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#FutureFasterTogether #FutureOfBanking

The
Future of
Banking
Report

2023 & Beyond

Enabling banks to get to their
future, faster. Together.

FOREWORD

The global banking industry is on a roller coaster of economic uncertainty and turmoil. Customer sentiments are constantly being challenged due to the instability in the financial sector. With warnings sounded for over a year, major economies worldwide now grapple with the impact of recession. The World Economic Forum identifies it as a 'Rolling Recession,' affecting specific sectors. The banking industry is experiencing persistent headwinds, which may continue for longer than expected.

Banks globally have undergone radical changes, from the pandemic to the recent economic meltdown. In the US, the consecutive failures of Silicon Valley Bank (SVB) and Signature Bank spooked depositors and banking customers with a wave of crisis. Likewise, in the European financial industry, there is doubt about the survival of several banks after Switzerland-based Credit Suisse lost billions of Dollars due to the collapse of investment funds. Although, in both economies, central banks and regulators have stepped up with enough support, in the US, regulators like the Federal Deposit Insurance Corporation (FDIC) have taken control of SVB, while the Federal Reserve System (FED) is pumping in funds to support First Republic Bank's loss. The action taken by Swiss central banks is even more to bailout Credit Suisse, with USD 52 billion in funding. There are many open-ended questions – Are regulators able to boost customer trust? Are customers confident enough to continue to bank with regional, mid-size and small banks? What will drive customers to deposit their hard-earned money in banks? Will regional and community banks face more withdrawals than deposits?

It is evident that FY 2023-24 is not forgiving for weak and challenged banks. For the last few years, banks have been constantly focusing on digital adoption and addressing rapidly changing customer behavior and expectations.

The competition was growing intense with more neo and challenger banks capturing the share of the pie. Entities like Varo, Chime, Starling, Atom Bank, Moven, Jiko, One, Monzo, N26 and the likes had become a threat to the banks.

While the efforts towards digitization and digital banking will continue, this year, there will be equal or more attention towards building risk resiliency and readiness to face regulatory demands and remain compliant. Recent collapses ensured that banks rethink their current strategy, not just in risk management but also in terms of customer engagement. This year, we must anticipate a gear shift from 'Innovation' to 'Action.' It is time for banks to focus on leveraging Artificial Intelligence (AI), Machine Learning (ML), Internet of Things (IoT), Metaverse and others to drive customer engagement and regain confidence. Data platforms will play a pivotal role as an underlying enabler for all these to increase cloud adoption. In order to accelerate the adoption and survive in this highly competitive environment, we anticipate a surge in demand for SaaS and Banking-as-a-Service (BaaS) products.

While the economy is under immense pressure from rising interest rates, banks face equal challenges with an increased cost of funds and declining credit demand. This year, banks must focus on restoring and regaining customer confidence. Banks will likely revisit their investment and spend areas to sustain themselves amid economic turbulence and satisfy regulators' rising demands.

Our report highlights the top 10 trends in Banking across five key areas, empowering global banks to reach their future, faster.
Happy Reading!

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Emergence of a New Banking Business Model: Banking-as-a-Service (BaaS)

Emergence of a New Banking Business Model: Banking-as-a-Service (BaaS)

Banks have embraced open banking standards to expand their business and are raking in profits for every call a third party makes to fetch customer data. They ensure technology reformation and re-engineering to meet goals and increase profits by creating multiple revenue streams. This seems more like a tactical approach than a long-term plan to sustain the banking business.

In recent years, FinTechs like Revolut, Stripe, Square etc. have emerged as banking services providers. While not as licensed banks, they have made a place for themselves along with the mainstream players. Some incumbent banks, laggards in creating innovative banking services and products, have lost customers to FinTechs due to this lethargic mindset. Worried about getting side-lined, these incumbent banks are fortifying their existing customer base by foraying into innovative business transformation initiatives and partnerships with FinTechs, which is mutually beneficial.

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BaaS – A New Avenue for Sustainable Growth

Along with **chatbots** and **social messaging payment apps,** a buzz in the **banking and financial services industry is Banking-as-a-Service (BaaS).** BaaS is a new avenue for any brand or retailer to offer financial services without spending on the infrastructure to build a core bank. **Retailers like Walmart, Apple, and Amazon** have also forayed into this model of **embedding financial services** into their products and services, which enables creating accounts, ensuring payments, short-term credits, housing loans, and other financial services.[1]

Gartner Hype Cycle for Digital Transformation states that BaaS will hit mainstream adoption within two years. It is predicted that 30% of banks with assets greater than USD1 billion will see BaaS as a new revenue stream by 2024. It is also anticipated that most of these banks may be able to meet the targeted expectation and overcome technological and business glitches. They aspire to convert sunk regulatory investments like PSD2 in Europe into revenue-generating machines previously.
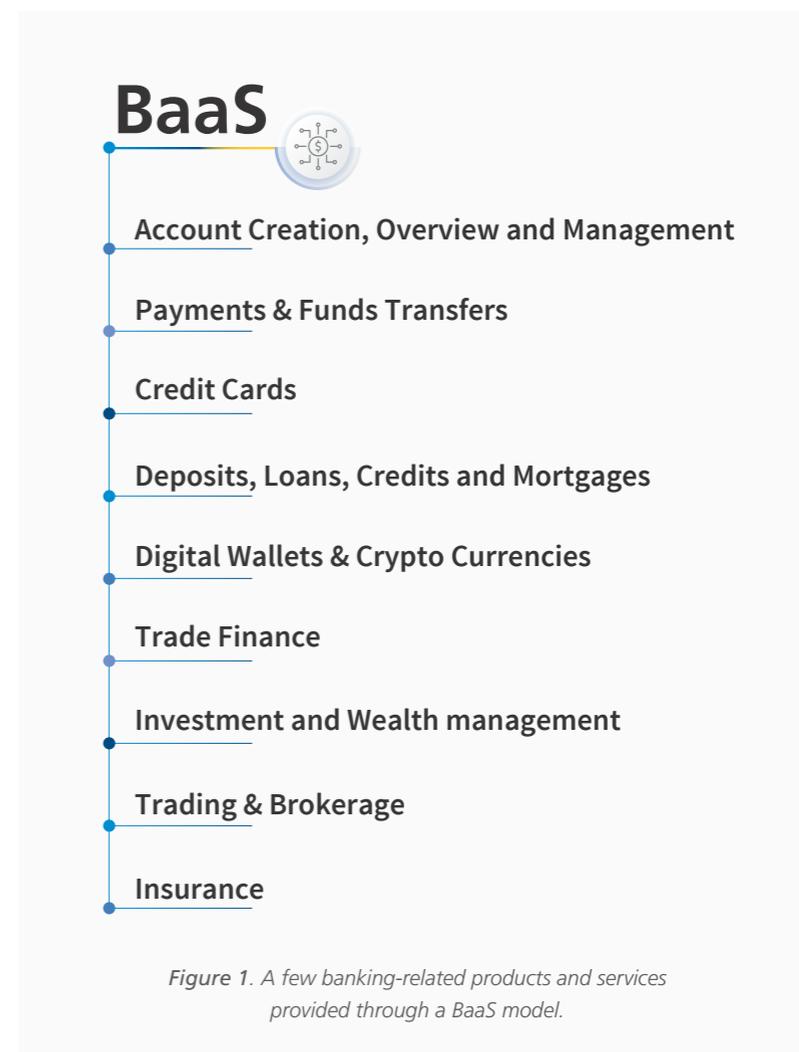
This eco-system of brands, banks and FinTechs paves the way for a comprehensive solution that propels sustainable growth, ensuring a 360-customer engagement and new acquisitions with the least possible effort and expenditure, apart from creating a new revenue stream as part of the partner ecosystem. A great example in the recent past is **'Varo,' the first FinTech to become a bank** in 2020, which embedded the financial services of Bancorp to power their all-mobile banking platform. Another company, 'Wealth Front', rolled out cash management services by partnering with Green Dot Bank. Through a partnership with **Stride Bank and Bancorp, 'Chime' is a mobile-only bank** that transformed from mere debit prepaid card facilities to full-fledged financial services. Also, **Apple partnered with Goldman Sachs** to power up bill payment features and help customers establish healthy spending habits.[2]

In a BaaS ecosystem, a brand or business can directly establish a link with a bank that provides API infrastructure (BaaS) to embed financial services into its brand products. Alternatively, a third party can also act as a middleman to provide BaaS platforms to business houses. By monetizing the BaaS service provision (customer data, infrastructure etc), banks latch on to it as a new revenue stream. BaaS is helping banks by creating a new business model that ensures a fresh and sustainable revenue stream. Provisioning a bank's infrastructure generates data through business and revenue-sharing agreements. It could be subscription-based, pay-as-you-use, one-time setup fees, or a combination.

According to US Banking Digital Trust Benchmark Intelligence, it is understood that users trust digital banking disruptors like Apple, Paypal, Walmart, Venmo, TikTok, or Klarna to carry out daily banking business – where the primary bank could include a traditional or a digital-only bank.

Way Forward

Banks/ financial institutions (FIs) have realized the impact FinTechs create by providing customer-driven banking services. FinTechs focus on ordinary customers' lives while designing a service or product, elevating the banking experience. This helps enhance loyalty and ensures that the customer becomes a brand ambassador.

BaaS

- Account Creation, Overview and Management
- Payments & Funds Transfers
- Credit Cards
- Deposits, Loans, Credits and Mortgages
- Digital Wallets & Crypto Currencies
- Trade Finance
- Investment and Wealth management
- Trading & Brokerage
- Insurance

Figure 1. A few banking-related products and services provided through a BaaS model.

According to a survey of bank executives, 79% think adopting platform-based business models will give them a competitive edge and motivate them to innovate new products, assuring profitability and expansion into new markets. The value of the global digital platform market is forecast to hit USD 8.67 billion by 2027.[3]
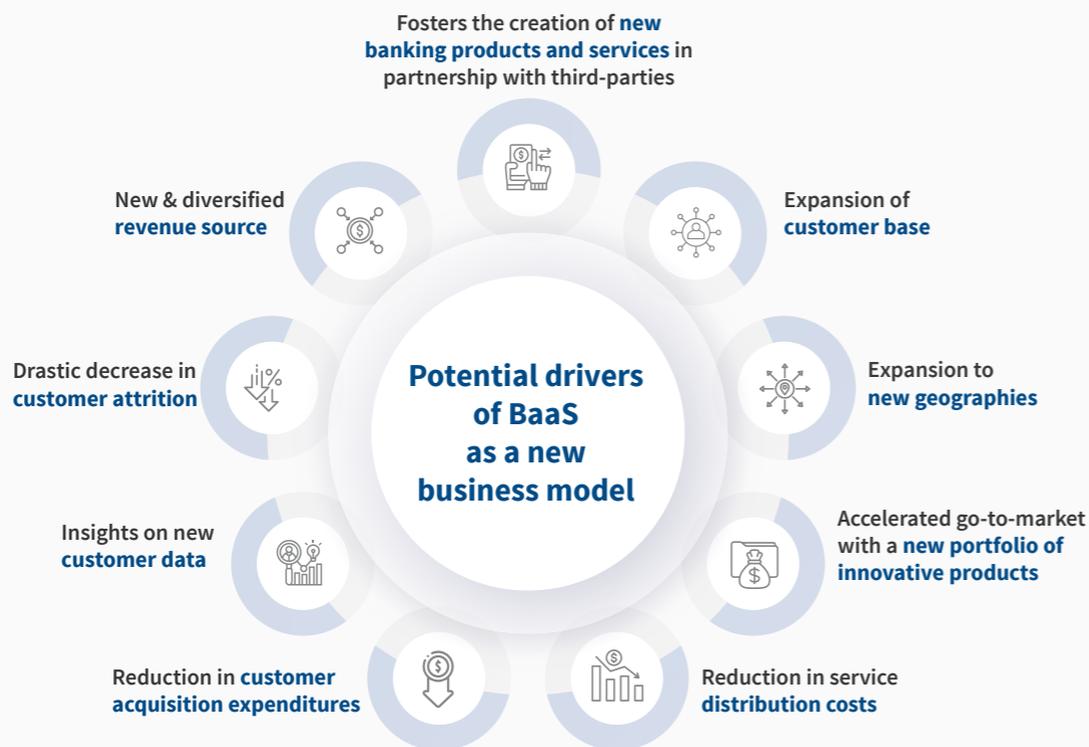

Figure 2. Potential drivers for BaaS

Would traditional banks find it challenging to adapt to a banking ecosystem? Yes, some global banks in Europe & Americas, with their legacy systems built on monolithic architecture, are facing difficulty in adapting to digital and open banking, eventually obstructing their growth. By embracing a new business service model, traditional banks get access to a new customer base and establish new products and services for a larger set of customers in different geographies with the least acquisition and marketing costs.

In a survey conducted by E&Y on adopting the banking ecosystem model, 55% of the respondents were of the view that this would increase efficiency and reduce cost, while another 54% were of the opinion that their organization would expand to new geographies, with other portions of the respondents believing that the model would help in creating combined offerings along with acquiring new customers.[4]

One of the early adopters of BaaS, US-based **Coastal Community Bank, created an exclusive BaaS division** and partnered with 21 firms after scrutinizing 900. While fixed fees, volume-based fees, etc., derive the bank's revenue from this model, its income from BaaS offerings increased by 233%. Similarly, **Evolve Bancorp reaped a 120% YoY** increase in BaaS income. **US-based community bank 'Cross River' partnered with several FinTechs** to leverage its BaaS platform as a distribution channel for the paycheck protection program.[5] Even top-tier banks like **BBVA launched a BaaS platform to offer a full suite of banking services and products to third-parties.[6] Goldman Sachs bought Greensky,** a point-of-sale loan provider, to boost its BaaS offerings. **Standard Chartered Bank partnered with an Indonesian e-commerce firm** to offer digital financial services to customers and merchants.[7]

Key Takeaways

Today, banks have a better infrastructure to enable everyday banking. Incumbent banks can optimally use this infrastructure asset to increase their ROI by creating new revenue streams through the flourishing embedded financing banking services industry. Today, some top 30 global banks and insurers have a market value of USD 3.6 trillion. With the advent of BaaS – embedded deposits, payments, lending, insurance etc, it is estimated that the market will exponentially grow up to USD7.2 trillion by 2030, twice the value owned by global banks today.[8]

FinTechs and neobanks have embraced the BaaS way of providing banking services, by partnering with big brands to embed finance in their business value chain. It is high time that incumbent banks forge ahead to acquire a market share before it is taken over by their competition, who anticipated the future of BaaS models.

