time for OSV and authenticity checks. Additionally, data being collected from Digilocker is readable by the system which enables automated data population and enrichment. Such technology initiatives helps digitize and reduce the credit disbursement cycle for FinTech.

Figure: Illustrative list of FinTech across lending segments



- 2) Profiling customers through **alternate data** to develop credit proxies e.g. Buy Now Pay Later FinTech like Simpl, ePayLater, LazyPay etc. collect extensive data about the customer such as social media data, contact details, SMS, mobile information, transaction data² etc. to evaluate customer's credit worthiness and extend short term credit at select merchant locations under the Buy Now Pay

Later construct; allowing customers to avail credit who earlier might have been denied a credit card or credit products based on limited formal documentation available for them.

Riding on these innovations, FinTech are seen to have carved out a business niche for themselves with the likes of Capital Float being able to build a loan book of over Rs. 1,200 crore³ and disbursing loans at a monthly run-rate of Rs. 250

¹. <https://blog.digilocker.gov.in/indiabulls-showcases-how-nbfcs-can-integrate-with-digilocker-for-digitised-document-verification/>

². <https://play.google.com/store/apps/details?id=com.simpl.android>; <https://play.google.com/store/apps/details?id=in.epaylater.android.consumer>

³. <https://yourstory.com/2018/04/capital-float-closes-series-c-round-secures-22-m-equity-funding-amazon-inc/>

crore a month. Similarly, Lendingkart has been able to disburse loans to over 13,000 SMEs⁴ and aims to have a loan book of over Rs. 2,500 crore by the end of FY 18-19. While growing loan books has been one of the core business objectives for the FinTech, some of the players are also focusing on identifying markers for potential delinquents (e.g. Algo 360 tracks customer's mobile phone app, email behaviour to find out if the customer is reaching out to multiple credit providers for new loans). In order to do so, FinTech are either developing internal capabilities or are tying up with other FinTech which enables them to understand loanee's credit behaviour, for e.g. shopping for new loans across lending platforms/ FinTech, missed bill payments, browsing history etc. to generate data proxies which can proactively predict or minimize cases of delinquencies (e.g. Capital Float is using the customer credit profiling capabilities of Perfios to develop customer credit worthiness proxies which goes as an input to the credit decisioning by Capital Float⁵).

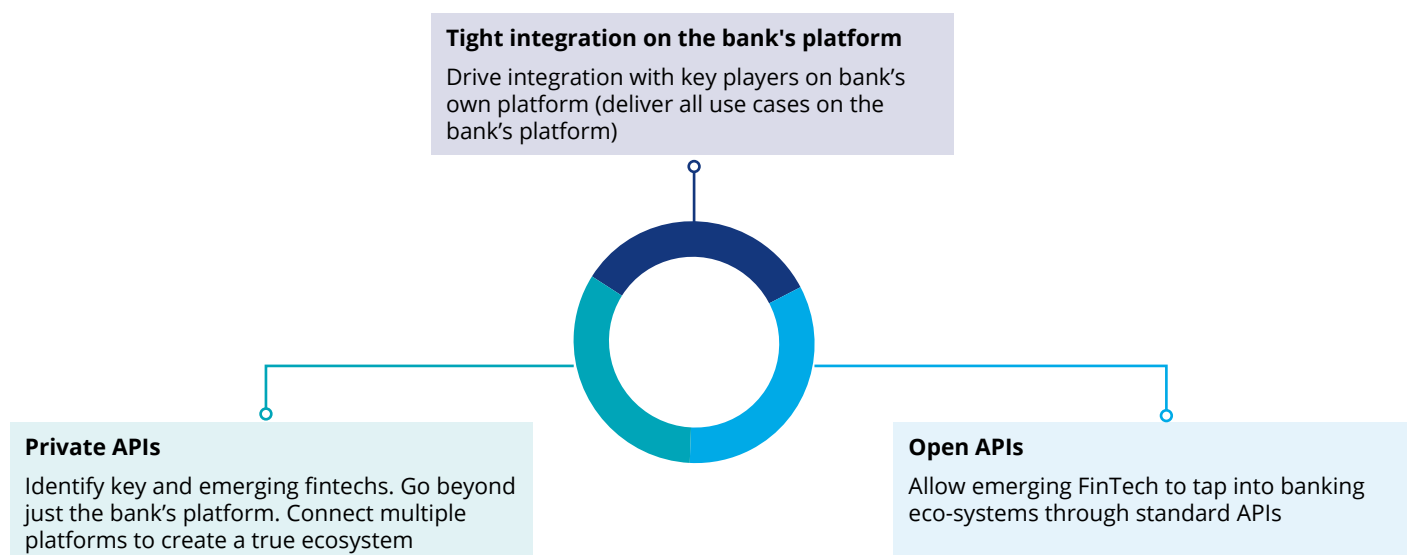
All these technology led initiatives have helped FinTech differentiate themselves as preferred credit provider for their target customer base. This shifting preference towards FinTechs to avail credit facilities poses a risk for banks of losing out on current customer base as well as future business from these customers.

Partnership – a useful response to disruption

Banks across the public and private sector, small and large scale, have or are in the process of embracing these digital technologies and are enhancing their value proposition to provide both asset and liability products on their banking platform.



Figure: Engagement Model with FinTech



⁴. <https://yourstory.com/2018/02/lendingkart-secures-87m-but-theres-more/>

⁵. <https://economictimes.indiatimes.com/small-biz/money/fintech-company-perfios-raises-about-rs-40-crore-from-bessemer/articleshow/58001193.cms>

To provide these offerings, banks have started engaging with FinTech through the partnership route which provides banks the flexibility of developing capabilities quickly, driving innovations and at the same time trying to minimize their business risk.

Figure: Drivers for bank FinTech partnerships



While each engagement model has its own pros and cons, the private API/ FinTech incubation programs have seen active interest by several banks as it enables banks to identify FinTech which align to the bank's strategy and allow them to work with the FinTech to develop bank specific use-cases. For example, Bank of Baroda has constituted a FinTech alliance within the bank and already has more than 25 such FinTech partnerships⁶, and based on such alliances is targeting a revenue of Rs. 4,000 crore⁷; Similarly other leading public and private sector banks such as SBI⁸, HDFC Bank⁹, ICICI Bank¹⁰, Kotak Mahindra¹¹, Axis Bank¹² etc. have constituted formal Hackathon/ Appathon/ FinTech incubation centers with the objective of finding FinTech having a compelling/disruptive value-proposition which can be aligned with

the bank's objectives and thus, providing a win-win proposition for each other.

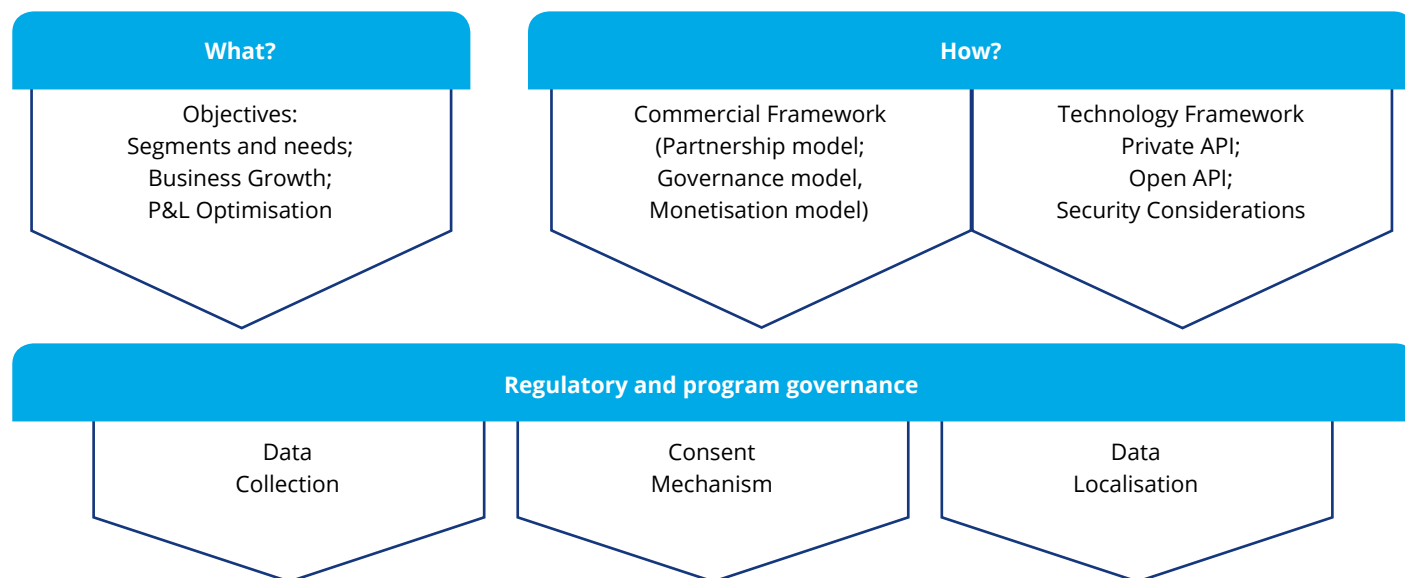
Similarly, in order to grow their share in the credit market, banks have started partnering with FinTech which allows them to evaluate customer credit worthiness based on alternate data. Some of the leading FinTech focusing on alternate data based credit profiling such as Perfios, CreditVidya, Lenddo etc. have seen interests from the banks such as SBI, HDFC Bank, RBL Bank, Kotak Mahindra; where in banks are using the insights generated by these platform to evaluate the customer creditworthiness¹³.

While the intent of these partnerships with FinTech is to bring banks back into the reckoning by customers, various regulatory guidelines (such as sharing

of Aadhaar details, data sharing consents) and Indian regulations (such as Data Sharing and Data Localisation) needs to be taken into consideration when such FinTech programs are set-up and leveraged to improve bank's service delivery and product proposition.

To drive compliance with the regulatory requirements, these FinTech initiatives must be backed by bank's management and the objectives for the same must be clearly defined within the organisation so as to remove any ambiguity among the partnering organisation(s). This would help banks align and drive their business objectives while ensuring compliance to the guidelines. Some of the key parameters that any such bank initiative needs to consider are mentioned in engagements in appended Figure.

Figure: Consideration for FinTech engagements



⁶. <https://www.bankofbaroda.com/the-fintech-alliance.htm>

⁷. <https://economictimes.indiatimes.com/markets/stocks/news/bob-eyes-rs-4000-crore-gains-from-fintech-by-fy20/articleshow/64378442.cms>

⁸. <https://www.livemint.com/Technology/eY73pPWdQirAfjmngcpqfO/SBI-launches-national-hackathon-next-month.html>

⁹. https://www.hdfcbank.com/htdocs/aboutus/News_Room/pdf/HDFC_Bank_kicks_off_Digital_Innovation_Summit_2017.pdf

¹⁰. <https://www.icicibank.com/aboutus/article.page?identifier=news-icici-bank-announces-winners-of-icici-appathon-its-mobile-app-development-20161904163528712>

¹¹. <https://www.kotak.com/content/dam/Kotak/about-us/media-press-releases/2018/kotak-mahindra-bank-and-nasscom-launch-a-new-collaborative-platform-for-start-ups.pdf>

¹². <https://www.axisbank.com/docs/default-source/press-releases/axis-bank-s-thought-factory-aids-its-start-ups-to-expand-opens-up-avenues-with-investors-and-companies.pdf?sfvrsn=4>

¹³. Clients: <https://creditvidya.com/>; <https://www.perfios.com>



Business: Internal operations

With increased cyber frauds occurring across various banks and financial institutions across the globe, management considers cybersecurity as a top focus. Regulators have increased their focus and ring-fenced their guidelines to take into account the increasing cyber frauds.

Financial institutions have set up internal control environments in their existing system architecture and resource framework to prevent breaches, which may lead to cyber crimes. Indicative controls adopted to achieve the same are as follows:

- Governance mechanism with clearly identified and board approved cyber strategy. Cyber security preparedness indicators, cyber crisis management plan, cyber resilience objectives are incorporated. An independent cyber security team is assigned to cater to cybersecurity.
- Adequate maker, checker and authoriser roles basis the priority and transaction amounts. The transactions matrix defines the amounts that can be approved along with product wise bifurcation.
- Multi-factor authentication access to the systems, which requires users to input login credentials and further authenticate the transaction through biometrics or OTP.
- Limits in the system on parameters such as withdrawal limits at a customer level and caps basis the location/region/product.
- Adequate system interface and integration between the systems and sub-systems utilised by the bank and financial institutes.

- Periodic reconciliations to identify any mismatches in accounting entries and any exceptions/overrides that may be passed in the system

Various types of cyber frauds

The frequent types of cyber frauds committed across banks and financial institutions are detailed below:

- **Skimming and cloning**
Fraudulent transactions were done from the bank accounts of 13 customers at a public sector bank. Skimming and cloning of the customer debit cards with a total loss of Rs. 2.23 lakh was identified. A skimmer was inserted in the ATM machine of the bank.
- **Swim swap**
A customer was duped of Rs. 6 lakh through a swim-swap fraud, where the fraudster installed a malware which shut the phone until the fraud was conducted. The amount was debited when the customer authenticated the usage of a wallet.
- **Bypass OTP**
In a recent case, a targeted customer, provided his card details on a phishing link; however, the OTP was not received by him and Rs. 50,000 was debited from this account. In such instances, the fraudster uses codes to bypass the OTP.
- **ATM Jackpotting**
The scheme requires instalment of a breaching software to alter the amount of cash withdrawals; the software breaches the internal controls of the bank, to facilitate huge cash withdrawals through fake cards at ATMs.

Recent case studies in financial services across the globe, with breaches in cyber security

In line with the types of cyber frauds mentioned above, highlighted below are specific cases wherein cyber crimes have been conducted due to breaches in the internal controls of the bank or financial institute in India and globally.

• Business Case 1:

A Pune-based bank was a victim of a malware attack, where cyber hackers, hacked into the banks' servers and transferred Rs. 94 crore to accounts in India and Hong Kong. The attack was through the cloning of Rupay and Visa debit



cards for over 15,000 transactions. NPCI stated that their systems were secure, and the breach occurred due to a malware in the banks' technology environment. The money was taken from the banks' operative accounts.

The ATM cashout was through theft of funds from ATMs, by accessing bank customer card information and misuse of network access. Prior to the ATM cashout, the hackers removed controls at the financial institution such as limit on the maximum withdrawal amount and any limit on the number of daily customer ATM transactions.

Analysis of the case: The internal controls on the limit threshold was breached, allowing unlimited withdrawals from ATMs

- **Business Case 2**

Cyber fraud duped customers through messages sent, supposedly from a government agency. As the first deadline for filing of returns was nearing, customers received text messages from the fabricated Income Tax department. The message mentioned that the customer's "refund" had been approved. The message also included a random bank account number, with a note, stating that should the account

number be incorrect, the customers should go to the link mentioned in the message and update their correct account numbers.

As the account number mentioned in the message was incorrect, customers visited the link (which looked similar to the government agency site), and updated their account details. The same details were used to convince the targeted customers to pay fines, due to irregularities in their returns.

Analysis: Absence of internal controls and real time research to identify fraudulent internet domain registrations.



• Business Case 3:

Cyber criminals transferred \$2 million (through unauthorised remittances) from the bank to lenders overseas via the SWIFT financial platform, to accounts in Dubai, Turkey and China.

Analysis: Absence of transaction matrices and adequate system integrations.

• Business Case 4:

A leading British bank, was forced to halt its online transaction business, as money was stolen from current accounts of 20,000 customers.

Analysis: The breach occurred due to absence of adequate controls in the bank's IT infrastructure.

• Business Case 5:

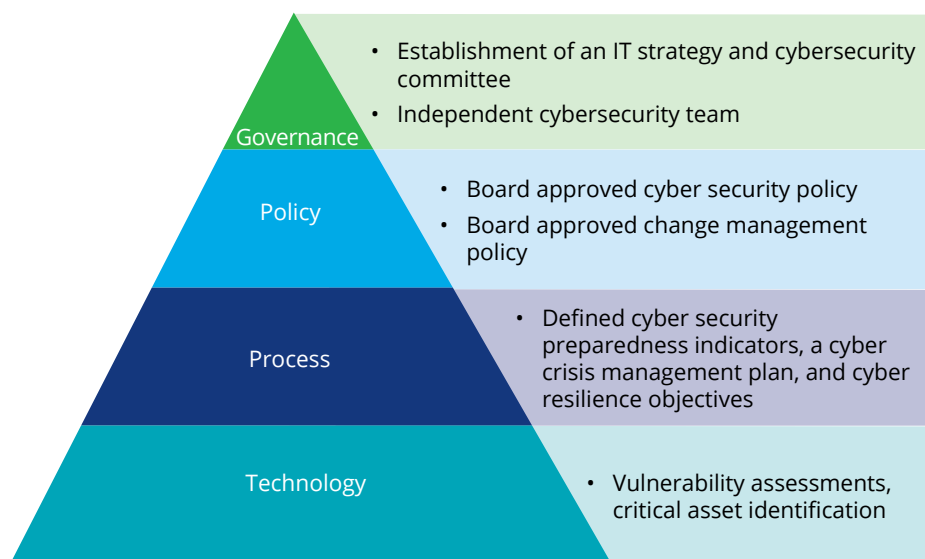
A foreign bank was the victim of a cyber fraud of \$101 million, in a case where the money was transferred from the Federal Reserve Bank of a country to a fictitious account. The incident was tagged as a money laundering activity. The incident occurred due to compromised access to the SWIFT system of the bank.

Analysis: Unauthorised access to the bank's systems.

Internal controls adopted by financial services institutions to mitigate cyber frauds

With the increasing rate of cyber crimes and fraudsters devising new ways to find loopholes in the existing technology, there is enhanced focus on internal controls and tools to mitigate this risk, by taking into account the governance framework, policies, processes and technologies. This is highlighted in the diagram below.

- Performance of IT risk assessments: Strengthening the performance and frequency of the IT risk assessments.
 - Implementation of a cybersecurity assessment tool such as the Graham Leach Bliley Act (GLBA)/



FFIEC Cybersecurity Assessment Tool.

- Implementation of a vulnerability scanner (e.g.: Nessus, Qualys). The scanners perform activities such as, auditing the configurations of the third party cloud services, performing remote and local checks, discovery of live hosts and open ports, reviewing the configuration files of the network devices, etc.
 - Penetration testing of a breach due to cyber risk, to evaluate the incident detection and response.
 - Performance of a general controls review.
- Conducting security analytics to detect cyber security breaches such as unusual changes in the ATM switches, predictive attacks due to compromised ATM switches, cash withdrawal limit checks, etc.
- Banks are subscribing to cyber insurance policies to safeguard themselves for cases of a cyber breach. The cyber liability insurance cover takes into account ransomware attacks and minimising losses due to cyber crimes.
- Real time dashboards to identify instances where the banks' websites/ payment pages have been replicated.

Banks invest in softwares to detect fake websites.

- Banks have shifted from the conventional penetration and stress testing exercises, to cyberwar games. The game is organised around a business scenario, structured to simulate a real attack. Participants include employees from information security, application development, operations, and customer service departments. The participants are provided with incomplete data and is exercised in the UAT environment.
- Machine learning and artificial intelligence to analyse the network - the machine learning correlates the activities performed through the network to identify patterns. (e.g.: Draktrace, Splunk)

Case studies of practices adopted by key entities to mitigate cyber crime

Based on the internal controls adopted, highlighted below are case studies of the practices adopted by banks and financial institutions globally.

- SWIFT has implemented a real-time payment controls service, which allows the customer to screen their payment messages, basis selective parameters. This enables customers to detect unusual flow of data/ information.

- A payment security specialist has formulated an 8-point action plan to mitigate cyber crimes at financial institutions. The key feature of the plan includes a multi-factor authentication for users to log into the switch application and conduct a credential based vulnerability assessment scan.
- Hong Kong Monetary Authority (HKMA) has set up a cybersecurity fortification initiative with the banking industry, where a Cyber Resilience Assessment Framework, a cyber intelligence sharing platform and a professional development program is set up¹⁴.
- An international bank has launched a “digital safety campaign”, which

safeguards the customer by allowing the customer to set daily ATM withdrawals limit and allows instant disabling of remote purchases on their cards.

- A foreign bank has implemented a biometric authentication system at ATMs. Customers do not require a card or a pin to withdraw from the ATM; the ATM solely functions on vein and fingerprint hybrid authentication.
- The state bank in a foreign country plans to restrict the hours of withdrawal from an ATM, as a majority of skimming instances are performed at night.
- A co-operative bank in India allows its customers to set debit card

limits at a minimum of Rs. 0/Rs. 5. Customers can activate/deactivate the limit by sending an SMS. The limits are updated on a real time basis.

Conclusion

Banks and financial institutions need to evaluate their cybersecurity framework periodically to be abreast with the paradigm shift from conventional breaches to technologically advanced breaches. As the quantum of cyber breaches increases, the focus needs to be on strengthening the internal controls. Analytics play a key role to identify recurrence of cyber frauds in a specific location/geography or to identify new breaches.