Organization-level strategic initiatives in re-imagining the banking service provision top the list for incumbent banks. Understanding the relevance of new technology, which will keep banks abreast of competition, and investments in new technology like API-based platforms must be discussed.

A strong resolve by incumbent banks to barge into the USD 7 trillion market space is imperative. Creating digital subsidiaries, which focus on innovating new digital banking business models with or without collaboration to tackle the growing banking service platform economy, would be a great step forward.

These initiatives require niche skilled experts who understand the digital platform economy from all dimensions. Combined with a digital subsidiary, the technical expertise must also be nourished by building a new technology or buying a Configurable-Off-The-Shelf (COTS) product to complement the objective of a new digital venture. This can also mean that banks acquire new start-ups that understand the market better.

In an ecosystem model, banks & FIs are exposed to a new set of business channels with diverse revenue streams on the one hand, and on the other, FinTechs benefit by having a larger customer base to capture.
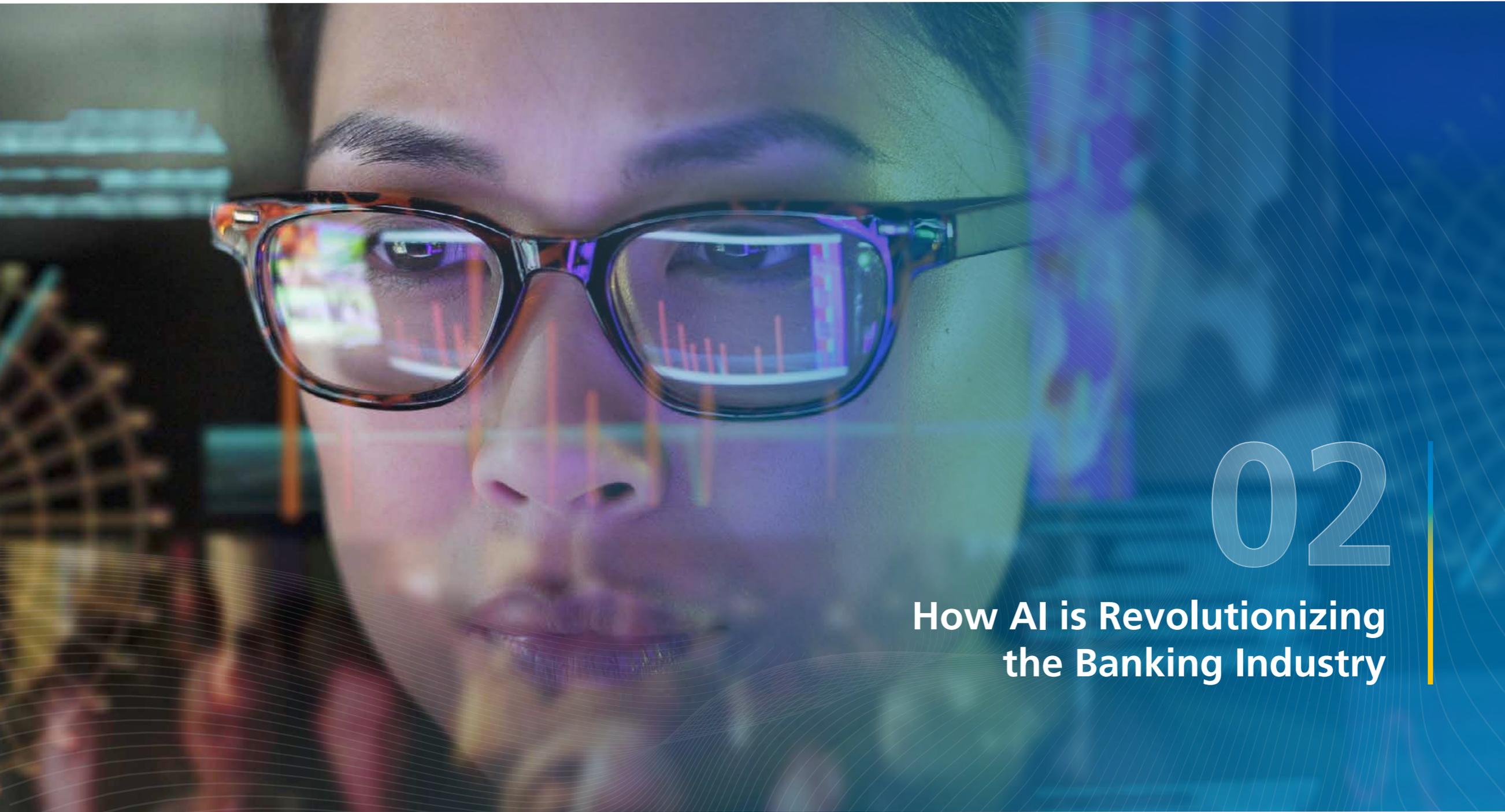
02

How AI is Revolutionizing the Banking Industry

How AI is Revolutionizing the Banking Industry

The banking industry has witnessed significant advancements in AI since the early 2010s, with AI-powered machines driving digital transformation. The adoption of AI technologies in the global banking sector is projected to contribute a value of USD 1 trillion annually. This integration enhances the efficiency of banking products and services. According to researchandmarkets.com, the global AI market in the banking industry is expected to reach USD 64.03 billion by 2030, with a compound annual growth rate (CAGR) of 32.6% between 2021 and 2030.[9]

The uses for AI can be determined by banks' approach after the recession due to the pandemic. Internet banking became the new normal for both banks and consumers. The lack of technology in banks was a hindrance, affecting customer experience. This led to banks improving their AI services, and the adaptive ones were able to recover from the pandemic's impact. COVID-19 significantly influenced the industry as customers could not access banks traditionally. This led to banks relying on AI for global progression and safety. Now, banks are getting into digitization to provide new products and services based on AI and machine learning. AI is helping customers keep in touch with banks and enhancing their banking experience.

What are Cognitive, Adaptive and Generative AI?

Cognitive AI is designed to simulate the human thought process. Cognitive AI systems are often designed to be able to process natural language and take decisions based on complex data sets, making them well-suited for tasks such as language translation, image recognition, and problem-solving.

Adaptive AI is designed to learn and adapt to its environment and its goal is to create systems that can improve performance and accuracy over time, without the need for human intervention. This type of AI is able to adjust its behavior and performance based on the data and feedback it receives from its surroundings.

Generative AI is a form of machine learning that is able to produce text, video, images, and other types of content. Banks have the unique opportunity to use this technology to streamline processes, improve fraud detection and enhance customer experience. The demand for Graphical Processing Units (GPUs) – the backbone behind Gen AI and which are used to train reinforcement learning algorithms – has been increasing rapidly, according to a report by MarketsandMarkets.[10]
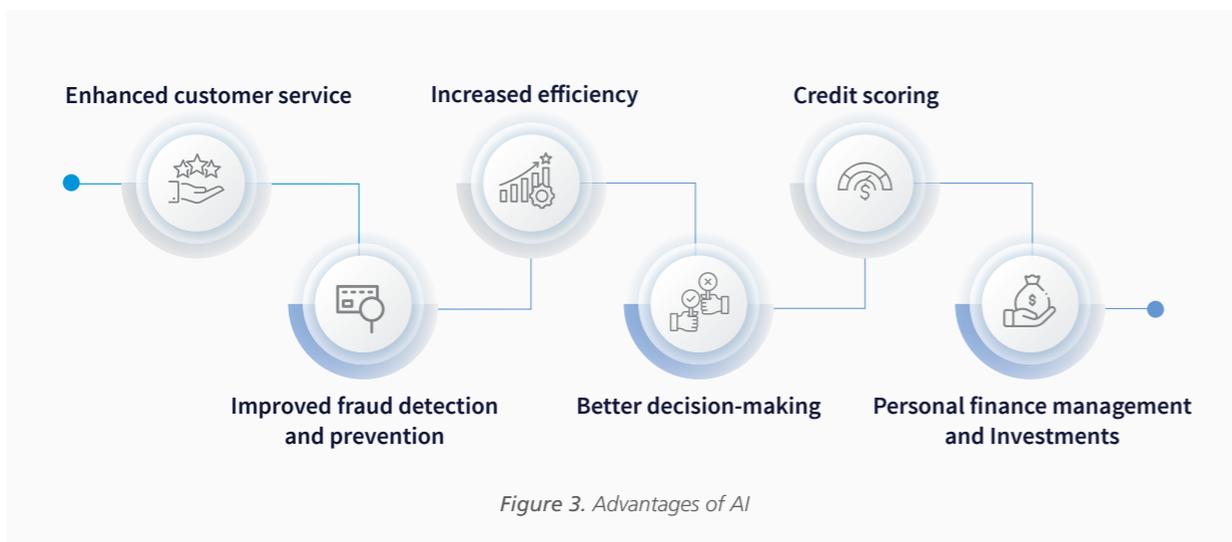

Enhanced customer service

Increased efficiency

Credit scoring

Improved fraud detection and prevention

Better decision-making

Personal finance management and Investments

Figure 3. Advantages of AI

Enhanced customer service

AI-powered chatbots and virtual assistants can handle routine enquiries and help customers resolve simple issues without the need for human intervention. AI can help banks improve their customer service by providing quick and accurate responses to customer inquiries. For example, American Express reported that its AI-powered chatbot, 'Connie,' has handled over 100 million customer interactions and saved the company over **USD 11 million** in customer service

costs.[11] A chatbot powered by AI can answer customer questions about account balances, transaction history, and other banking services. This is helping banks to optimize time and resources while providing a more convenient experience for customers.

Machine learning algorithms help automate certain customer service tasks, such as answering frequently asked questions or routing customer inquiries to the appropriate department. This helps banks improve response times and service their customers more efficiently.

Improved fraud detection and prevention

By analyzing large amounts of data and learning from past fraud cases, AI systems are helping banks identify suspicious activity and prevent fraudulent transactions before they occur. AI can help banks identify fraudulent activity by analyzing large amounts of data and recognizing patterns that may indicate fraudulent behavior. This can help banks prevent financial losses and protect their customers' information. According to a report by Accenture, AI-based fraud detection systems reduced false positives by up to 50% and decreased the investigation time by **40%.**[12]

Machine learning algorithms are being trained to identify patterns in customer behavior that may indicate fraudulent activity. This helps detect and prevent fraud before it occurs, protecting both the bank and its customers.

Increased efficiency

AI can help banks automate routine tasks, such as processing transactions and reconciling accounts. This enables employees to focus on more complex tasks, increasing the overall efficiency of a bank.

Better decision-making

AI can help banks make more informed decisions by providing insights and recommendations based on data analysis. For example, a cognitive AI system could analyze customer data to identify opportunities for cross-selling or personalized marketing campaigns.

Credit scoring

Machine learning algorithms are used to analyze a customer's credit history and other financial data to determine their credit worthiness and risk level. This can help banks make more informed decisions about whether to approve a loan or credit card application. JPMorgan Chase reported that its AI-powered loan underwriting system has reduced loan processing time by **90%** and improved decision accuracy by **20%.**[13]

Personal finance management and investments

AI is also being used in personal finance management, where it can help customers understand and manage their financial situation better. For example, AI-powered tools provide personalized recommendations to save and invest, or help customers create and stick to a budget. According to a report by McKinsey, AI-powered investment management systems have the potential to increase returns by up to **3%** and reduce costs by up to **70%.**[14]

Machine learning algorithms are used to analyse market data and make predictions about investment opportunities. These algorithms enable banks and other financial institutions to make more informed decisions about where to invest their funds.
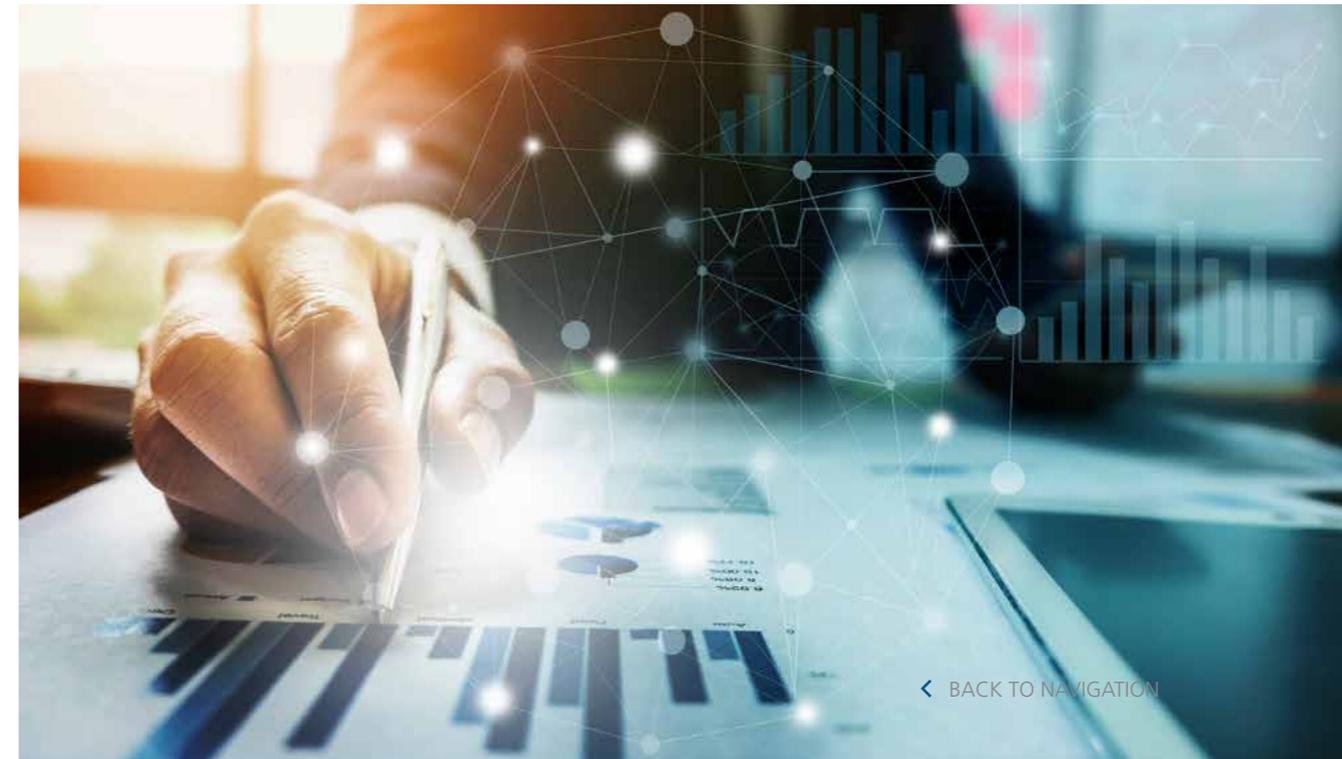
Examples of Cognitive, Adaptive & Generative AI

There are several examples that are being implemented around the world right now. For instance, self-driven cars, or apps that function using a virtual character and computer-generated voice, which can guide customers throughout the process are being used extensively. In Hong Kong, the subway station works on cognitive technology to produce an optimal engineering schedule automatically. It carries over 5 million customers daily and has a 99.9% on time record.