¹⁴. <https://www.hkma.gov.hk/eng/key-information/press-releases/2016/20160518-5.shtml>

Technology

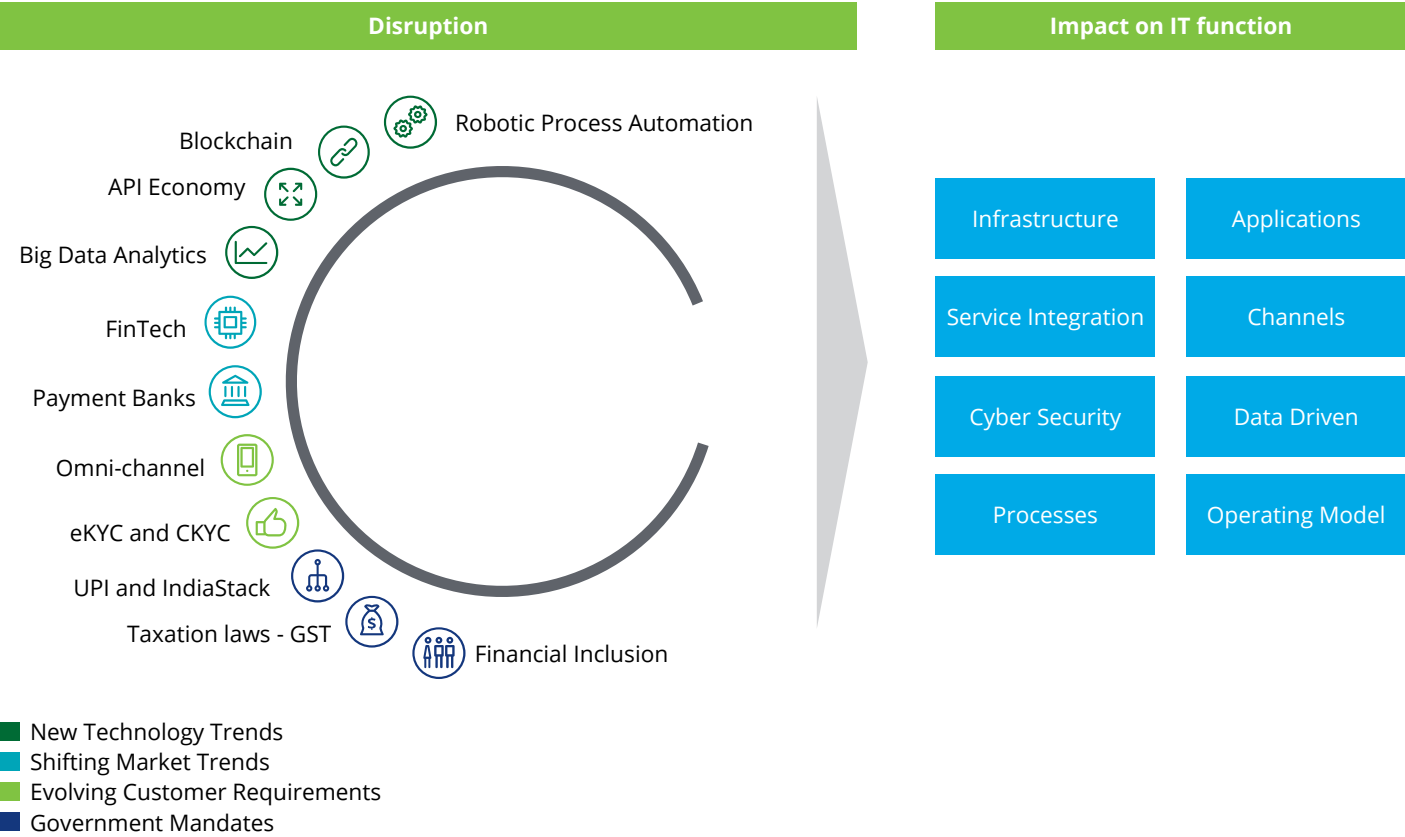
Moving from technology resilience to digital resurrection

The banking landscape both in India and globally has changed significantly over the last decade. Key forces driving this change include increased customer expectations, the emergence of new disruptive technologies, new-age technology competitors and evolving regulatory requirements. Banks, especially the incumbents, are now being forced to re-imagine their strategy and associated investments around technology. Some of the primary elements of this renewed focus are: agile and resilient infrastructure,

seamless service integration, application portfolio rationalisation, omni-channel enablement, cyber-security, data-driven decision making, process automation, and optimisation. However, what most banks fail to realise is that most of these elements cannot be adopted in a silo, and instead, they have to be deliberately ingrained deeply into the core enterprise architectural fabric which in turn must be driven by a lean, agile and dynamic operating model. Traditional banks around the world are at a crossroads today. Their technology

landscape which was built around the concept of pushing core banking services through physical channels is under pressure. In majority of the cases, new age channels and offerings have been layered onto an aging core infrastructure which has severely limited their ability to integrate seamlessly and respond to the changing business demands. This already stressed technology is seen to be an easy target of cyber-attacks – which have become more sophisticated over the years – thus, resulting in frequent system outages and business disruption.

Figure: Emerging disruptions impacting emerging technology landscape



Source: Deloitte Analysis, 2018

Drivers disrupting the banking industry landscape

Digital Technologies – From disruptor to driver

While the traditional banks are still playing the catching game of trying to 'look digital', the new generation digital banks and FinTech are turning the tables upside down by disrupting the entire banking technology landscape. The new digital forces namely machine learning and artificial intelligence (AI), big data analytics, robotic process automation (RPA), open banking, blockchain, chatbots and internet of things (IoT), etc. have resulted in a storm to position technology from being a business enabler to a business driver.

Indian banks have responded positively in adopting digital technologies, for example, a leading private bank in India has launched IRA (intelligent robotic assistant) to provide smooth customer experience¹⁵. Banks are also exposing their APIs to aggregate new services. For example, a private Indian Bank is digitising B2B supply chain by launching API banking services¹⁶.

Banking Ecosystem – From competition to partnership

The growth of digital banks and introduction of new age technology competitors like FinTech are disrupting the banking industry with their agility, responsiveness and personalised offerings.

Competition is not limited to banking players only

Telecom providers like Airtel and Jio and retail players like Amazon have entered the competition in Indian banking sector. In addition, India Post Payment Bank has potentially opened up a new unbanked section of rural Indian market.

With RBI providing new licenses for payment banks in 2015¹⁷, not only FinTech but companies from different sectors are entering this space. Banks are devising the strategy to leverage the FinTech ecosystem and are partnering with them to become the aggregator of product and services. For example, a large private sector Indian bank has partnered with various FinTech across banking value chain to emerge as the aggregator of product and services¹⁸. Governments across the world are pushing the open API economy to bring banks, FinTech and other interested parties together to respond to consumer and business expectations. For example, the Monetary Authority of Singapore (MAS) published "Finance-As-A-Service API PlayBook" to develop and adopt open Application Programming Interface (API) based system architecture¹⁹.

Evolving Customer – From needs to wants

Customers' expectations and demands are shifting towards smarter, more transparent and seamless omni-channel experience. As per a joint

study conducted by Morgan Stanley and Deloitte Customer Survey²⁰, 64% of Indians will be millennials by 2021 and will spend \$330 billion annually, these millennials are increasingly demanding "Amazon/Facebook" like experience with round the clock availability and support from the banks. Millennials and now Generation Z (people born from the mid-1990s to the early 2000s) not only demand simplified product and services from their bank but they expect unique and personalised journeys throughout their interactions with the bank.

The implications are clear – multiple banks are leveraging technologies to re-imagine product and services along with the delivery channel. For example, a large public sector India bank has launched SIA-AI powered Chatbot and lifestyle and banking app specially catering to the needs of the millennials²¹.

Regulators – From changing the rule of the game to changing the game itself

Globally, regulators are providing special push and incentives to digitise banking/payments related processes and are even re-shaping long established processes and changing the landscape. In India, recent initiatives like BHIM platform (UPI, USSD, Aadhaar Pay), Immediate Payment Service (IMPS), Aadhaar Vault and Bharat Bill Payment System (BBPS) etc. have completely changed the Indian payment landscape.

¹⁵. <https://cio.economicstimes.indiatimes.com/news/enterprise-services-and-applications/hdfc-bank-launches-ira-2-0-the-advance-version-of-its-interactive-humanoid/63936738>

¹⁶. <https://www.livemint.com/Companies/BcqXQgey9fieFps9xVZxrK/How-Bajaj-Electricals-uses-blockchain-to-pay-suppliers.html>

¹⁷. https://www.rbi.org.in/SCRIPTS/BS_PressReleaseDisplay.aspx?prid=35010

¹⁸. https://www.business-standard.com/article/finance/icici-bank-s-digital-push-sets-up-innovation-lab-enters-fintech-tie-ups-118052500580_1.html

¹⁹. <https://abs.org.sg/industry-guidelines/fintech>

²⁰. Morgan Stanley, Statista and Deloitte customer survey, 2017

²¹. <https://www.livemint.com/Industry/68ipadKILQwxGUKTxXd3pL/SBI-launches-chatbot-to-help-customers-in-banking-services.html>

The next revolutionary idea which is being envisioned is 'India Stack' – which are a set of open APIs and currently include services like Aadhaar for eKYC, eLocker for storing and sharing documents electronically, eSign for paperless agreements and UPI for digital payments. While the customer is likely to enjoy the benefits of these services and FinTech are expected to build new product and services leveraging the 'India Stack', banks will need to devise their own strategy to respond to these regulatory initiatives. Apart from regulators, governments are also promoting and providing the playground for interest parties to embark on the digital revolution. For example, Maharashtra government has announced the opening up of a 'sandbox' where start-ups can register and open their APIs for the consumption of financial institutions²².

Technology as a driver: Where to play and how to play

At a time when the traditional banking technology was already under strain

from the four disruptive forces mentioned in the above section, the situation has been further strained by recent IT outages and cyber-attacks which have resulted in frequent system breakdowns and disruption of business. For example, a recent case of cyber-attack on an Indian co-operative Bank has resulted in significant financial losses²³. Robustness and resilience of IT systems have taken a front stage and each technology failure is further amplified due to social media and 24X7 media. Banks have paid a heavy price in terms of penalties imposed upon them by regulators and not to mention the loss of reputation. To stay afloat, banks will need to

How to remain relevant?

To remain relevant in changing times, the banks need to resurrect themselves and adopt technologies to drive the digital transformation, new business models, and agile processes and simplify management of IT.

factor in the impact of these disruptive forces on their overall technology landscape and core architectural fabric and devise a new strategy of "Where to Play" and "How to Play" leveraging digital technologies.

Where to play: Choosing the right battleground to win

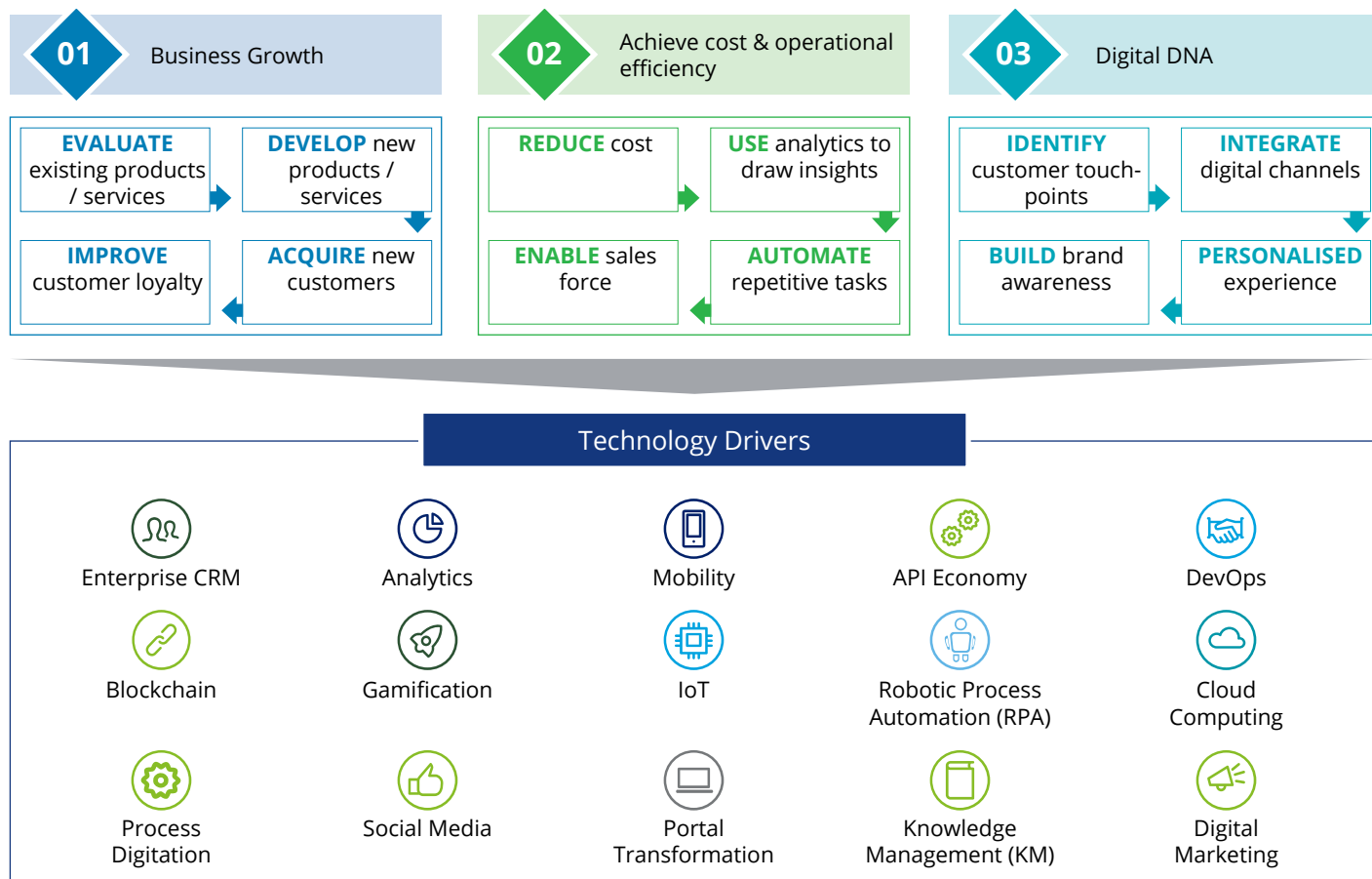
Digital technologies have become the critical driver to deliver business objectives and is impacting the entire banking value chain, applications landscape, business processes and operating model. However, technology transformation cannot be achieved overnight; and hence, it is imperative to define the transformation vision, strategy and roadmap to start with. In this regard, banks should consider performing a comprehensive cost-benefit analysis (considering both tangible and intangible benefits) while defining the target landscape, considering the availability of resources and budget to execute necessary steps.



²². <https://www.livemint.com/Industry/68ipadKiLQwxGUKTxXd3pL/SBI-launches-chatbot-to-help-customers-in-banking-services.html>

²³. <https://economictimes.indiatimes.com/industry/banking/finance/banking/cosmos-banks-server-hacked-rs-94-crore-siphoned-off-in-2-days/articleshow/65399477.cms>

Figure: Technology Enablers



Source: Deloitte Analysis

**Business Growth**

FinTech have made a deep dent in the loyal customer base of traditional banks. Globally, banks already seem to have conceded the payment space to FinTech like Alipay, Ripple and PayPal etc. and, now with the foray of tech titans like Amazon, Google, and Facebook etc. in the payment services space the boundary between the banks and FinTech is fast diminishing in India as well. To survive in this fiercely competitive landscape, today's banks will need to consider moving from being a provider to an aggregator of product and services.

Cost and operational efficiency

Banks with siloed, tightly-bound and complex application landscape are unlikely to be able to survive the onslaught of digitally enabled competitors. Hence, moving from the traditional architecture to a platform and or service oriented architecture, digitisation of the front, middle and back office processes and adopting agile and consumption based infrastructure are seen to be the key to reduce cost while improving operational efficiencies in new digital world. Basic banking services like account opening, loan processing, remittances etc. may need to be repurposed and integrated into customer journeys to provide ease of use and quick turnaround time.

Digital DNA

Quick fix and piecemeal solution to 'look digital' has created more problems for the banks than solving it. An agile and open enterprise architecture needs to be at the core of a bank's digital business strategy. New business models would need to be centred on technologies like machine learning, AI, RPA, open API, blockchain, data-driven analytics, chatbots, user experience etc.
















Digital technology drivers are impacting entire banking landscape including architecture, business processes, and operating model.

The technology components which were untouched till now are getting transformed in the wave of new digital technologies. Leading banks in India and across the world are adopting different strategies across the landscape to leverage digital technologies and move higher in digital maturity.

How to play: Approach to build a technology driven bank

Banks need to consider having agile back end and front end capabilities to be able to be customer centric in their approach. However, the current technology landscape in most traditional banks was not conceptualised and designed to operate with today's scenarios in mind thus becoming a barrier for customer

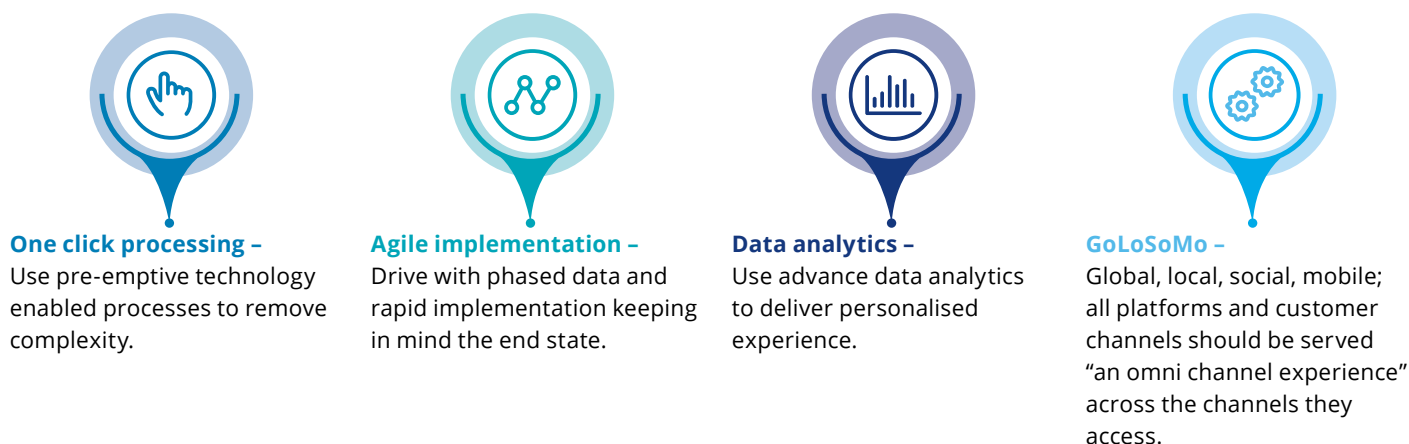
Figure: Technology Driver impacting – Implications on Architecture, Process, Operating Model

Technology Components	Digital Drivers	Impact on Technology Components	Examples
Infrastructure	 Cloud Computing	<ul style="list-style-type: none"> As-a-Service consumption models leveraging cloud. Right mix of deployment models like public, private and hybrid and the services are lowering 	<div>ICICI Bank</div> <p>ICICI Bank of India is using hybrid cloud to streamline business processes and build an ecosystem of FinTech</p>
Applications	 Mobility  Gamification  Portal Transformation	<ul style="list-style-type: none"> Hotspots for new application acquisition are CRM and Digital Marketing solutions CRM is the driver for digitization of cumbersome on boarding processes, standardize customer servicing 	<div>UBank</div> <p>UBank's online home loan application process disrupted retail banking by delivering a simpler, better and smarter customer experience</p>
Service Integration	 API Economy  DevOps	<ul style="list-style-type: none"> The current wave of digital technologies are focused on secure and seamless integration of external agencies to banks core systems 'API Economy' 	<div>BBVA</div> <p>Partnered with FinTech companies to leverage ideas and expertise for digital products like payments, SME loans, etc.</p>
Channels	 IoT  Social Media  Enterprise CRM	<ul style="list-style-type: none"> Orchestrate customer journey across digital channels providing hyper localised and contextual customer experience leveraging AI, IoT, machine learning and robotics 	<div>KOTAK Mahindra Bank</div> <p>Offer Hashtag banking, which allows user to access account balance, transaction history, mobile/DTH Recharge, etc. through a simple tweet</p>
Cyber Security	 Blockchain	<ul style="list-style-type: none"> Bank needs to take a broader approach to cybersecurity encompassing people, process and technology. 	<div>SBI</div> <p>SBI launched a national hackathon, "Code For Bank", for developers, startups and students to come up with innovative ideas</p>
Data Driven	 Analytics  IoT	<ul style="list-style-type: none"> The digital data trail generated by social, wearables, IOT, demographic and geographic data attributes are allowing banks to create micro customer segments and provide hyper personalized customer journeys. 	<div>DBS</div> <p>Analyzes customer profiles and market reports to provide offerings to wealth management clients</p>
Processes	 RPA  Process Digitation	<ul style="list-style-type: none"> RPA and cognitive automation eliminates the repetitive tasks and allows a process to be executed by digital labor, instead of extensive manual labor. 	<div>Citi</div> <p>Built three separate internal Blockchains within labs to test the technology, focusing primarily on international payments</p>
Operating Model	 KM	<ul style="list-style-type: none"> The new operating model for the digital bank needs to implement and orchestrate the digital solutions in tandem with each other around customer journeys and perfectly balances the external forces of regulators and competitors 	<div>Tangerine</div> <p>When Canada's largest online bank rebranded from ING Direct to Tangerine, its introduction strategy was as innovative as it was successful</p>

and product innovation. Banks need to upgrade themselves to a service-based architecture, designed to ensure quality, improve business agility and deliver the product, services, processes and functionalities that are useful for both the customer and the bank.