Way Forward

According to research from the National Business Research Institute and Narrative Science, about 32% of financial service providers are already using cognitive AI technologies like predictive analytics and voice recognition. In March 2020, **Scotiabank** partnered with **MaRS** and **C100** to upgrade its product portfolio and enhance its ability to access these technologies, especially AI.

In 2022, **Intel** launched the **Intel® Distribution of OpenVINO™** toolkit version 2022.1, which helps add audience analytics to **kiosks and digital signages.** AI is the future of banking as it leverages advanced data analytics to deal with fraudulent transactions and improve compliance. AI algorithms help banks accomplish anti-money laundering activities in a few seconds, removing the lengthy process that normally takes days, apart from managing huge volumes of data to derive valuable insights. Features such as AI bots (chat or voice), digital payment advisers and biometric mechanisms, which detect fraud in an instant, lead to higher quality of services, which ultimately increases the customer base. All this translates to increased revenue, decreased competition from FinTechs, reduced costs, and a boost in profits. AI is expected to save banks **USD 447 billion by 2023;** the pace of growth in AI will be a deciding factor for banks going forward.[15] China's AI and automation in banking market is growing at a pace where it will reach over **USD 12.6 billion by the end of 2032.** The U.S. is estimated to dominate global automation and AI in the banking market, crossing **USD 64.6 billion by the end of 2032.**[16] Japan's AI and automation in banks and FIs is expected to grow at a CAGR of 21.1% until 2032.

Key Takeaways

AI targets optimized asset allocation, and also provides the right trading facilities. AI systems can be complex and require specialized training and expertise to operate, which can also be a challenge for some organizations. Additionally, AI systems can be expensive to implement and maintain, which can be a significant barrier for smaller banks or FIs that may not have the resources. However, the ability to process a customer's data and analyze the best course for his/ her banking journey makes AI a must for the banking industry. This will also increase customer loyalty and enhance the overall experience. AI is helping banks and customers customize their products and preferences. In addition, with the marketplace changing quickly, AI will be a driving factor for banks to overcome competition from FinTechs. Overall, AI is an ever-evolving technology that will improve and revolutionize the banking industry.

03

Banking of Things – Modernization of Banking

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In this world of digital banking, there are technologies that are coming to the forefront after a decade of research and analysis. One of these is the Internet of Things (IoT). Banking through the IoT refers to the use of connected devices and sensors to facilitate various services, such as account opening and management, and transaction processing. It also facilitates ease in transactions performed on a daily basis i.e., payments, account transfers and smart mobile banking. As per Fortune Business Insights, by 2026, the global market for IoT will rise up to USD 1.103 trillion.[17] The investment point of view in the financial sector includes 58% stakeholders, investing into IoT as a new future for banking. The reported size of IoT in banking is USD 249.4 million, which is expected to surpass USD 2030.1 million by 2023.

Some examples include mobile banking apps, AI chatbots, third party credit banking apps, smart watches and gadgets, one tap payments, and digital sensors in physical ATM units.
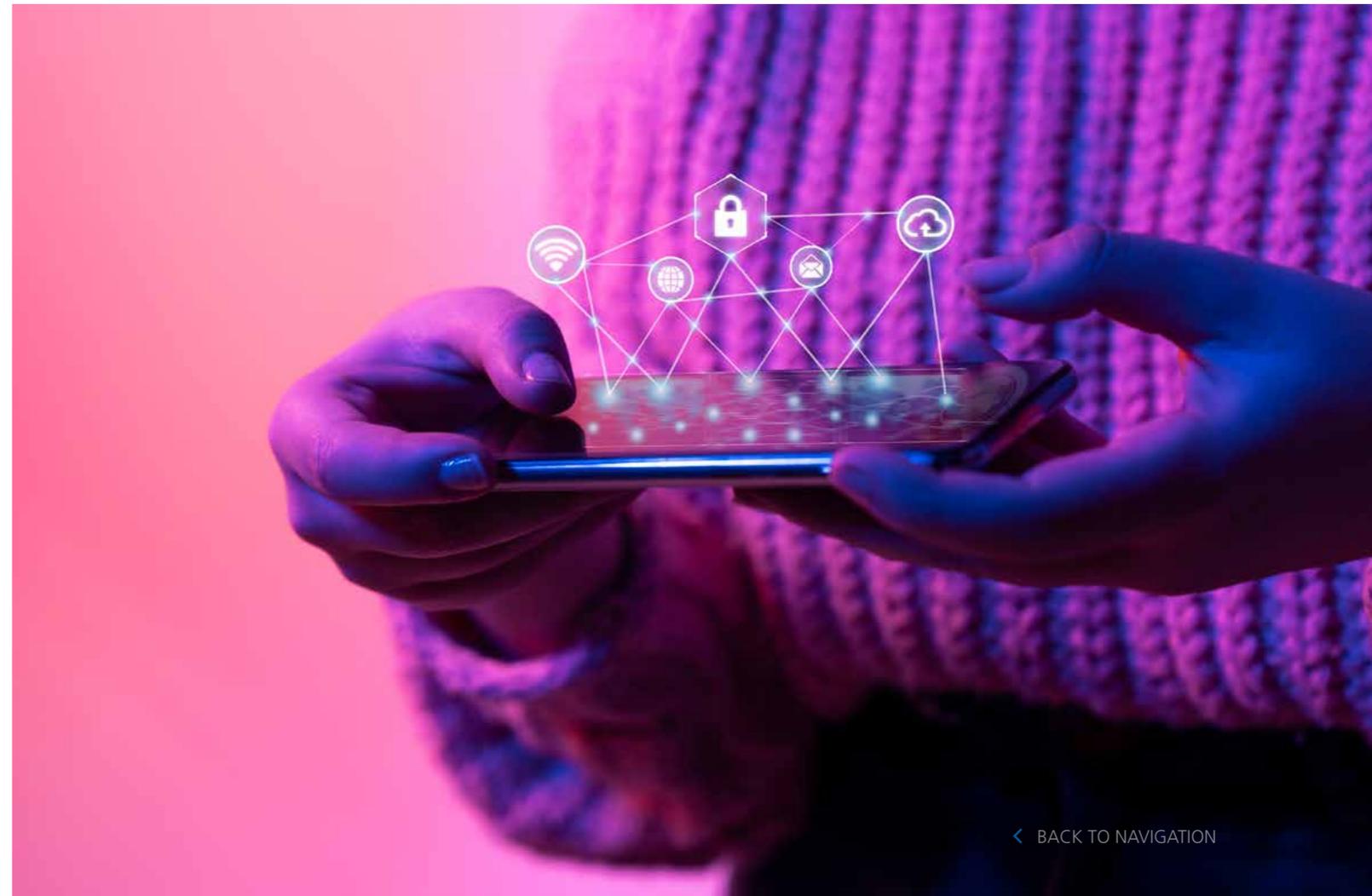
Types of IoT Devices Used in the Banking Industry

There are different IoT-based devices that can be used in the banking domain. A few examples include:

- Smartphones
- Smart watches
- Tablets
- Smart speakers
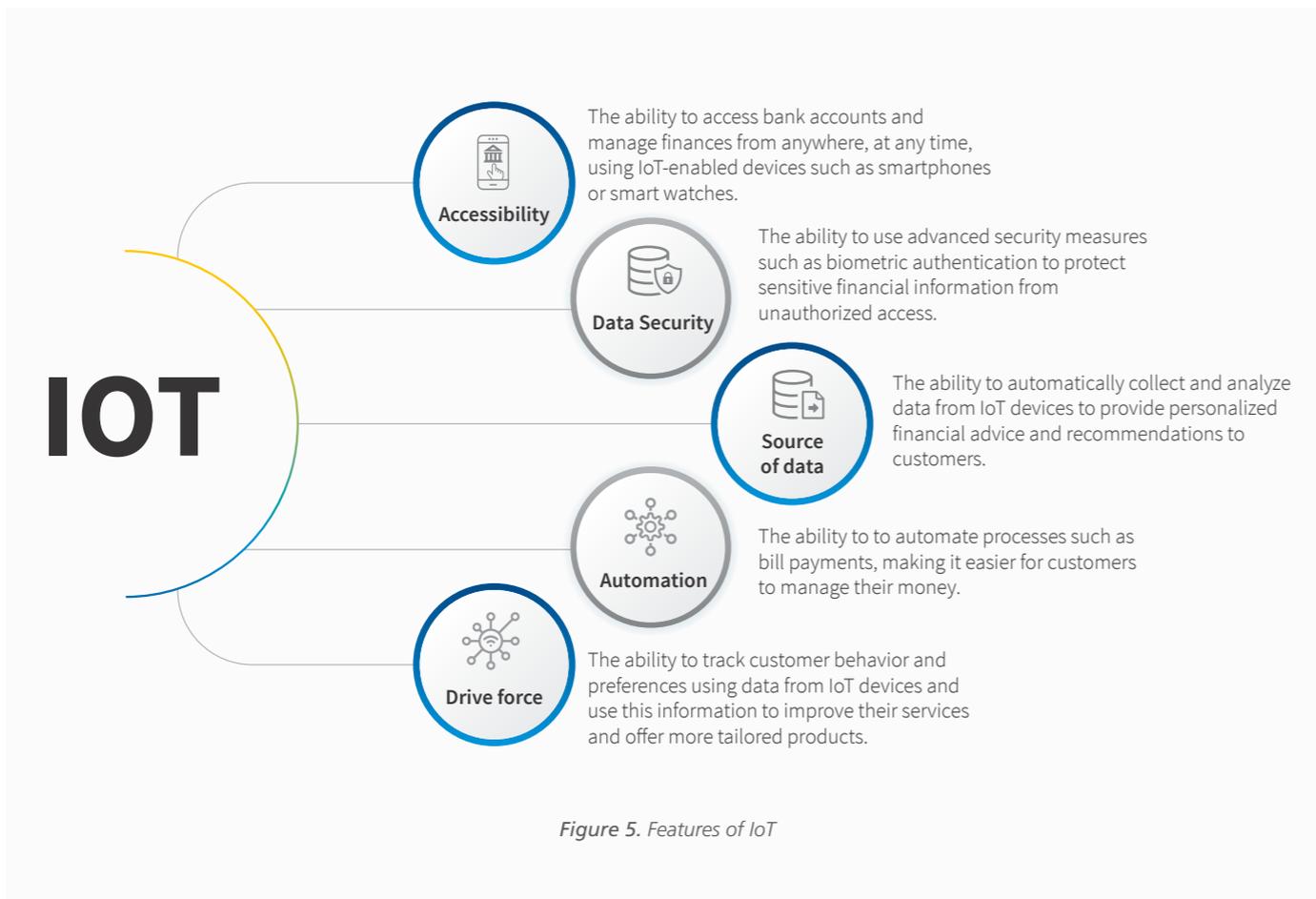- Smart appliances

Figure 4. IoT concepts
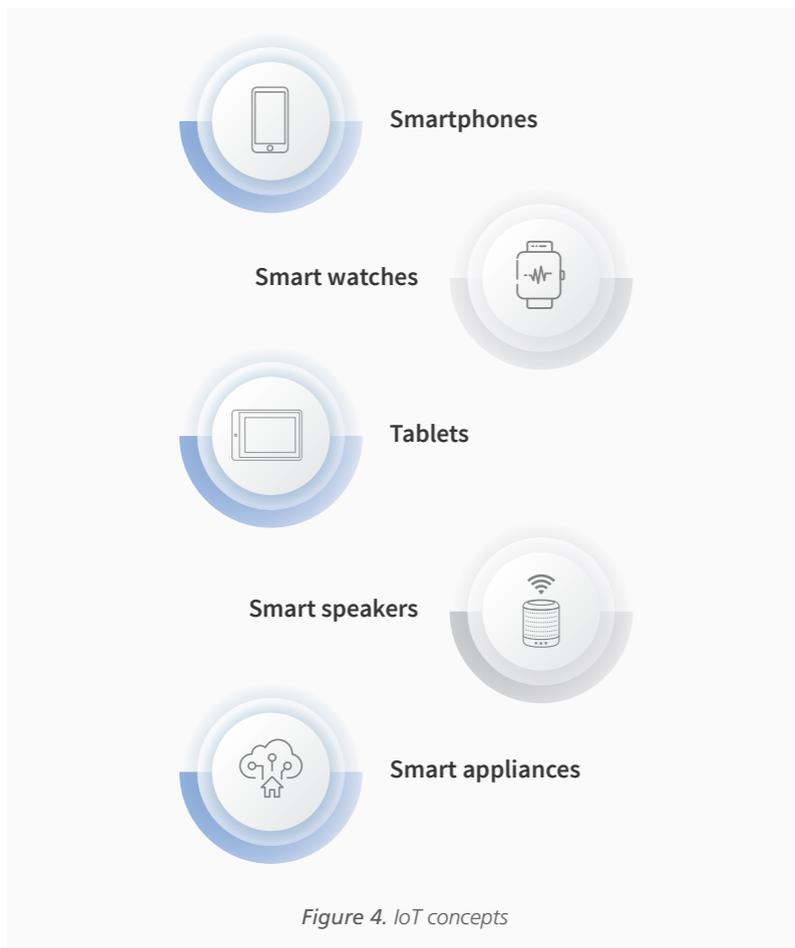
- IoT involves extending internet connectivity beyond a set of standard devices, such as desktops, laptops, smartphones, and tablets, to any non-internet-enabled physical device or an everyday object.

- Many people use their smartphones to access and manage their bank accounts, make payments, and perform other financial tasks. **The integration of banking IoT solutions and wearables, and NFC-powered devices** such as smartphones and smart watches, enable contactless payments for seamless financial transactions.

- Some banks offer apps that can be used on tablets or bigger screens, thus ensuring a more user-friendly interface.

- Some banks offer **voice-activated services** that can be accessed through smart speakers such as Amazon Echo or Google Home. This allows customers to perform financial tasks using simple voice commands.

- Some banks are experimenting with using **smart appliances such as refrigerators or washing machines** to provide access to banking services.[18] For example: Refrigerators with sensors and payment capabilities that can detect the need for supplies, place the order, initiate the payment, and provide an alert to the customer – for him/ her to approve or reject it.

Key Features of IoT

Accessibility
The ability to access bank accounts and manage finances from anywhere, at any time, using IoT-enabled devices such as smartphones or smart watches.

Data Security
The ability to use advanced security measures such as biometric authentication to protect sensitive financial information from unauthorized access.

Source of data
The ability to automatically collect and analyze data from IoT devices to provide personalized financial advice and recommendations to customers.

Automation
The ability to to automate processes such as bill payments, making it easier for customers to manage their money.

Drive force
The ability to track customer behavior and preferences using data from IoT devices and use this information to improve their services and offer more tailored products.

Figure 5. Features of IoT

- An advantage is the ability to provide remote access to banking services. For example, with IoT-enabled devices, customers could access their bank accounts and manage their finances from anywhere, at any time. This can be particularly useful for people who are always on the move or who live in remote areas.

- Another advantage is improved data security. IoT-enabled devices can use advanced security measures such as biometric authentication, which can make it more difficult for unauthorized users to access sensitive financial information. This can help to protect customers and their accounts from fraud and other types of cybercrime.

- IoT can also enable banks to offer their customers with services that are more personalized and convenient. For example, banks could use data collected from IoT devices to provide customized financial advice and recommendations, or automate certain processes such as bill payments. This can help improve the overall customer experience and make it easier for people to manage their money.

- The technological aspect of IoT enables the use of smart devices or applications for banking activities, which provides access to new ways of payments such as one touch. Additionally, IoT-enabled payment systems could use biometric authentication, such as fingerprint scanning or facial recognition, to verify a user's identity and prevent fraud. This would make the payment process faster and more convenient, as the user would not need to manually enter any payment information or PINs.

- Overall, the use of IoT in banking has the potential to provide greater convenience, improved security, and more personalized services for customers.

Way Forward

Today, banks are providing voice-controlled assistance devices that seek permission to access customer details. According to Insider Intelligence, 39% of retail banking executives believed that technology played a crucial role in reducing costs.[19] San Francisco-based Chime, the largest US neobank, had attracted over 7.4 million account holders by 2019, and is projected to grow this figure to 19.8 million in 2024. The process is set to be semi-automated as the customer must link their bank details with the device they are using.

Voice-controlled AI is convenient for customers who prefer to use their voice to interact with technology, rather than typing on a keyboard or using a touch screen. Additionally, voice-controlled AI can make banking more accessible for people with disabilities or who have difficulty in using traditional banking methods. Some banks have developed Alexa skills that allow customers to check their account balances, make payments, or perform other banking tasks using voice commands. For example, a customer might say "Alexa, ask my bank to check my account balance" and the Alexa device would retrieve the information and provide it to the customer. Banks have developed 'actions' that allow customers to access their banking information and perform transactions using their Google Home device. This can be a convenient way for customers to access their banking information, manage their finances, and perform banking tasks and transactions without having to log in to a website or app.

Smart sensors and connected devices are also being used to automate and streamline various banking processes, such as account opening and management, and transaction processing. According to a report published by Allied Market Research, IoT generated USD 12.7 billion in 2021 in the global banking market, and is estimated to cross USD 237.4 billion by 2031, witnessing a CAGR of 33.9% from 2022 to 2031.[20]

Some banks are using IoT to enhance security and prevent fraud by using sensors and other technology to monitor customer accounts and transactions, and are implementing IoT-based security measures such as biometric authentication and real-time monitoring, to protect against security threats. Leveraging IoT data and analytics to gain insights into customer behavior and preferences improves the overall customer experience.
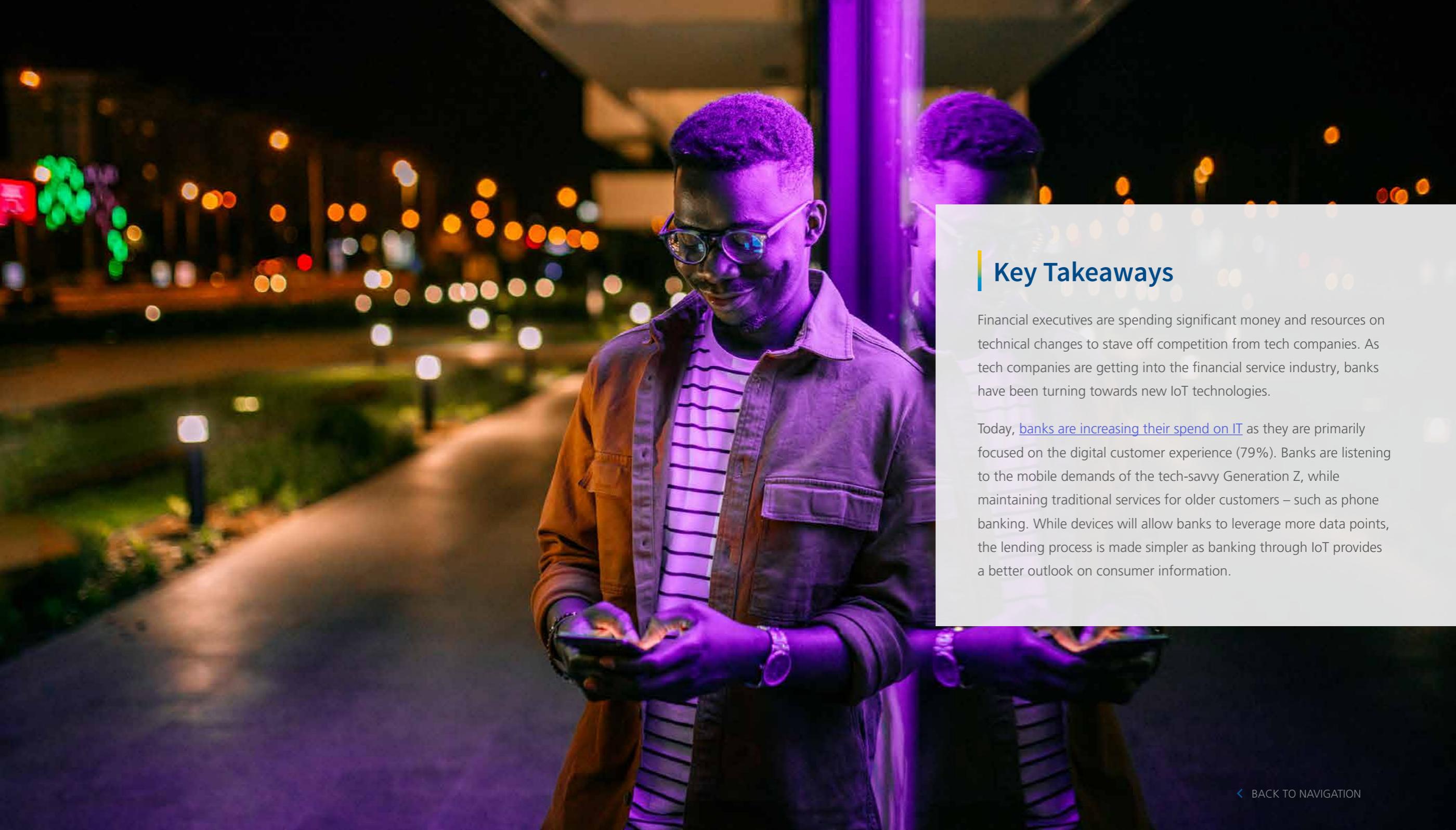
Key Takeaways

Financial executives are spending significant money and resources on technical changes to stave off competition from tech companies. As tech companies are getting into the financial service industry, banks have been turning towards new IoT technologies.

Today, banks are increasing their spend on IT as they are primarily focused on the digital customer experience (79%). Banks are listening to the mobile demands of the tech-savvy Generation Z, while maintaining traditional services for older customers – such as phone banking. While devices will allow banks to leverage more data points, the lending process is made simpler as banking through IoT provides a better outlook on consumer information.

04

Metaverse-Powered Banking – The Next Frontier in Financial Technology

Metaverse-Powered Banking – The Next Frontier in Financial Technology

In today's digital world, **banking has become emotionally devoid** as the empathetic conversations customers had with a bank in the past are lost. The metaverse, on the other hand, promises to put the empathy factor back into banking. Gen Z customers are digitally native, where online is their default channel when looking for products and services. **Banks want to acquire new young customers** as they will likely continue their relationship with the bank for life. Hence, banks are quick to try new and emerging trends; the same is true with the metaverse. The metaverse offers huge scope for innovation in products and services and promises to restore the personalized conversations that are missing in digital channels to provide an enjoyable customer experience. While the gaming, media, entertainment, and retail industries are at the forefront of metaverse adoption, banks have tremendous opportunities too.

Metaverse and its Benefits

JP Morgan, in a recent report, estimated that the market for metaverse will touch USD 1 trillion in yearly revenues.[21] Zion Market Research stated that the metaverse market is expected to reach USD 400 billion by 2028, growing at a **CAGR of 39.5%.**[22] According to Citi GPS, the metaverse's Total Addressable Market is estimated to be between USD 8 to 13 trillion and will have **5 billion users by 2030.**[23]

Metaverse is a virtual world where people can meet, interact with each other, and perform transactions through their digital avatars. It is built using technologies like augmented/ virtual reality and blockchain. Digital assets can be created, stored, bought, and sold in the metaverse just like the real world.

Recent research amongst global banks found that **the metaverse will have a positive impact (67%) and will be transformational (38%).**[24] The metaverse provides many opportunities for banks to reinvent existing customer and employee experiences, reimagine transactions for the virtual world, engage with customers in new ways, offer innovative products and services etc. A few benefits of the metaverse include:

Reinvents existing customer experiences

Metaverse offers customers various banking facilities. One can check their balances, make payments and transfers, pay bills, withdraw cash from virtual ATMs in the metaverse, lend and borrow money and perform transactions through AR/VR channels.

Employee training

Metaverse delivers immersive learning experiences in the form of virtual centers for training and development of employees, onboarding employees remotely, hosting collaboration sessions, investor presentations etc.

Personalized engagement

Metaverse can provide high-touch services for customers looking for sophisticated products. Banks can deliver personalized and trustworthy advice such as financial planning, portfolio reviews, and product recommendations through virtual avatar-based interactions.

Branding and marketing

Metaverse virtualizes interactions such as branding, marketing, and endorsements to attract new customers.

Digital payments and other innovative products

Banks can provide secure payments and wallet services in the metaverse when users need to transfer money between virtual and real worlds to transact or make payments. Banks can also offer Buy Now Pay Later (BNPL) loans and payment facilities to customers by tying up with ecommerce retailers etc. They can offer innovative products and services, thus creating new markets.

Custodian of assets

Ownership of both digital and real-world assets can be represented as NFTs in the metaverse. Banks can become custodians of customer assets in the form of NFTs, cryptocurrency, and virtual real estate.

Virtual branches

Banks can set up branches and launch trading floors and investment spaces virtually, to engage better with customers and attract them to make investments.
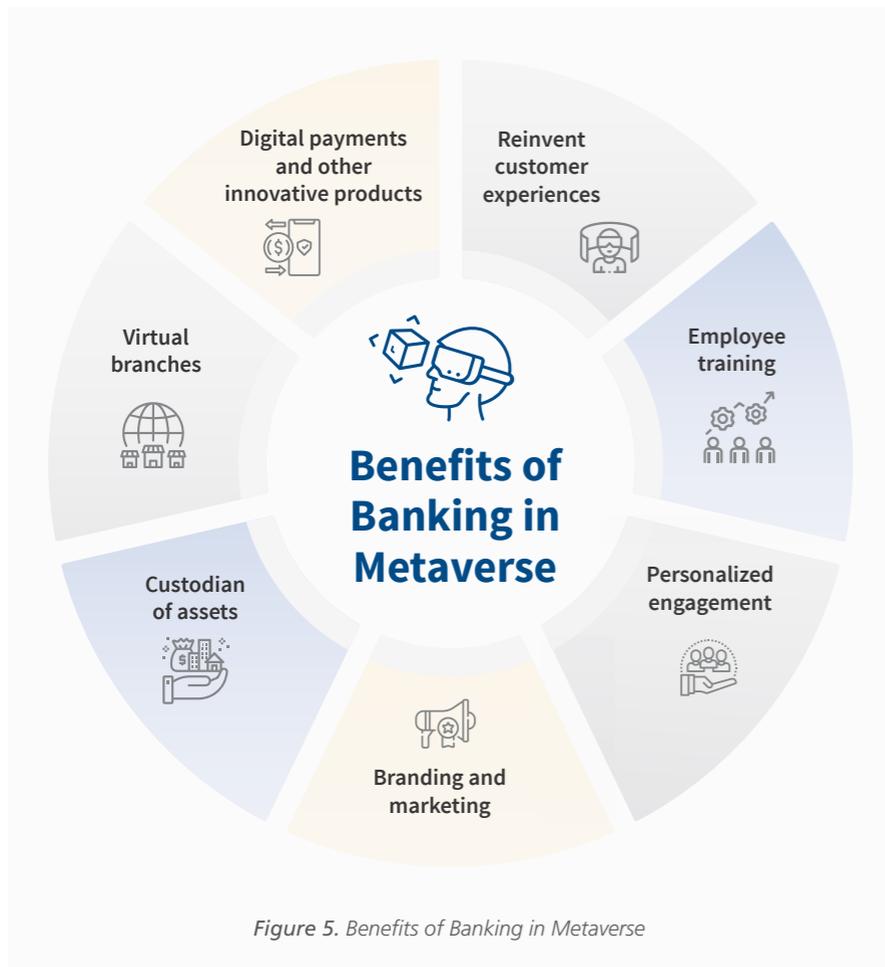
ONLINE
BANKING | START

- Data
- Security
- Analysis
- Innovation
- Technology
- Network

Figure 5. Benefits of Banking in Metaverse

Way Forward

Some banks have already started venturing into a wide range of applications in the metaverse. One of the biggest banks in South Korea, **KB Kookmin Bank, hosts a virtual bank** in metaverse where customers can access their financial information and interact with the its financial advisors through VR.