Key principles defining service architecture include:

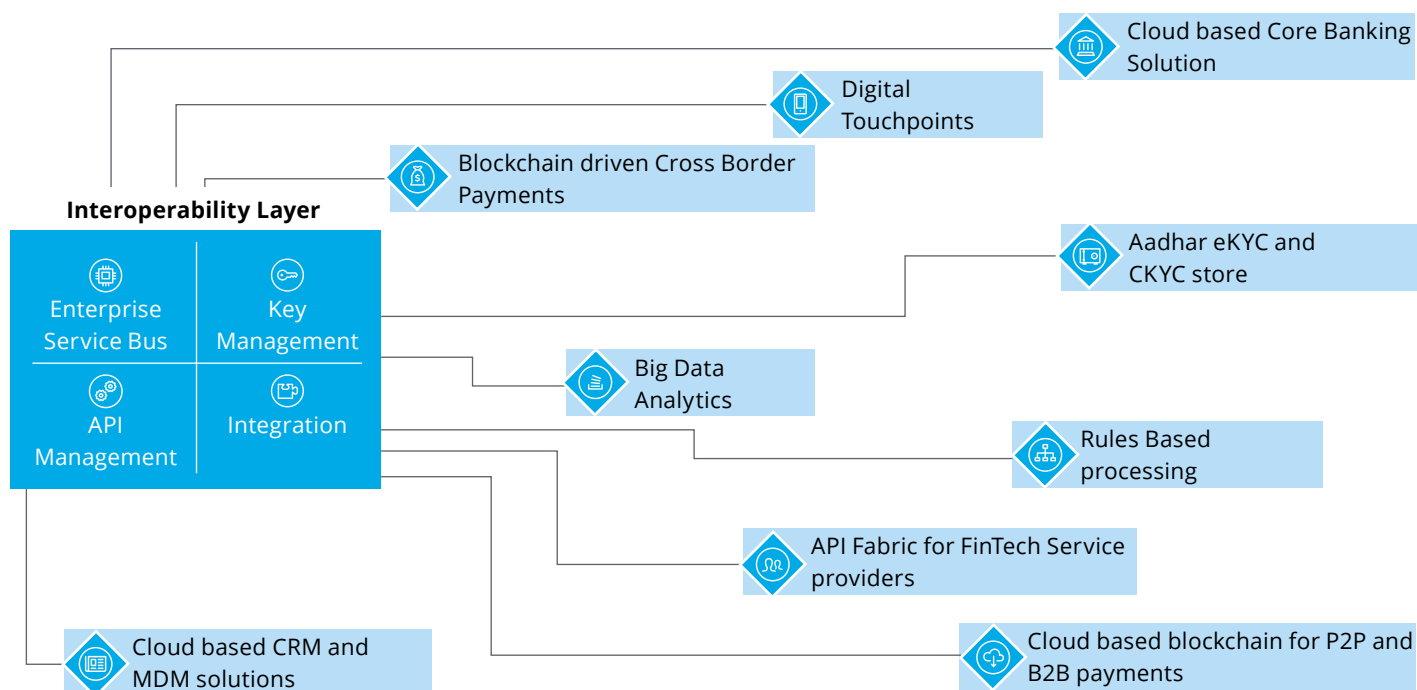
Figure: Key Principle Defining Service Architecture



Source: Deloitte Analysis

The future of a bank is a complex environment of technology and business models and the bank is likely to need a very different architecture to adapt to the changes. More applications and functionalities are likely to be hosted in the cloud, requiring strong governance on risk, compliance, data and information sharing standards. Similarly, many specialised services are expected to be provided by FinTech, which will be enabled by an API fabric which will help fulfillment of these services across organisational boundaries.

Figure: Bank Architecture of the Future



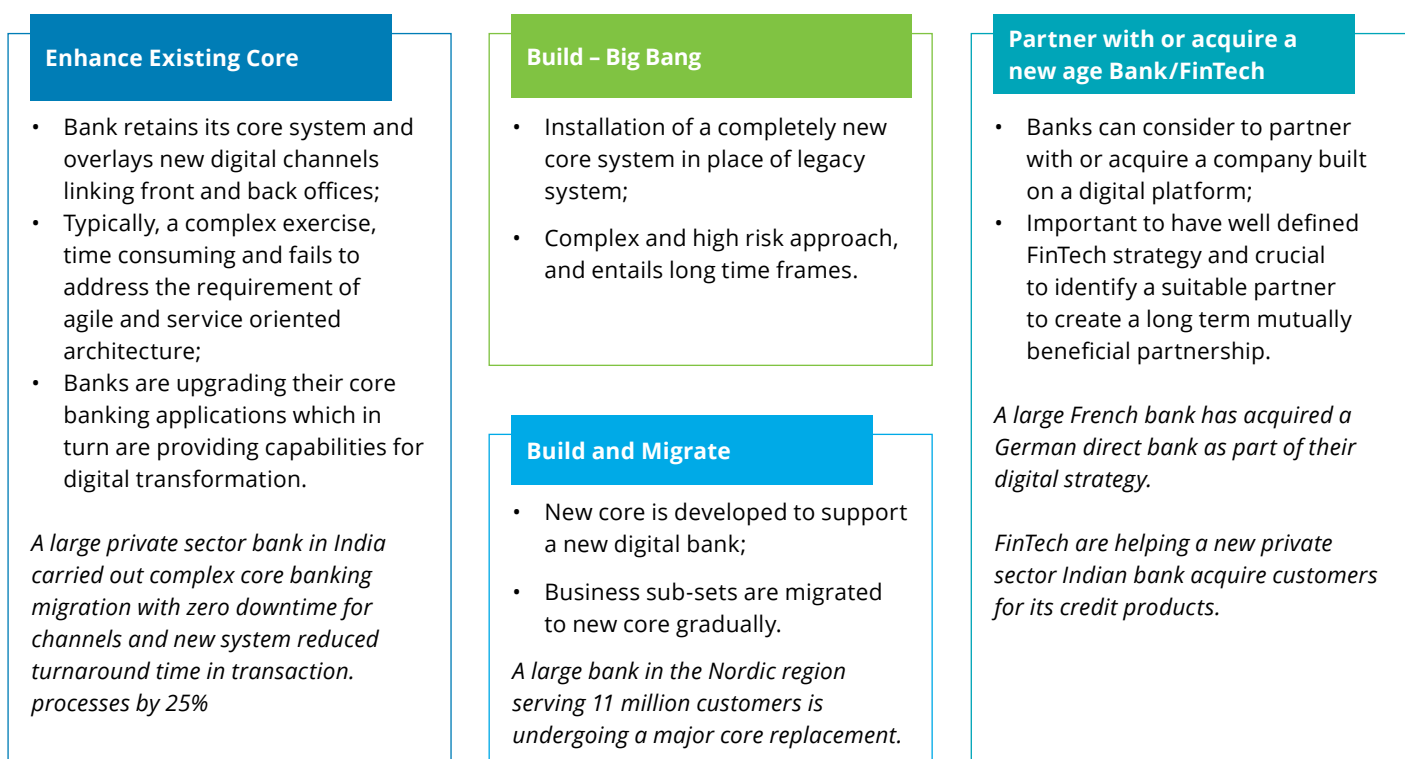
Source: Deloitte Analysis

By now, it has become evident that this is the right time for banks to invest in technology transformation and strong business case exists to justify the same. However, before embarking on this transformation journey a key consideration needs to be addressed –*how can a bank make this transformation to deliver new-age digital services while ensuring profitable growth for survival? Key options which are available with banks are as follows:*

1. Enhance existing core system;
2. Build your own platform – big bang or phased;
3. Partner with or acquire a new age Bank/Fintech.

These three options have been elaborated further in the figure below.

Figure: Approach for Digital Transformation



Source: Deloitte Analysis

Conclusion:

Banks and financial services institutions might have survived to date by leveraging technology as a business enabler (i.e., support function). However, with changing customer needs, growing competition, disruptive digital technologies and increased regulatory pressures, it is imperative for banks to upgrade their enterprise architecture and the associated technology landscape to drive business and innovation. The recent wave of technology innovation has shaken the banking landscape, a similar wave of sophisticated cyberattacks and media amplified IT outages has shaken the customers' and regulators' confidence. Hence, banks will have to focus on building an architecture which is resilient, secure and scalable to ensure minimal disruption to business during unforeseen scenarios and help resurrect the banks position to digital savvy customer's needs.

Cyber threats and privacy

Banking industry is witnessing rapid changes in terms of digital transformation and agile culture development. With increase in consumption of smart phones and introduction of 4G services in India, banking consumers have developed a preference of digital payments and online banking.

In the industry where customers have developed a digital mind set and moved towards adoption of digital services, **customer centricity and enhanced digital experience** have become one of the top most priorities for the banks. As part of providing an enhanced customer experience, the banking sector has adopted an Omni-channel customer engagement environment that includes channels like online banking, mobile payments, in-branch services and social media management teams.

One of the major factors that continues to affect the banking industry is regulatory requirements. The Reserve Bank of India (RBI) governs the banking sector in India through various legal and regulatory requirements. These regulatory requirements focus on areas such as **Information Security, Electronic Banking, Technology Risk Management and Cyber Frauds**. The regulatory authority also cover the aspects of risk management and code of conduct in out sourcing of financial services by Non-banking financial companies (e.g., IT service providers)

Rapid changes in technology and disruptive transformation have enabled more sophisticated cyber attacks and a wider attack surface. With adoption of Omni-channel models for providing various banking services to customer, the attackers have also improvised their penetration methods.