Bank of America offers VR-based training that allows its employees to learn and practice various routine to complex tasks and virtually **simulate client interactions** in around 4,300 centres across the USA.

JP Morgan is the first of the Big 4 banks to enter the metaverse. It opened a **virtual lounge in the Decentraland metaverse platform.** The lounge gives information to visitors about blockchain, and various technology-driven initiatives that JP Morgan is undertaking. Onyx is JP Morgan's blockchain-based platform for wholesale payments that facilitates cross border payments, financial assets creation and trading.

While metaverse offers many benefits, **banks need to keep in mind the risk and challenges** associated with it. One challenge is the **issue of jurisdiction** as it is not clear which regulatory bodies will have the authority over virtual banks and financial transactions. This leads to other **challenges in terms of compliance and consumer protection.**

Also, in order to fully adapt to the metaverse, **banks should upgrade to new Web 3.0 compatible core banking systems.**

Metaverse will expose banks to various threats like reputational, fraud, legal and **privacy risks attached to tracking and retaining customer data.** The concerns of customers and the scrutiny of regulators will become more severe as the metaverse continues to bridge the gap between physical and digital lives. In addition to the technology barriers, banks also need to **address and define standards for interoperability between platforms,** data privacy and regulatory concerns, fraud, and intellectual property ownership. It is important to **build the metaverse with trust and responsibility at the core.**

The benefits far outweigh the challenges, however. Metaverse is a transformational technology that is still at an early stage in its development, translating to the fact that it is difficult to predict its evolution. A bank willing to venture into the metaverse space should **study the technology landscape and market** to understand how it is evolving and find out the available partners and opportunities. Banks should **evaluate their technological readiness for the metaverse journey** and implement use cases they can leverage without high levels of cost or risk, to begin with.

Key Takeaways

Gen Z wants to engage with financial institutions in environments they feel comfortable in. The world has been shifting to digital interactions and the pace has only increased due to the pandemic. Metaverse is an interaction which when embraced, provides banks to ensure more transactions. As physical branches are shutting down rapidly due to digital banking, **banks should look at the metaverse as a way of maintaining relationships with customers** and provide various banking services. **Just like the real world, metaverse also needs financial services for people to carry out their transactions** that banks can facilitate by providing lending, payments, investment, and insurance services in the virtual economy.

Metaverse provides a platform for innovation and experimentation in the financial sector, and radically changes how customers interact with banks and what kind of products and services are offered. We are seeing rapid advances in metaverse – for instance, VR headsets that are needed to access the metaverse used to cost USD 800 few years ago – but cost only USD 300 today. Even smartphones are now being launched to access the metaverse without the need for a VR headset. **As more businesses enter the metaverse, banks will be able to create a financial ecosystem** in the long-term to serve them, which will create significant new opportunities. Banks that do not act quickly might face an existential crisis.

05

Regulations in the Financial Services Space

Regulations in the Financial Services Space

Although significant strides have been made, the banking and financial services industry still has a long way to go in meeting regulatory expectations. Now, with an avalanche of legislations regulating the banking and financial services sector, we are facing progressive elaborations to them, impacting emerging areas like digital assets, cybersecurity, modifications to Anti-money Laundering (AML), ESG imperatives, etc.

The regulatory outlook for banks in 2023 is shaped by the following imperatives in a wide variety of areas.

MRA (Matters Requiring Attention)

From the perspective of establishing and reinforcing governance and control, MRAs refers to the Office of the Comptroller of Currency (OCC) and the Federal Reserve Board's (FRB) commitment to assess the remediation of outstanding supervisory findings. MRAs are issued during the examination process and consist of confidential supervisory information, while the remediation includes the submission of Form 5G/6G, amongst others.

Regulations on innovation in digital assets, AI/ML, blockchain

As digital assets are making their presence felt, we are witnessing increasing regulations and directives from central banks, which are likely to grow further in 2023. Also, from a technology innovation perspective, regulators are providing directives that include risk management principles for cloud, AI/ML, and blockchain. This is an opportunity for the industry to participate and shape the emerging regulations.

Open banking

The modification in the Advanced Notice of Proposed Rulemaking (DFA) Sec 1033 will enable and is likely to promote open banking in the US. The final rule promoting data access standards will be released in 2023. In Europe, PSD2 specifies that consumers have the right to use any third party provider for their online banking services, while PSD3 will improve some key elements of the present regulation and move towards open finance. This is an opportunity for third party providers to access investment information as well.

FedNow

The FedNow service will be available to depository institutions in the US and enable individuals and businesses to send instant payments through their depository institution accounts. The FedNow platform supports instant payments and enables funds to be transferred from the account of a sender to that of a receiver in near real-time and at any time.

BNPL (Buy Now Pay Later)

The BNPL industry has been closely evaluated by CFPB (Consumer Financial Protection Bureau) and there are concerns that protections under Regulation Z (Truth in Lending) and Regulation E (EFT) are not fulfilled. The lack of standardized disclosures in the BNPL industry does not help consumers understand the true nature of their agreements.

ESG and climate risks

Banks will need to adhere to risk management initiatives and practices set forth by the Basel Committee on Banking Supervision (BCBS), Financial Stability Board (FSB), and the Task Force on Climate-related Financial Disclosures (TCFD). Banks have been mandated to submit Green Asset Ratio/Banking Book Taxonomy Alignment Ratio (GAR/BTAR) reports to the European Banking Authority, while Climate Risk Stress Tests need to be conducted on datasets.

BASEL III

The Basel Committee on Banking Supervision (BCBS) recommended implementing Basel III rules, which have been adopted in several countries. However, US regulators have announced extending the effective date for implementing these capital rules for US banks until January 2025, aligning with the timeline observed in the European Union. The updates to the new framework include adjustments to the supplementary leverage ratio, countercyclical capital buffer, and stress testing requirements.

FinCen

The AML Act of 2020 has undergone amendments by regulators, with the Financial Crime Enforcement Network (FinCen) expanding its scope through the publication of National Priorities and introducing three final rules on Beneficial Ownership. Additionally, FinCen will be guiding the advanced utilization of emerging technologies such as quantum computing for imbalanced data sets and machine learning for transaction monitoring. Despite the attention given to various aspects of anti-money laundering (AML), there has been a relative lack of regulation in fraud detection.
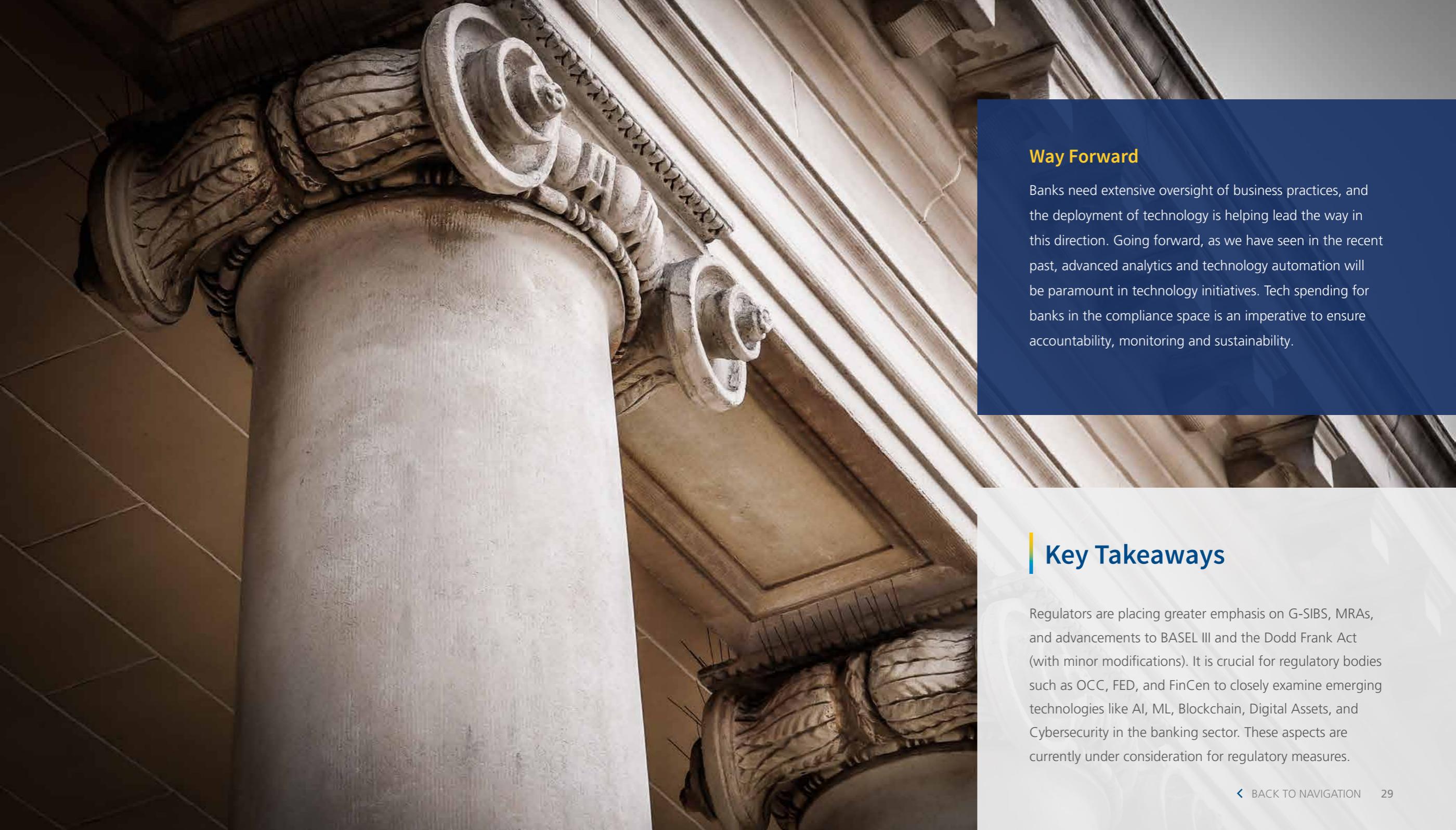
Way Forward

Banks need extensive oversight of business practices, and the deployment of technology is helping lead the way in this direction. Going forward, as we have seen in the recent past, advanced analytics and technology automation will be paramount in technology initiatives. Tech spending for banks in the compliance space is an imperative to ensure accountability, monitoring and sustainability.

Key Takeaways

Regulators are placing greater emphasis on G-SIBS, MRAs, and advancements to BASEL III and the Dodd Frank Act (with minor modifications). It is crucial for regulatory bodies such as OCC, FED, and FinCen to closely examine emerging technologies like AI, ML, Blockchain, Digital Assets, and Cybersecurity in the banking sector. These aspects are currently under consideration for regulatory measures.

06

Data-Driven Digital Transformation

Data-Driven Digital Transformation

While banks were the go-to institutions for everyday financial needs until a few years ago, in 2023, the spotlight quickly shifted to FinTechs due to their exponential rise in recent years. FinTechs may not be a challenger for banks yet; they are however becoming competitors in many aspects. To that effect, banks must smell the coffee and improve themselves, given **data is pivotal for success** in this day and age.

Banks offer a whole suite of products and solutions as compared to FinTechs, which only provide specialized services. While this is a big advantage, it remains untapped as various departments in the bank work in silos. Data should be available to all departments in the bank in order to derive customer insights and ensure real-time decision-making. The [Digital Banking Report 2021 survey of financial institutions](#) found that several banks are stuck with **too many disconnected data sources and systems.**[25] Only a small fraction has an organization-wide central data platform to collect, process, analyze, and deploy insights. Until banks **establish a data-driven culture,** they cannot achieve increased revenue generation, cost reduction and the application of insights for improved customer experience.

Banks must quickly undertake **data-driven digital transformation** to customer experiences that are more personalized and valuable. Luckily, banks have a huge treasure trove of customer data, which is a

priceless resource. **But data isn't useful unless it is utilized properly** with the right tools. CDP can help banks realize their true potential and give them a chance to compete with FinTechs and other rivals.

What is CDP?

Customer Data Platform is a **unified and persistent database that is accessible to other systems in the organization.** It is a platform that comprises prebuilt components and data models that help marketers and other business stakeholders segment, analyze, activate, and share their data with no involvement by the technology team.

As per Gartner, the CDP market is estimated to **grow at a CAGR of 34%** between 2022 and 2027.[26] Gartner also predicted that up to 70% of independent CDP vendors will either be acquired or venture into other areas like personalization, consent management, multichannel marketing, and master data management. The size of

the global Customer Data Platform market is expected to reach **USD 14.84 billion by 2028** up from USD 2.67 billion, as per The Insight Partners.[27]

Banks already have Customer Relationship Management (CRM) tools and automated marketing applications as part of their operations. However, CRMs are based on decades old technology that just records and collates sales, transactional, and customers' personal data. This data is mainly used by customer service teams to provide a better experience, and isn't very useful for those in marketing and sales as it doesn't possess superior intelligence. **CRMs were never designed for sharing data** – they lack the ability to bring data into a single environment where AI can process it to study customer behavior from multiple touchpoints and make predictions. Even the best marketing tools cannot help bank marketers if the data profiles are not complete, resulting in **poor targeting and wasted ad spend.**

Data Management Platform (DMP) is another solution that tracks user behavior across various sites on the internet and builds a customer profile based on browsing and buying patterns through the use of third party cookies. It then segments each of these users into different buckets. DMP doesn't store personal info; It supports data ingestion of first party data, which is hashed, anonymized, and aggregated. Brand marketing teams share their requirement (age, type, income etc) to the DMP vendor who then runs ads across various partner websites.

CDP, on the other hand, makes banks better marketers by giving customers exactly what they want. CDP allows brands to track customers' and visitors' behavior on their website and app and tries to build rich profiles of customers (primarily driven by first party data and further enhanced by third party data) and offers intelligence and capabilities for better customer retention to rework on new customer acquisition strategies.