The following areas reflect the major cyber threats pertaining to the banking industry:

- **Phishing and social engineering:** Cyber criminals manage to break in with the help of social engineering and phishing. E.g. Phishing email sent to bank employees, fraudulent calls to banking customers etc.
- **Sector specific malware:** Increased use of banking Trojans and ransomware to achieve data exfiltration.
- **Card skimmers:** The attacker attaches a skimmer either on the outside or inside of ATMs to collect card numbers and personal identification numbers, or uses point of sale terminals to extract card

information stored in the magnetic strip.

- **Mobile banking exploitation:** Mobile devices are targeted to steal personally identifiable information such as pre stored payment information etc.

With the increase in cybercrimes, the banking industry continues to invest in cyber security solutions and hiring the right talent to manage cyber frauds and incidents. Following are a few examples that banks are implementing/adopting:

- **Defense in depth:** Implementation of layered approaches that provide redundancy and slow down the attacks in progress.

- **24/7 intelligence monitoring:** Real-time monitoring of advanced persistent threats and anomalies to achieve early detection and containment of probable attack.
- **Resilience management:** Ensuring preparedness of the organisation through crisis management and simulations.
- **Assessments of third parties:** Managing risk through an independent information security review of vendors providing services to accomplish critical banking operations.

With a steady increase in cyber-crime, many organisations across a variety of industries are susceptible to cyber-attacks. Recent cyber-attacks indicate that breaches are inevitable and can be extremely harmful. Cyber breaches can lead to tangible costs, brand degradation and changes in consumer behaviour. In this context, many organisations have come to the realisation that a cyber-attack is inevitable - it's not a question of 'whether' it will happen, but 'when'. Although, it is impossible to be 100% secure, by developing a sound cyber risk management approach,

organisations can implement a number of risk treatment measures for prevention, detection and response activities to keep cyber risks at an acceptable level. Furthermore, the ever-evolving cyber risk landscape is driving interest in cyber insurance as one complementary element of the cyber risk management approach, which allows organisations to transfer some of the risks associated with cyber incidents to their insurance provider.

Cyber insurance can complement an organisation's active security



measures by providing insurance coverage covering areas such as:

- Liability for a data breach or loss;
- Remediation costs (e.g. for investigating the breach, notifying affected parties, etc.);
- Regulatory fines/penalties and settlement costs.

Banking and Privacy

The recently released draft India Personal Data Protection Bill (PDPB), 2018 considers the protection of personal data of data principal at the core its construct. We understand that

the proposed bill will be applicable to the following after has been enacted:

- Organisations (public or private) incorporated under the Indian law engaged in collection, disclosure, sharing or processing of the personal data within the territory of India.
- Organisations not having an establishment within India, if such organisations process personal data in connection with any business carried out in India, or any systematic activity of offering goods or services to data principals within the territory of India, or in connection with any activity which involves profiling of data principals within the territory of India.

This means once the bill is enacted and enforced, privacy will no longer be optional and cannot be ignored. Among many significant provisions, the PDPB proposes substantial penalty for violation of the stated requirement. Such provisions along with heightened focus on collection and use of personal data, will require organisations (referred in the bill as Data Fiduciary and Data Processor) such as banks, financial organisations, FinTech firms etc. to revisit their risk acceptance criteria and establish a robust privacy and data protection framework. The indicative implications of the bill on the banking sector are as below:

- **Privacy policy:** Bank that collects store, deals, or handles Sensitive Personal Data or Information (SPDI) is required to have a privacy policy available on its website for review.
- **Consent:** Bank while collecting the SPDI must seek written consent from the person in relation to the purpose, intended recipients and vendors with whom this information will be shared.
- **Third Party Sharing:** Prior written approval of the customer is required before transferring banks, financial organisation to third party. Bank shares SPDI with third parties for credit/debit cards printing, ATM facility, and outsourced e-banking.

Bank to ensure third party comply with the data protection rules.

- **Bank account:** Customer shares his information as per the KYC process with bank. At this stage, bank will have to comply with privacy policy and consent under the rules prescribed.
- **Reasonable security practices:** Banks should implement strong data security policies and procedures designed to protect SPDI from unauthorised access, damage, modification etc.
- **Tele/Mobile banking:** Customer is required to share the unique identifiable information to gain access to the bank services. Tele/mobile banking also falls within the rules of data protection.
- **Payment gateways:** Payment gateways should have in place a mechanism to ensure data security protection as per rules, since they will be validating payment transactions on the basis of the information provided by the customer.
- **Right to be forgotten or data erasure:** Customer can request access to, or the removal of, their own personal data from banks without the need for any outside authorisation.

Until the law gets enacted, organisations may consider the following initiatives:

- Define and inventories Personal and Sensitive Personal Data;
- Develop culture of privacy with awareness and training session;
- Establish a robust framework on leading privacy principles;
- Assess and remediate risk w.r.t personal data with third parties;
- Enhance data security measures;
- Conduct Privacy Readiness Assessments;
- Understand data flows for processing of collection and processing of personal data;
- Establish and/or update information notice.

Human Capital

The future of work and leadership in banking

The banking industry is seen undergoing tectonic shifts due to changing customer preferences, demographic shifts and technological disruption. This is, in turn, impacting the ways of working and the capabilities required. This is also likely to impact the future of work, worker and the workforce in the banking industry, along with the exponential expectations for leaders to drive and sustain the change. The section below explores this theme in greater detail.

The future of banking in india is changing

The banking Industry is seen facing a transformational phase where technological innovation and capital preservation have become the fundamental survival need of every organisation. While, on one hand, various macro-prudential regulatory efforts and restructuring initiatives

have led to some sort of a resurrection and revival of the sector, on the other hand, the banking sector is being continuously challenged by the advent of digital innovation and disruptions from within and outside the core sector. Spurred by increased awareness among customers and a shift in their expectations, emerging competition from start-ups, and limitations in the traditional models of conducting business, banking sector appears to have reached a tipping point. To stay relevant in the business, banks are being forced to redefine their purpose, disrupt their own business models and show a great deal of resilience in absorbing and propagating exponential change.

Changes in customer preferences:

Various socio-economic factors are impacting the way customers now want to experience banking. By 2021, **64% of Indians** will be millennials averaging

around 20 hours a week on online activities²⁴ and the need to service this growing demographic population has already brought about many changes, both in the services banks offer and the work they do. Key customer preferences have been highlighted below:

1. **Ease of access** – Increasingly customers are alienating themselves from the concept of going to a physical branch for their banking needs. They desire to access the bank and its services from the comfort of their homes and offices.
2. **Consistent service** – Customers' evolving needs focus on consistent user experience across channels. Service is becoming the true differentiator in the banking industry today.
3. **Efficiency** – With the economy growing at a rapid pace and a faster way of life, customers are expecting faster turnaround times from their banking and financial services partners.
4. **At the centre** – Customers expect to be at the centre of the bank's engagement model and desire to have complete control of the financial supply chain.

The changing customer preferences and business landscape is leading to many changes in the banking sector such as the rise of branchless banking, persistent growth of payment platforms, Fintech collaborations, greater consolidation in the sector and the unprecedented growth of digitalisation.

Key changes in the banking sector:

1. **Rise of the payments platform** - In the aftermath of demonetisation, India saw an unprecedented rise in payment platforms such as e-wallets.



²⁴ Livemint, Morgan Stanley

Their growth led to greater financial inclusion and a larger degree of digitalised cash.

- a. Daily transactions through e-wallet services went up from 17 to 63 lakh.
- b. Daily volumes through RuPay were up 316% at 16 lakh.

2. **FinTech partnerships** - Banks are being compelled to compete effectively with the lean, agile and innovative fintech start-ups. Many banks have partnered with Fintech start-ups to improve their digital capabilities.

- a. **Case in point 1:** HDFC Bank has multiple partnerships with FinTech to drive value in different parts of its value chain. Illustrations of these collaborations include:
 - i. NotifyVisitor to drive marketing campaigns and customer engagement through a SaaS platform²⁵.
 - ii. Taptis technologies for Biometric payments²⁶.

- b. **Case in point 2:** Axis Bank recently hosted a hackathon in collaboration with NASSCOM to incubate relevant FinTech. It entered into a partnership with Vayana Networks for an end-to-end invoicing and payments solution²⁷.

- c. **Case in point 3:** Bank of Baroda has tie-ups with

CreditMantri and FundsTiger to strengthen its retail and SME loan offerings²⁸.

3. **Branchless banking** – There is a rapid growth of digitalisation and additionally, increased internet penetration in India has led to a significant rise in e-banking. E-banking is expected to further rise as the use of smart phones, tablets, etc. increases.

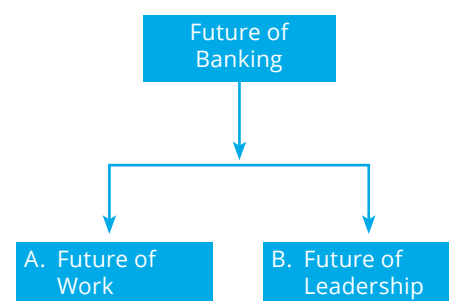
While overall digitisation is picking up fast, banking in hinterland too is changing due to speedy implementation of financial inclusion and engagement of Business Correspondents (BCs)²⁹.

- a. **Case in point 4:** A large part of India Post Payments Bank is dependent on making this branchless banking model successful by using the postal services of India Post as BCs. The postmen of the postal services will be empowered through tabs and data connectivity so that they can perform most of the banking activities at the doorstep of the customer, without the customer having to come at a physical branch.

4. **Artificial intelligence and automation** – Banks have been seen increasing use of AI, chatbots and machine learning algorithms for quicker decision making while automating rule based and repeatable activities through RPA etc.

- a. **Case in point 5:** India's largest bank, SBI, has already embarked upon this journey of AI through a national hackathon called "Code for Bank". This hackathon helped SBI create a solution called Chapdex which is expected to assist in capturing facial expressions of customers in branches and immediately reports whether the customer is happy or sad³⁰.
- b. **Case in point 6:** HDFC Bank has developed an AI-based chatbot, "Eva", built by Bengaluru-based Senseforth AI Research. Since its launch in March 2018, Eva (which stands Electronic Virtual Assistant) has addressed over 2.7 million customer queries, interacted with over 530,000 unique users, and held 1.2 million conversations³¹.

This paradigm shift in the banking sector is seen impacting the way banks need to look at the future of work as well as investments in developing leadership capabilities of the next generation.