Customers interact with banks through various channels like website, chat, mobile apps, contact center, physical branches etc. as per their convenience. No matter which channel they engage with the bank, it is important to assist them throughout the journey, and make it frictionless. For that, banks need to organize all their data around customers which will help them **improve the customer experience (CX).** CDP can be implemented by banks to **ingest and stitch prospect and customer data together** from various sources, and normalize and **build unique and unified profiles of each customer.** Data management, data compliance, marketing campaign management, analytics, and third party integration are the main capabilities of CDP. An example of CDP is that if existing customers apply for a credit card, the required details for KYC could be pulled instantly from the bank's CDP, instead of collecting them again. Another example is that loans could be approved within minutes based on the customer's behavioral history and assets.
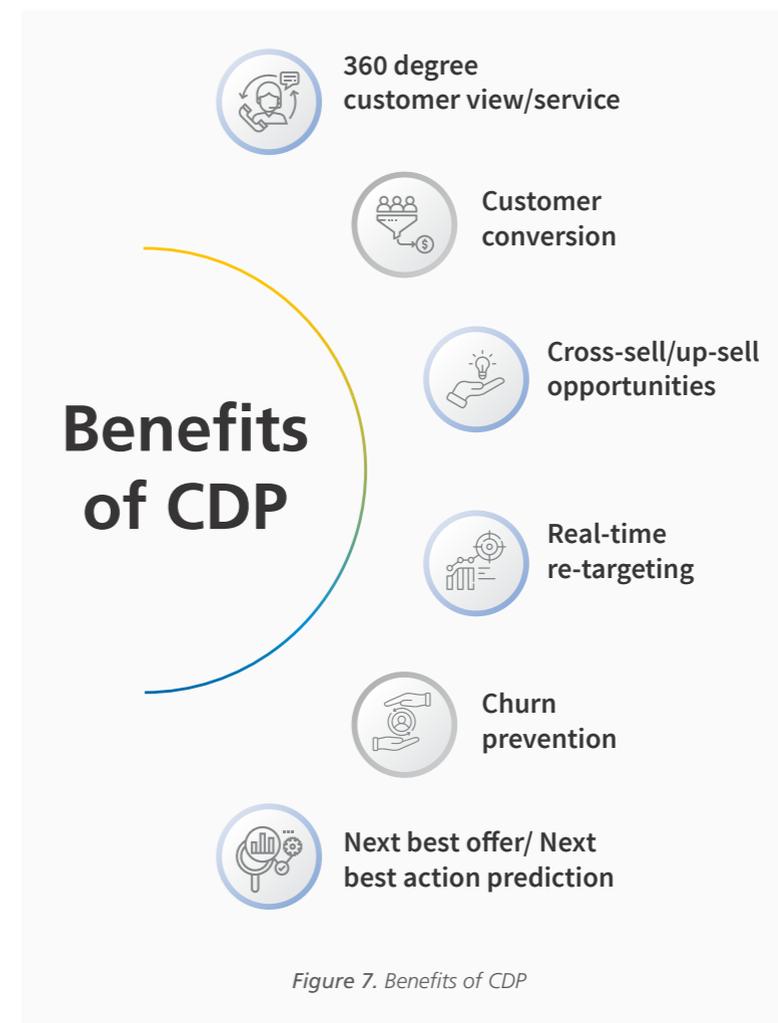
How it works and what are its business benefits?

Firstly, data is cleaned, duplicates are removed, and **a golden customer record** is created that continuously integrates the best attributes from primary sources like CRM and back-office transactional data. **It is then enhanced and enriched by third party sources** for accurate, latest, and complete datasets and profile elements. **This data is leveraged to analyze the customer's behavior,** segment them intelligently and predict the intent and context. CDP offers a **comprehensive set of inbuilt connectors** to integrate CRM, and back-end, AdTech, MarTech, and analytical applications, which helps transition prospects/ visitors to known customers quickly. Using a unified customer profile, **CDP delivers contextual and personalized interactions in real-time in all channels across departments.**

While CDPs were mostly implemented by large banks, after realizing its value, even small and mid-size FIs are now using them. Integrating a CDP into a bank gives marketers the ability to leverage unified customer data to gain insights, **develop real-time tailored marketing campaigns and improve customer acquisition, and increase net promoter scores and conversion rates.** CDP offers a **360-degree view** and ability to service the customer comprehensively. It offers **advanced audience segmentation capabilities** that involve segmenting customers into groups based on common characteristics.

CDP provides **cross-sell/up-sell opportunities,** which help banks increase their sales revenue. It helps banks perform **real-time retargeting of abandoned applications/prospects** and provide customers with **personalized next best offers/next best action recommendations using predictive analytics**. Banks are infamous for departmentalization of information for security reasons. CDP helps banks overcome this by letting data flow more safely and securely between departments, thus offering a seamless customer experience.

Data privacy regulations like GDPR, CCPA and CPRA are requirements that CDPs must comply with. Customers need to have control over what data is being collected about them, consent, how the data is going to be processed, and the option to opt-out or delete the data. CDPs allow banks to adapt all **governance and security regulations** with complete control over data access, storage, visibility and sharing.

Benefits of CDP

- 360 degree customer view/service
- Customer conversion
- Cross-sell/up-sell opportunities
- Real-time re-targeting
- Churn prevention
- Next best offer/ Next best action prediction

Figure 7. Benefits of CDP

Way Forward

By not being able to identify their customers correctly, banks are missing out on many opportunities. Even if they are, banks aren't able to connect the dots due to data silos. One example of flawed data use is when a bank keeps sending marketing messages to a customer to download an app that is already in use. CDP promises to provide solutions to such problems.

However, there are certain challenges associated with CDP. Many banks using CDPs are not fully optimized as they are stuck with legacy core banking applications, which are not well suited for mobile-based, omnichannel, and real-time interactions involving vast data. However, in the next five years, many banks are expected to modernize their core banking systems, which will help them tap into CDP's true potential. For instance, a multinational has implemented CDP in its organization, resulting in 12% incremental revenue from a single campaign. It also reduced their time to deploy personalization by 85% and resulted in USD 3 million in incremental profits.[28]

A modern core system combined with cloud technology and CDP can derive insights from every stage of the customer journey, from their spending patterns to transaction history, and create a constantly evolving customer account profile that can be used to provide a total Customer Experience (CX).

Key Takeaways

In order to stay ahead of the curve and compete with FinTechs and other rivals, banks need to consider implementing CDP, which enables them to consolidate data into a single repository, gain insights into the customer and make predictions/recommendations with AI. CDPs help banks in customer acquisition, increasing marketing conversion rates, ensuring cross-sell and up-sell opportunities, churning prevention, compliance, etc.

07

Shift of Core Functions to Cloud

Shift of Core Functions to Cloud

Traditional core systems used in retail and commercial banking are stiff and archaic, which is one of the primary reasons for the lack of innovation in financial services. Complex technologies and high expenses usually impede banks' ability to deliver novel products to the market. As a result, consumers are being deprived of the level of service or offerings that they might reasonably expect from a financial institution.

However, new challengers are creating significant traction in customer adoption because they can innovate and are not burdened by legacy systems. Inspired by them, many banks have already embarked on some level of digital transformation, mostly limited to digitized channel access through apps & online banking and a few internal and external processes. Adoption of cloud-native core banking is becoming popular as it is a great way to reap the long-term benefits of digital transformation.

Cloud-native computing is a software development approach that makes use of cloud computing to build and run scalable applications in modern, dynamic environments. A cloud-native application is designed specifically to be developed and managed within a **cloud environment.** This architectural approach frequently uses immutable infrastructure, declarative code deployment, cloud-native

processors, containers, microservices, serverless functions, and other technologies. These strategies assist the system in becoming more **resilient and manageable.**

This is a suite of **retail and commercial banking products hosted on the cloud,** with the ability to store, categorize, and analyze banking data and transactions using **cloud-native computing** and other advanced technologies. Cloud-native core banking typically has a pay-per-use subscription model and provides subscribers with an endless array of possibilities by enabling them to make seamless transactions and provide their end consumers with a more pleasant user experience. Cloud-based core banking is steadily stealing the spotlight from legacy banking systems as it speeds up application delivery, reduces time-to-market, and satisfies consumer expectations for speed and agility.

Cloud-based infrastructure provides **increased processing power and scalability** and is designed for **agility**, making it simple to scale up or down as needed. The shift to a cloud-based pay-as-you-go model results in **lower operational costs** for banks. This eliminates the expenses associated with developing, purchasing, and maintaining their own servers and systems, which was necessary with legacy systems. Cloud-based architecture allows **better control of data**, making it easier to accurately detect threats such as money laundering. Additionally, the use of open banking architectures allows banks to **easily collaborate** with FinTechs for a better banking experience. Cloud-native applications provide fast updates and **minimum downtime** by using microservices, thus ensuring that faults and defects are handled quickly.

In general, while cloud providers offer **robust security measures** to protect data and applications – infrastructure and data security, vendor and cloud provider dependency, and compliance must be considered. Encrypting data, providing restricted access and monitoring, and ensuring due diligence on vendors and cloud providers is essential. The security of a cloud-native core banking system solely depends on its implementation and management.

Approach to Move Core Banking to Cloud-Native

Banks and FIs are increasingly exploring the option of moving their core banking systems to cloud-native platforms. This involves a comprehensive transformation of their existing systems, applications, and processes to take full advantage of cloud-based technology. The industry-adopted approach to core banking migration typically involves the following steps –

Cloud readiness assessment
Evaluating a bank's technology stack, application architecture, data management capabilities, and security requirements

Cloud platform selection
Select the most appropriate cloud platform and service provider that aligns with the bank's requirements

Application refactoring
Comprehensive review of the application architecture, identifying dependencies and performance issues, and rewriting code

Data migration
Migrate data from legacy systems to the cloud, ensuring data integrity, confidentiality, and availability

Testing and deployment
Conduct extensive testing to ensure that it meets their functional and non-functional requirements. After testing, the new system is deployed in production

Figure 8. Industry-adopted Approach to Move Core Banking to Cloud Native

For example, DBS Bank, a leading bank in Asia, has adopted a cloud-native approach to transform its core banking system. DBS partnered with **Pivotal**, a cloud-native service provider, to develop a new digital banking solution that is based on microservices architecture and runs on the Pivotal Cloud Foundry platform. The new platform has enabled DBS to significantly reduce its time-to-market for new products and services, improve its customer experience, and increase its operational efficiency.[29]

Critical considerations during a cloud migration journey include security, data loss, compliance, performance, and costs. Therefore, great caution is required to ensure a successful transition. It is important to have a robust security plan in place, backup all critical data, comply with all applicable regulations, manage performance expectations, and carefully evaluate costs.

Another challenge in cloud migration is **vendor/cloud provider dependency**, which refers to a company's reliance on a vendor or cloud provider for the security, stability, and other functioning of their services. Conducting due research on the vendor and cloud provider, maintaining maximum data portability, and contemplating a multi-cloud or hybrid cloud strategy are some strategies to avoid this risk. Considering these elements and proper planning can help mitigate such risks and ensure a successful cloud migration journey.

Way Forward

According to a recent study, banks globally may save **USD 246.1 billion** by running a cloud-native core over five years, leading to a **76% reduction in core spend and 15% savings in total IT costs**.[30] As per another survey, banks will inevitably move their core functions to the cloud sooner or later. For banks already on their cloud journey, it shows that **82%** of them plan to have at least half of their legacy workloads in the cloud 10 years from now, and **31%** of them have already reached that stage.[31]

Many new entrants into financial services companies like Chime, Razorpay, Niyo etc. are offering innovative, and cost-effective products and services to customers, which is otherwise challenging for traditional banks to propose due to their legacy IT systems and complex infrastructure. Such competitive challenges from new entrants also drive other traditional banks to adopt cloud faster. Many regulatory and risk challenges have already been overcome by cloud and SaaS suppliers, allowing banks to transfer their core banking with great confidence. Due to this, the BFSI industry is observing a steady and significant increase in the adoption of cloud-native architectures by banks and FinTechs through strategic partnerships with modern core banking providers.

Key Takeaways

Some banks are staying away from cloud and have built their own private data centers to house applications and systems. While this approach provides more control and security, there are numerous potential issues that they may face. For example, higher the expense of running a private data center, the more difficult it is to scale up infrastructure as the firm grows. These banks may experience difficulties in keeping up with the pace of innovation and addressing client demand for more digital services in the near future. Bankers see the long-term benefits of cloud adoption and want to maintain or enhance their investment in it.

Cloud infrastructure has been adopted nearly universally because it enables access to mission-critical infrastructure while eliminating the overheads associated with on-premises hosting. Cloud technology is expected to be the dominant option for banks looking to innovate and extend their operations while minimizing risk, time, and expense. The financial services industry has an exciting opportunity to leverage the immense potential of cloud technology, despite the initial challenges involved in transforming traditional legacy systems. As cloud technology continues to evolve and improve, it can become a powerful mainstay for the industry, ushering in a new era of innovation and growth.

08

**Evolving Digital
Lending Landscape**

Evolving Digital Lending Landscape

Amidst the pandemic, millions of individuals worldwide have resorted to utilizing their savings and retirement funds to cover essential expenses, while nearly 250 million people have lost their jobs. In these circumstances, digital lending has emerged as a lifeline for the unemployed. Financial institutions have responded by increasing their use of innovative technologies to facilitate remote borrowing by consumers and organizations alike.
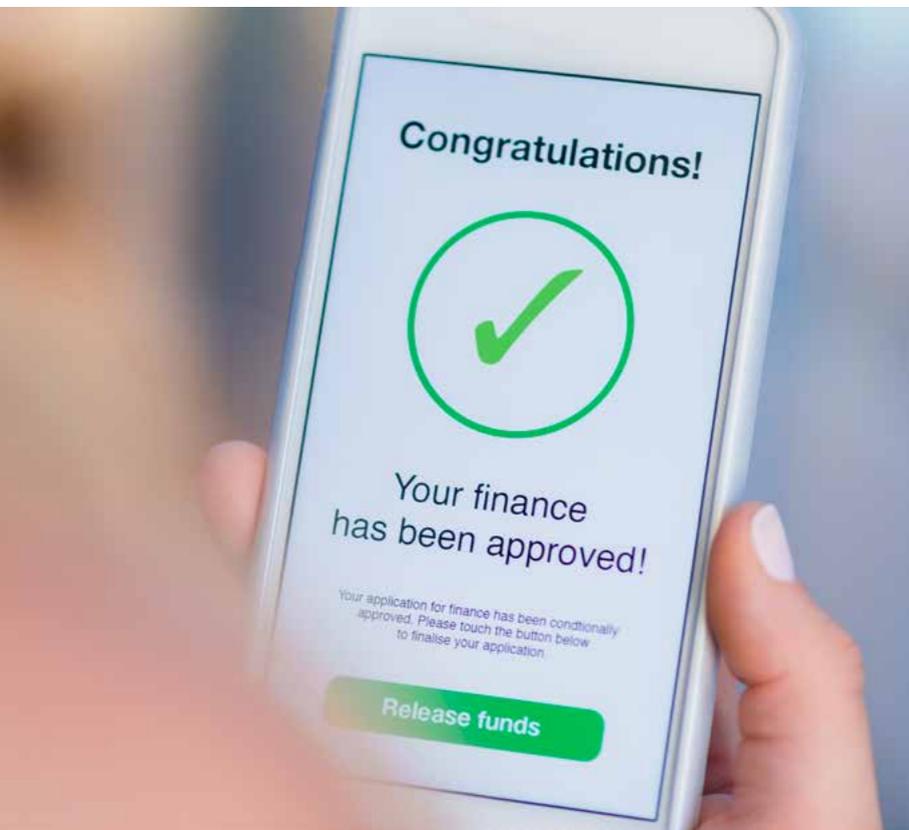
Digital lending companies aim to facilitate their customers by offering quick and more seamless response times, an end-to-end and consistent lending experience, less complicated applications, and enhanced tailored products like omnichannel experience, state-of-the-art chatbots etc. For this, they have modernized their software, and provided one-stop solutions, integrated analytics, actionable insights, and digital customers (a consumer who engages with businesses or brands through digital channels such as websites, social media, mobile apps, email, and messaging platforms). Thus, the financial industry reached a tipping point in 2022, which will drastically change the landscape for the next 10 years.