²⁵. <https://yourstory.com/2016/03/hdfc-bank-fintech-startups/>

²⁶. https://www.business-standard.com/article/companies/hdfc-bank-partners-with-five-start-ups-116031000738_1.html

²⁷. <https://vayana.com/news/axis-bank-mastercard-vayana-partner-for-b2b-invoicing/>

²⁸. <https://economictimes.indiatimes.com/small-biz/sme-sector/bank-of-baroda-partners-with-creditmantri-for-lending-to-first-time-borrowers-smes/articleshow/53376393.cms>

²⁹. The Hans India

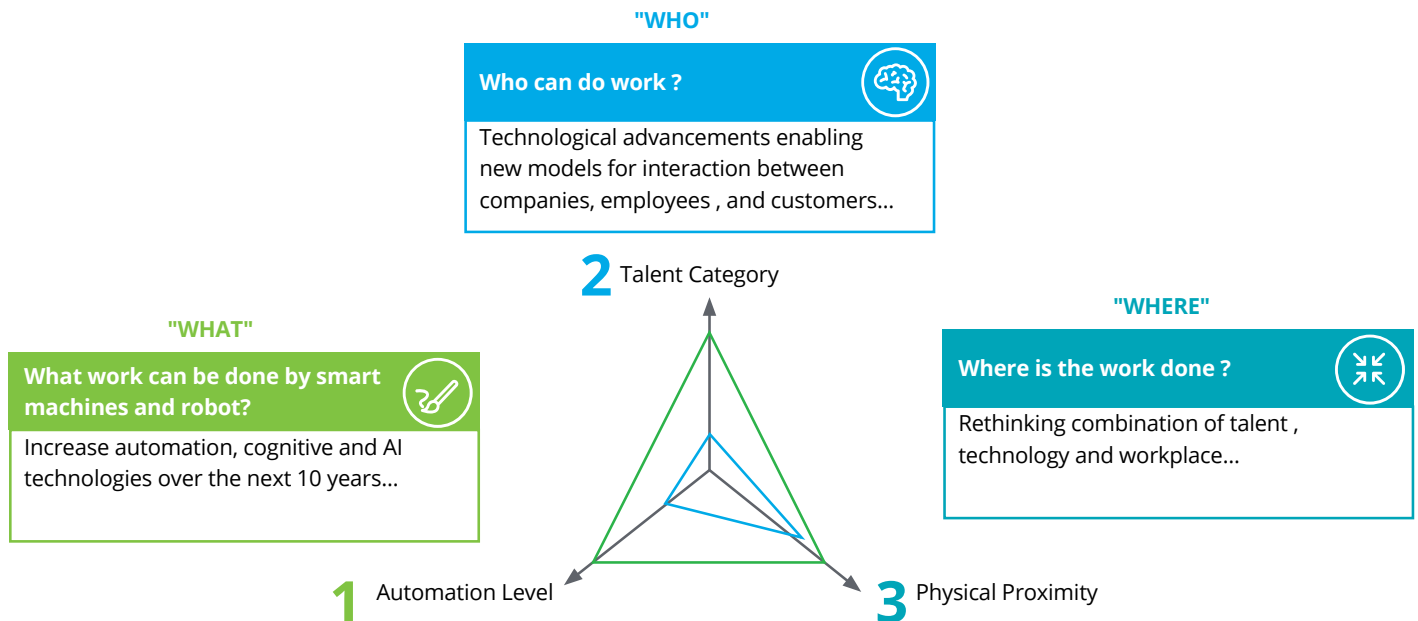
³⁰. <https://www.hackerearth.com/sprints/sbi-code-for-bank-2017/>

³¹. <https://www.hdfcbank.com/htdocs/common/eva/index.html>

A. Future of Work: New realities of the future of work in the banking and financial services sector

The future of work is largely defined by three dimensions: work, worker and workplace:

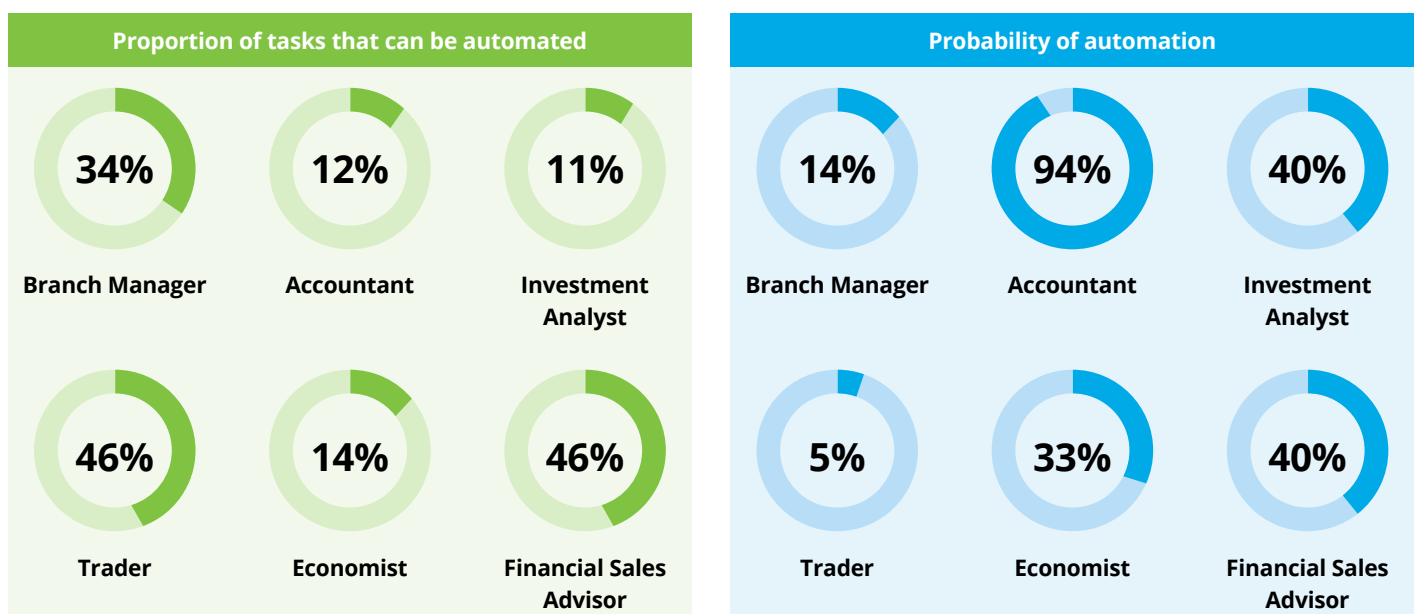
Figure: Future of Work Dimensions - Work, Worker and Workplace



1. The Work is changing: Cognitive collaboration and the need for human skills

As banks attempt to be more resilient, cost effective and digital, there will be a need for increasing reliance on automation to drive efficiencies. A recent study estimated that in the next 2-3 years, machines will be capable of performing approximately 35 – 40 % of the work currently done at banks. Key aspects of bond trading, accounting, AML compliance, and invoice processing are some of the areas seen to be ripe for automation, as are processes such as hiring and induction, reporting, and general-ledger. The figure given below shows the proportion of tasks that can be automated along with a probability of automation.

Figure: Proportion of Tasks for Automation



As a significant portion of the transactional and repeatable nature of jobs gets automated, there will be increasing need for banks to focus on the more human nature of work. This reality presents the opportunity to reimagine the economic value of work through increased productivity that human machine collaboration can bring to the workplace³². Research suggests that while automation can improve scale, speed, and quality, it does not do away with jobs. In fact, it might do just the opposite. What's more, in many cases, the newly created jobs in the banking industry are more service-oriented, interpretive, and social, playing to the essential human skills of *creativity, empathy, communication, and complex problem solving*.



Hence, the banking sector would need to focus not just at redesigning jobs, but also rethink “work architecture.” Doing this involves disintegrating work into its basic components— analysis, development, problem-solving, communication, administration—and examining ways in which machines and humans can accomplish tasks by working in tandem to achieve maximum efficiency³³.

2. The Worker is changing: Growth of the contingent workforce and the gig economy

With the increase in bank and fintech partnerships and dependence on various external technology partners

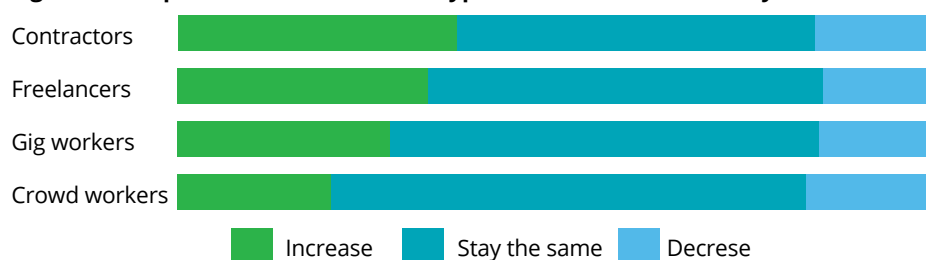
for digital banking, the composition of the workforce in the BFSI sector is changing dramatically. Only 42% of respondents in the Deloitte Global Human Capital Trends Survey 2018 indicated that their organisations are primarily made up of salaried employees, and they expect to dramatically increase their dependence on contract, freelance, and gig workers over the next few years. This suggests that the traditional employer-employee relationship that used to exist in the banking sector is gradually being replaced by the emergence of an open talent economy — freelancers, contractors, consultants, talent networks, gig workers, and service

providers that offer banks flexibility, capability, and the potential for exploring different economic models in sourcing talent. Banks will need to support, guide, and monitor performance measures in order to optimise the entire mix.

3. The Workplace is changing: An integration of the physical and virtual world

As banks gradually adopt digital practices, branchless banking, e-wallets and cryptocurrency, the employee is expected to gradually move from a physical workplace to a more virtual one. Technology has also allowed a significant portion of work—and the workforce—to move beyond the four walls of a traditional office and reporting relationships typically found in conventional organisation structures. It is common for digitally connected professionals to perform some of their work in cafés or shops, at home, or on “vacation.” Colleagues can easily communicate across geographies, simultaneously reducing expenses, environmental damage, and bodily wear-and-tear.

Figure: Anticipated use of each labor type in 2020 relative to today



Source: Deloitte Global Human Capital Trends survey, 2018.

Deloitte Insights | deloitte.com/insights

³². Deloitte Future of Work study

³³. Deloitte Human Capital Study 2018

Therefore, the workplace of the future is no longer siloed and driven by functional mandates. It is seen driven by customer experience mandates. Organisations are seen becoming more and more networked and extremely adaptable to various technology and workforce changes. While banks need to protect the core, they need to consider disrupting the edges. They need to realign select existing structures into self-managed, networked teams focused on a specific outcome and shift away from static 'boxes and lines'.