Digital lending is a remote and automated lending process that uses integrated technology, primarily for client acquisition, credit assessment, loan approval, distribution, recovery, and associated customer support. Consumers, businesses, regulators, competitors, and credit risks are the forces behind the evolution of lending into a digital industry.

Digital lending begins with an internet application for a loan from the bank and finishes with an automated method for issuance. Events in a customer lifecycle, such as marketing, presales, origination, onboarding, monitoring and service, and collections are the main areas to ensure better customer experience in this lending value chain – by carrying out various tasks like filling an application form, document capture, electronic signature, credit analysis, loan administration, and other capabilities.

The digital lending platform market was valued at USD 4.87 billion in 2020, according to Grand View Research. The market is expected to grow at an average rate of 24% annually through 2028.[32]

Earlier, the loan application procedure used to be cumbersome and time-consuming. Forms had to be filled out meticulously, and lending companies had lengthy approval processes that took weeks - Not to mention the fact that most individuals lacked credit, preventing them from accessing suitable financial solutions.

The breakthrough in lending is being driven by technology. Today's advanced technologies and digitalization are laying the groundwork for a consumer-friendly digital lending environment. The digital lending business is undergoing a transition, from process simplification to secure architecture.

AI and machine learning (ML) have revolutionized the core lending process for consumers. Previously, lenders used to follow FICO scores and income statements to determine credit worthiness. Now, organizations have the capability to monitor the entire customer history and digital footprints. The borrower's social media profile, online activity, level of education, wallet usage statistics, and bill payments are scrutinized using artificial intelligence and machine learning. Lenders can evaluate an applicant's **credit worthiness** with these data points and credit scores, which is supplied to an analytics platform.

Making unbiased and accurate **credit decisions** in no time is possible with AI/ML, which can instantly evaluate enormous data sets and provide crucial insights about the customer. Organizations have begun leveraging alternative data sources, such as e-commerce sites like Amazon, PayPal, and eBay; cloud accounting data from Xero; and banking transaction records via APIs from financial data aggregators like Yodlee and Finicity, to streamline the credit decision.

Communication channels i.e., Voice AI and chatbots, powered by **Deep Learning (DP) & Natural Language Processing (NLP),** enable employees to avoid lengthy customer interactions and provide them with contextual responses based on information from customer accounts, demographics, social media interactions, and past data.

An upgraded **Early Warning System (EWS),** coupled with technologies like analytics, data modelling, AI, and ML, can monitor the behavioral patterns of borrowers in real-time and pick up the events indicating distress signs or behavioral patterns indicating an eagerness to repay loans. The data from these occurrences is used to mitigate risks through AI/ML-based analytics to generate warning signals, allowing the borrower to be labelled as a Red Flagged Account, for instance.

Robotic Process Automation (RPA) has been able to overcome the industry's long-standing issues by providing quicker and hassle-free access to loans. By adopting RPA, a large number of cutting-edge online lending platforms have accelerated their customer services i.e., credit analysis, loan approval, risk management, making reports, supervision, and other time-consuming tasks for an improved customer experience.

By 2025, according to American Bankers' Association's estimation, RPA may help banks save up to USD 70 billion.[33]

Application Programming Interface (API) gives the flexibility to digital lenders to adopt and adjust their products and services based on ever-changing client demands by accessing data from any third party vendor, including public and private organizations. To speed up the digital lending process, financial institutions link APIs with services such as adding in pre-filled information for KYC on the applicant's mobile phone collecting data from different sources for credit underwriting, tracking fraud at the time of application, and other services.

For example, fingerprint verification and facial recognition are two common **biometric identity verification techniques** used for the KYC process. Customers may be certain that their personal financial information is secure because it is hard for fraudsters to fabricate such data.

According to Statista, the market for biometrics systems will nearly double by 2025 compared to 2020, from USD 36.6 to USD 68.6 billion.[34]

The lending business has greatly benefited from **cloud computing.** Besides disruptive technologies like AI, ML, Deep Learning, Big Data, etc., **cloud storage** gives the extra mileage to lenders to stay ahead of competition. Digital lending platforms have the ability to centralize data access, which eases the loan documentation process and fosters transparency among different stakeholders, including lenders, investors, and regulators.

Banking and financial services invest more than USD 67 billion annually on cloud services, motivated by the fact that clients now generate 2.5 quintillion bytes of data daily.[35]
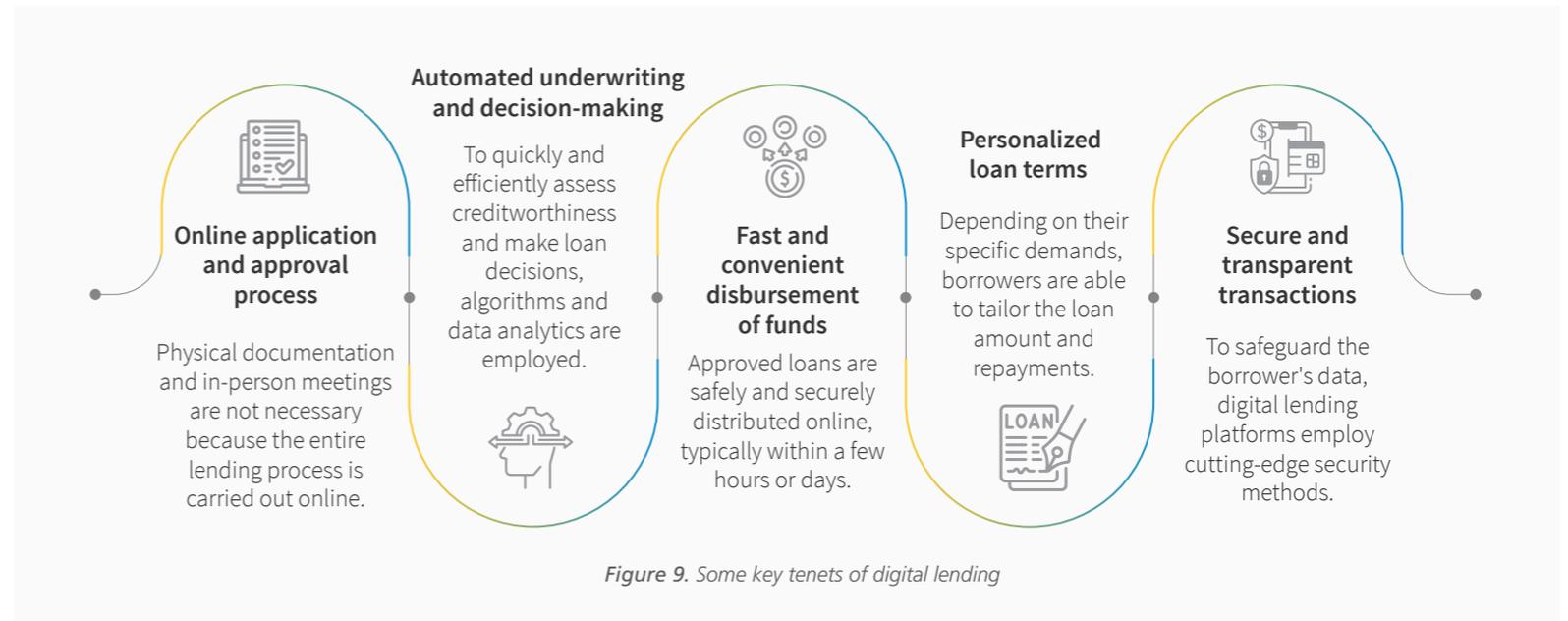
Online application and approval process

Physical documentation and in-person meetings are not necessary because the entire lending process is carried out online.

Automated underwriting and decision-making

To quickly and efficiently assess creditworthiness and make loan decisions, algorithms and data analytics are employed.

Fast and convenient disbursement of funds

Approved loans are safely and securely distributed online, typically within a few hours or days.

Personalized loan terms

Depending on their specific demands, borrowers are able to tailor the loan amount and repayments.

Secure and transparent transactions

To safeguard the borrower's data, digital lending platforms employ cutting-edge security methods.

Figure 9. Some key tenets of digital lending

According to researchandmarkets.com, the global digital lending platform market size is expected to reach USD 26.08 billion by 2028, registering a CAGR of 24.0% from 2021 to 2028.[36]

Way Forward

To be competitive, big players & FinTechs will continue investing in cutting-edge technologies like edge computing, gamification, IoT, green technologies, quantum computing, sophisticated chatbots, virtual reality, etc.

DeFi (Decentralized Finance) – Decentralized peer-to-peer lending over the blockchain enables borrowers and lenders to easily connect in a lending marketplace. Consequently, the whole lending process—including its origination, fulfillment, settlement, and servicing—becomes far more effective and trackable.

The financial services industry is working on climate risk assessment by leveraging **'Climate FinTechs'** — to address the challenges caused by the climate catastrophe in the APAC region. Financial institutions are using software-as-a-service cloud-based platforms to geospatially map particular loans to specific climatic risks.

The **Commercial-Off-The-Shelf (COTS)** software for digital lending often contains capabilities such as loan origination, underwriting, servicing, and collections. Finastra, Temenos, nCino, Mambu, and LoanPro are a few digital lending COTS providers. These commercially available technologies can assist financial institutions and lending organizations in streamlining their lending procedures, automating underwriting and decision-making, lowering operating costs, and enhancing customer experience.
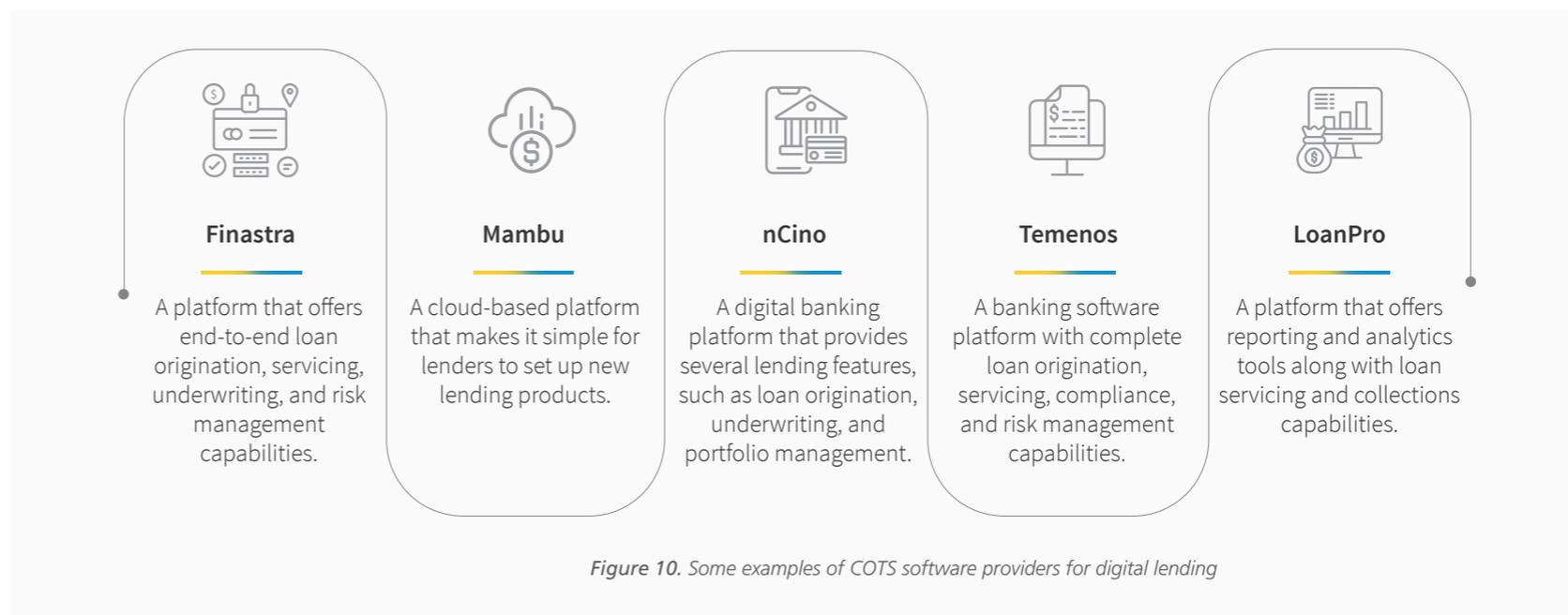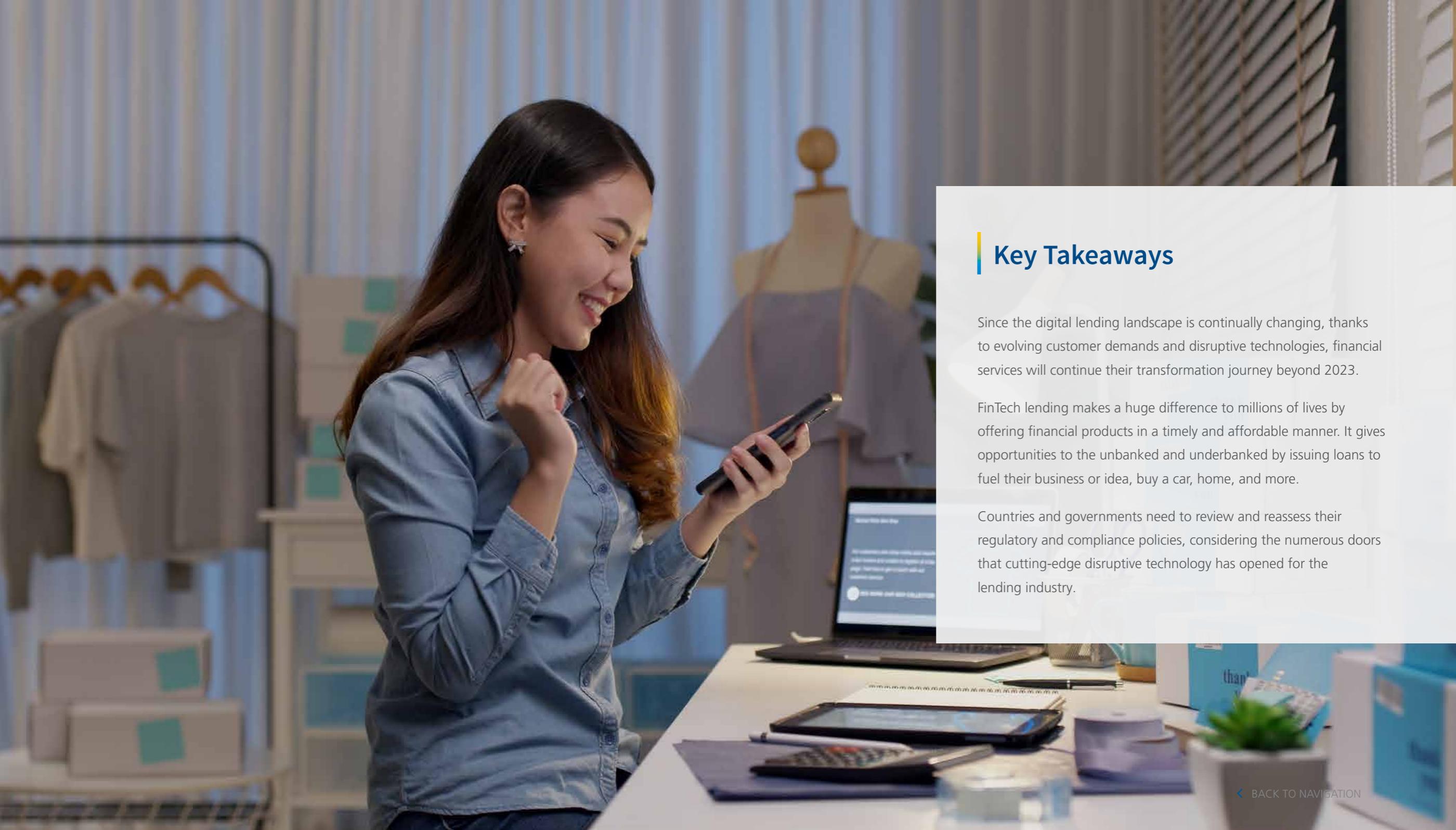