Case in Point 7: Recently, a large multinational bank worked with Deloitte to design a new operating model to increase delivery speed and inject start-up characteristics into its thousands of functionally aligned technology employees. The main organisational recommendation was removing functional organisational

silos that made hand-offs slow and resulted in costly interactions. Deloitte proposed a solution that divided work into product focused outcomes and positioned long-standing cross-functional teams around each outcome. Additional support mechanisms were put in place (including functional learning communities and a robust portfolio management team to oversee future demand and team productivity) to ensure the organisation could adapt to complexities over time³⁴.

Deloitte research suggests that in today's networked organisations, a combination of technology, physical space design, new leadership approaches, and new work practices must all come together to achieve the goal. HR organisations of banks would need to consider working with the IT teams to monitor team management, goal-setting, and

employee development and help make the new connectivity tools productive, simple, and engaging.

Case in Point 8: Adaptable and flexible workspaces are one key factor to enable productivity. For example, few banks have agile teams work in co-located workspaces with large whiteboards that show project plans, shared goals, and project status. This mix of physical spaces helps people work together or privately when needed and quickly collaborate on projects³⁵.

B. Future of leadership: next generation leadership traits for leaders in the banking industry

To adapt to these new realities of banking and the future of work, leaders in the banking sector will have to Think Differently (Cognitive), Act Differently (Behavioural) and React Differently (Emotional).

Figure: Future of Leadership (Think, Act and React Differently)

Cognitive transformation (THINK differently)	Behavioural transformation (ACT differently)	Emotional transformation (REACT differently)
Conceptual Thinking Conceptualising possibilities in a virtual world	Emotional Intelligence Adapting to constantly shifting power and influence	Risk Tolerating an environment of risk and ambiguity
Breadth Handling ever-increasing cognitive complexity	Social flexibility Collaborating with ease across many different teams	Resilience Showing resilience in the face of constant change
Experimenting Thinking divergently about new ways of doing things	People regard Valuing the contribution of new work partners and different interest groups	Challenging Being brave in challenging how things are being done
Decisive Making decisions quickly without all of the information	Fail fast Investing huge amounts of energy into getting things right; try, fail, try again	Proactive Having the confidence to take the lead in driving change

Given the increasing diversity in the banking sector in terms of customers, talent, technology and ideas, leaders need to enable the THINK, ACT and REACT factor through the six identified traits (the figure is adjacent/next page) of *inclusive leadership*³⁶.

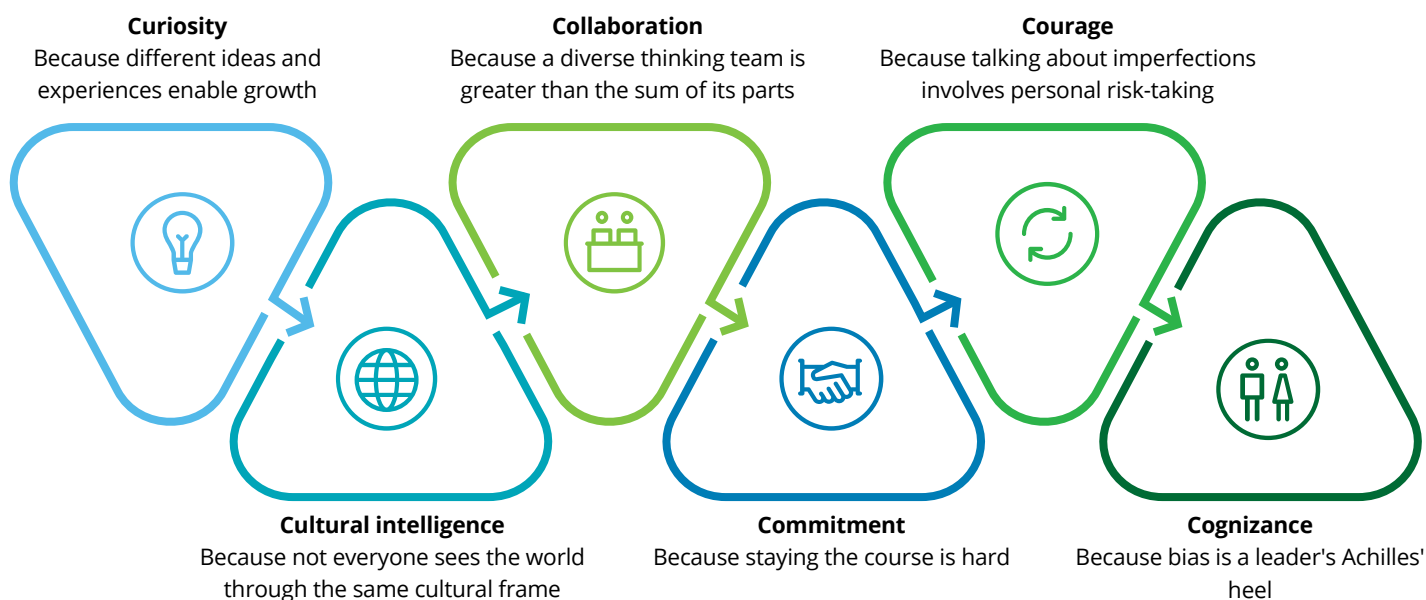
³⁴. Deloitte PoV – Unlocking the flexible organization

³⁵. Besin by Deloitte blog

³⁶. Deloitte Inclusive Leadership research

Collectively, these six traits represent a powerful capability that is highly adapted to diversity and the digital mind-set.

Figure: The six signature traits of an inclusive leader



Source: Deloitte University Press | DUPress.com

Trait 1: Commitment

Commitment to diversity and inclusion because these align with personal values and because they believe in the business case. Treat all team members with fairness, transparency and respect and understand the unique qualities of each.

Trait 2: Courage

Speak up and challenge the status quo, and be humble about personal strengths and weaknesses. Readiness to challenge engrained organisational attitudes and practices. There is vulnerability to being an inclusive leader, because confronting others and/or the status quo immediately invites the spotlight on the leader.

- **Case in Point:** One of the global banks has started investing heavily in the development of a digital mindset amongst its leaders. Deloitte is executing multiple 2-3 day workshops across various locations focused on getting participants from their day-to-day activities and putting them in an extremely experimental, collaborative and innovate environment to lead this digital culture transformation. They are developing the capabilities of Design Thinking, challenging

the orthodoxies and human centric design.

Trait 3: Cognizance of bias

Be aware of blind spots at a personal as well as organisational level and self-monitor them. Biases are a leader's Achilles' heel, potentially resulting in decisions that are imbalanced and unreasonable. Need deep awareness that biases can constrict the field of vision and prevent from objective decision making.

Trait 4: Curiosity

Have an open mindset, a desire to understand how others view and experience the world, and an acceptance for ambiguity. Thirst for continual learning—open-mindedness, inquiry, and empathy and openness; this also involves withholding rapid judgment, which can suppress the flow of ideas.

Trait 5: Cultural intelligence

Have confidence and be effective in cross-cultural interactions. Ability to function effectively in different cultural settings is about more than just understanding different cultural frameworks. Be tolerant of ambiguity,

which enables managing the stress imposed by new and/or different cultural environments.

Trait 6: Collaborative

Empower individuals as well as create and leverage the thinking of diverse groups. While collaboration among similar people is comfortable and easy, the challenge and opportunity thrown up by collaboration with diverse people (employees, customers, or other stakeholders) is immense.

Concluding Remarks

Both private and public sector banks in India need to relook at the way they are approaching work, worker and the workplace. Each bank should consider investing in developing leaders to drive the transformational initiatives and create an environment of agility, collaboration and innovation. While the RBI is taking the necessary steps to guide PSBs in the right direction through the Enhanced Access and Service Excellence (EASE) framework for leaders, private sector banks need to build the rights platforms and forums for their leaders and the larger workforce to think and live digital.

Summary

Post the global financial crisis, financial regulators and decision makers globally have been focusing on improving the resilience of financial services industry. One of the most critical first lines of defence in the resilience of the financial institutions is their risk management practices. The regulatory authorities are in the process of strengthening the risk management practices through increased regulatory and supervisory focus, and additional guidance on firms' risk culture and governance practices. Moreover, the government (the states and the centre) is playing an important role in the implementation of reform agenda.

Regulatory reforms such as the introduction of an insolvency and bankruptcy framework, promotion of digital payment systems and the implementation of the GST are slowly improving the business environment.

In this technology era, which includes continuous cyber-attacks, greater use of outsourcing, the cloud, unplanned system outages, an operational failure is inevitable. Hence, the banking industry should be well prepared to respond rapidly to emerging operational events to minimize the impact on the market participants and their customers. Further, the system should consider investing in developing their workforce who in turn will drive the transformational initiatives and will create an agile, collaborative and innovative environment. The customer in focus is the generation next millianals and intermediaries are changing. This requires rethinking of the business design.

A strong and resilient banking system is the foundation for sustainable economic growth given that the banks are the central point for credit intermediation between the savers and the investors. Moreover, banks provide critical services to consumers, small and medium-sized enterprises, large corporate firms and the governments who rely on them to conduct their daily business, both at a domestic and global level.



Abbreviations

Abbreviation	Details
AI	Artificial Intelligence
AML	Anti Money Laundering
API	Application Programming Interface
ATM	Automated Teller Machine
B2B	Business-to-business
BBPS	Bharat Bill Payment System
BC	Business Correspondents
BHIM	Bharat Interface for Money
CDR	Corporate Debt Restructuring
CRM	Customer Relationship Management
CRILC	Central Repository of Information on Large Credits
EASE	Enhanced Access and Service Excellence
FFIEC	The Federal Financial Institutions Examination Council
FinTech	Financial Technology
FPII	Faster Payments Innovation Index
GLBA	Graham Leach Bliley Act
GNPA	Gross Non-Performing Advances
GST	Goods and Services Tax
HKMA	Hong Kong Monetary Authority
IBC	Insolvency and Bankruptcy Code
IMF	International Monetary Fund
IMPS	Immediate Payment Service
IoT	Internet of Things
IRA	Intelligent Robotic Assistant
KYC	Know Your Customer
MAS	Monetary Authority of Singapore
MFIs	Microfinance Institutions
NPCI	National Payments Corporation of India
OSV	Original Seen and Verified
OTP	One Time Password
P2P	Peer-to-peer
PDPB	Personal Data Protection Bill, 2018
PSB	Public Sector Banks
RBI	Reserve Bank of India
RPA	Robotic Process Automation
S4A	Scheme for Sustainable Structuring of Stressed Assets
SCB	Scheduled Commercial Banks
SDR	Strategic Debt Restructuring
SMA	Special Mention Accounts
SPDI	Sensitive Personal Data or Information
SWIFT	The Society for Worldwide Interbank Financial Telecommunication
UAT	User Acceptance Testing
UPI	Unified Payments Interface
USSD	Unstructured Supplementary Service Data

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