Finastra

A platform that offers end-to-end loan origination, servicing, underwriting, and risk management capabilities.

Mambu

A cloud-based platform that makes it simple for lenders to set up new lending products.

nCino

A digital banking platform that provides several lending features, such as loan origination, underwriting, and portfolio management.

Temenos

A banking software platform with complete loan origination, servicing, compliance, and risk management capabilities.

LoanPro

A platform that offers reporting and analytics tools along with loan servicing and collections capabilities.

Figure 10. Some examples of COTS software providers for digital lending

Key Takeaways

Since the digital lending landscape is continually changing, thanks to evolving customer demands and disruptive technologies, financial services will continue their transformation journey beyond 2023.

FinTech lending makes a huge difference to millions of lives by offering financial products in a timely and affordable manner. It gives opportunities to the unbanked and underbanked by issuing loans to fuel their business or idea, buy a car, home, and more.

Countries and governments need to review and reassess their regulatory and compliance policies, considering the numerous doors that cutting-edge disruptive technology has opened for the lending industry.

09

Era of Virtualization

Era of Virtualization

Evolution of Virtual Cards

A couple of decades ago, cash was the defacto king. Then, we saw the rise of physical cards, which became the standard. The latest payment market trend is electronic virtual cards, which come with their own number, CVV, and validity details. They can be used for online transactions like regular credit /debit cards. According to Allied Market Research[37], the virtual cards market size was valued at USD 281.22 billion in 2021 and is estimated to reach USD 1,893.08 billion by 2031, growing at a CAGR of 21.3% from 2022 to 2031.

Virtual cards were borne out of the requirement to eliminate the time lag between signing up for a card and receiving it. They are the quickest means for card issuers to garner the top-of-the-wallet spot. In today's day and age, users need instant solutions, failing which, they look at different options.

Impact on Banking & B2B

Considers a simple use case that appreciates the true power of virtual cards. A cardholder on a business trip loses their physical card. Getting a replacement card will take nothing less than a couple of days because the card needs to be printed and shipped, which severely impacts the cardholder's ability to make necessary purchases

like food and transport. With a virtual card, the cardholder can immediately resume spending without hassle. This instant usage characteristic propels users to shift to banks that provide this facility.

Most bigger banks have shifted to virtual cards because they have enough capital to develop such solutions. Seeing the success and popularity among users, tier 2 banks have sprung into action and are investing in these solutions. Banks across the world are undergoing digital transformation to stay relevant, and virtual cards are playing a pivotal role.

The major advantage of virtual cards is the ease of access and utilization. Not to forget that it is cheaper than traditional physical

cards and offers added security benefits by virtue of it being an e-card, so there is no scope of cloning. Virtual cards score high on ESG rating, which is an another positive for banks to adopt them. Additionally, they can be integrated with mobile wallets to work seamlessly with contactless payments, thus enhancing the convenience for customers.

The B2B payments sector is one domain that has seen a paradigm shift with the introduction of virtual cards. For way too long, businesses relied on check processing for vendor payments, which involved a lot of manual efforts. A study by APF estimates a cost of USD 5 to pay a supplier via check.[38] Businesses were already moving away from checks, albeit slowly – without any sense of urgency. All this changed when the pandemic resulted in lockdowns everywhere. Managing payables and receivables was a nightmare with staff stuck at home. Business leaders were quick to realize that the current paper-intensive process was not sustainable and started looking for better digital alternatives – and in came virtual cards. Virtual cards serve as a proxy to traditional cards or checks and give businesses additional security while removing the hassles of cash payments. Here is a summary of benefits of virtual cards in the commercial payments space.

Efficiency & Cost

The manual process of keying payment details into an ERP system, handling checks (printing, packing, mailing), and invoice reconciliation involves lot of labor, time, and money. Virtual cards can digitize this, making it easier to track invoice payments. It frees up the employees to work on tasks that add value to the business.

Security

According to NACHA, the most targeted payment method within commercial payments is checks.[39] Virtual cards can be configured to expire when the payment is completed, or a specified time is reached, lowering the risk of misuse and fraud.

Faster payments

Payments to suppliers' accounts can be done much faster. Check payments used to take days and hence, suppliers prefer virtual cards. Faster payments optimize the working capital and strengthens the relationship with vendors/suppliers.

Evolution Of Virtual Accounts

One of the many functions performed by banks is that of transaction banking, which is the business of helping corporates manage their cash and payment transactions effectively. The traditional approach uses **multiple deposit accounts**, each maintaining and reporting the cash of a specific group or legal entity. This technique relies on **sweeping and pooling** to consolidate cash through numerous bank

Seamless Integration

Single Centralized Account

Virtual Account Management

Automated Solutions

Enhanced Reporting & Reconciliaton

account transactions. As the business grows, cash gets dispersed across various subsidiary bank accounts. Corporates invariably have a complex account architecture to support various reporting and regulatory requirements. Cash concentration in such an environment is costly and time-consuming with a lot of manual reconciliation effort, thereby affecting working capital utilization. **Virtualization of accounts is the next gen solution, which allows for immediate**

liquidity concentration, thus eliminating the need for physical sweeps – resulting in cost savings. Virtual accounts help segregate specific account activity, allowing for easier reporting and accounting for cash management.

Benefits of Virtual Accounts

Virtual accounts enable a very lean and a smart treasury management function, allowing treasurers to work on strategic activities while streamlining and automating time-consuming tasks. Virtual accounts benefit in three significant ways.

Account rationalization

Virtual accounts eliminate the need for corporates to maintain multiple accounts to manage cash across business functions and legal entities. This translates to easier administration of accounts.

Liquidity management

Virtual accounts enable treasuries to centralize cash without the need for complex sweeping structures, providing better funds availability, optimized account balances, and effective cash forecasting.

Reporting

Virtual accounts can be configured as per the reporting needs of the organization. It can track and report cash at granular levels like ZIP code etc.

Way Forward

The momentum seen in the virtual cards domain is likely to remain strong, owing to underlying factors such as adoption of digital transformation, and cost and convenience benefits it brings to the business. The growth in the virtual cards market will be driven by banks implementing the solution and businesses moving away from check to B2B payments. Recent research indicates that the worldwide value of B2B virtual card transactions will jump from USD 1.9 trillion in 2021 to USD 6.8 trillion in 2026[40], underlining the method's growing importance for B2B transactions. Advancement in virtual accounts will be led by the overhaul of the bank's treasury management function. For instance, JPMC's virtual account management solution has resulted in reduction of physical accounts by 50% and an efficient liquidity management for a Singapore multinational.[41] If the past is an indication, the **future of virtualization has never looked brighter.**

Key Takeaways

There is no doubt that the **era of virtualization** has begun, and technological advancements are blurring the line between the physical and virtual worlds. Customers today need services and solutions that are instant, and that is where being physical has its limitation. Businesses have been quick to realize this and have started the virtual transition. Supporting this transition are various FinTech firms that develop solutions to support virtualization. For example, Pagero has an automated account payable solution, which is a market leader. Big banks like JPMC and Goldman Sachs have the first mover advantage in the virtual account management space and their solutions have been implemented in various other organizations all over the world.

10
Cloud Acceptance for a Futuristic Experience

Cloud Acceptance for a Futuristic Experience

Evolution

While there has been rapid and exponential growth in digital payments, the Point of Sale (POS) process hasn't kept up with the pace of innovation. Though there has been significant innovation on the buyer's side, i.e., payment methods, very little has happened on the seller's side, i.e., payment acceptance. With the advent of the cloud, the notion of payment acceptance being a laggard will change, and it will be the **dawn of a new era in POS devices.** Banks and FIs, in the recent past, have moved their solutions to the cloud because of the cost advantages and scale benefits it brings in. According to a report by Imperva, 46% of on-premise databases are vulnerable to attacks, another reason organizations adopt cloud-based systems.[42] It is now just a matter of time before the acceptance part of the process will also move to the cloud.

New cloud technologies will democratize the process of payment acceptance for sellers by lowering costs and streamlining certifications. For decades, payment processing software was embedded in hardware devices. Cloud acceptance will ensure that the payment software is universally accessible. This is aptly being called as moving the **'brains'** to cloud. Here are some of the drawbacks of payment software when it is embedded in a hardware device.

- The device becomes expensive because of the need to house specialized components for the payment software. An average business spends USD 1000 on POS.[43]

- Any update to the underlying software becomes a cumbersome exercise.

- With the payment software embedded in the POS device, sellers must still worry about compliance and certifications.

To overcome these limitations, cloud acceptance is the way forward, given that it is bound to bring a revolutionary change to the payment acceptance landscape, benefiting both retail and commercial businesses. Summarized below are some of the additional benefits of cloud.

- It makes payment acceptance available on any digital device and not just on POS terminal/phones.

- Instead of spending money on high-end POS devices, merchants can opt for low-cost digital equipment and leverage cloud to accept payments.

- It makes it easier for third parties to integrate the payment functionality.

- In addition to payment acceptance, it can incorporate fraud management, advanced data analytics, BNPL, merchant on-boarding services etc.

- It takes away the load of data security management, since no sensitive information is handled on site.

A research study by Facts & Factors estimates that USD 70 billion is spent each year on hardware by banks and merchants globally to keep up with payment innovations and accept new form factors such as contactless etc.[44] Cloud acceptance aims to disrupt this market by pioneering a hardware-light, device-agnostic, low cost, easy-to-use scalable POS solution. Of all the players that adopt cloud acceptance, micro, small and medium sized business will have the maximum

benefits, given that the headwinds against them will dissipate. It will be easier and more cost-effective to accept payments and keep such solutions updated over time. One evolving trend in the payments world that may potentially benefit from the cloud payments technology is that of **CBDC (Central Bank Digital Currency).** CBDC is a form of digital currency issued by a nation's central bank. Central banks all over the world are exploring the potential benefits of CBDC, which include increasing the efficiency and safety of payments, ensuring digitization, and curbing the rising challenges posed to fiat currency by private digital assets. CBDC-related functions will have to be integrated with cloud payment technologies for users to avail its benefits.

Current Scenario

VISA has a first mover advantage here. They have announced a product called **VISA Acceptance Cloud (VAC)**, which is already live in many countries. VAC transforms almost any device into a cloud-connected payment terminal. VAC is a universal platform that helps drive the inclusion of more sellers who can now offer digital payments. It offers a streamlined and better consumer experience. Imagine tapping your card on a gym trainer's phone to pay for your monthly subscription. MagicCube is another FinTech that has come out with its own cloud acceptance solution. With traction witnessed on the usage of cloud payments and the adoption of cloud technology in general, it is just a matter of time till we see similar products from other established industry players.

Way Forward

The future looks very promising for cloud acceptance. Industry experts view cloud acceptance platforms as enablers to a deliver a futuristic payment experience. For example, a retailer leveraging cloud to provide a premium experience to customers. Or, a customer using the mirror in the changing room to pay for a dress, after which, he/ she leaving the store.

Cloud acceptance provides an advanced buying experience that is central to the prospect of all businesses. The movement to cloud opens up the possibility of so much innovation in the payment ecosystem. However, one aspect that cloud solution providers will have to continuously work on is that of data security threats. There should be a proper mechanism to ensure that sensitive payment data on the cloud is not compromised.
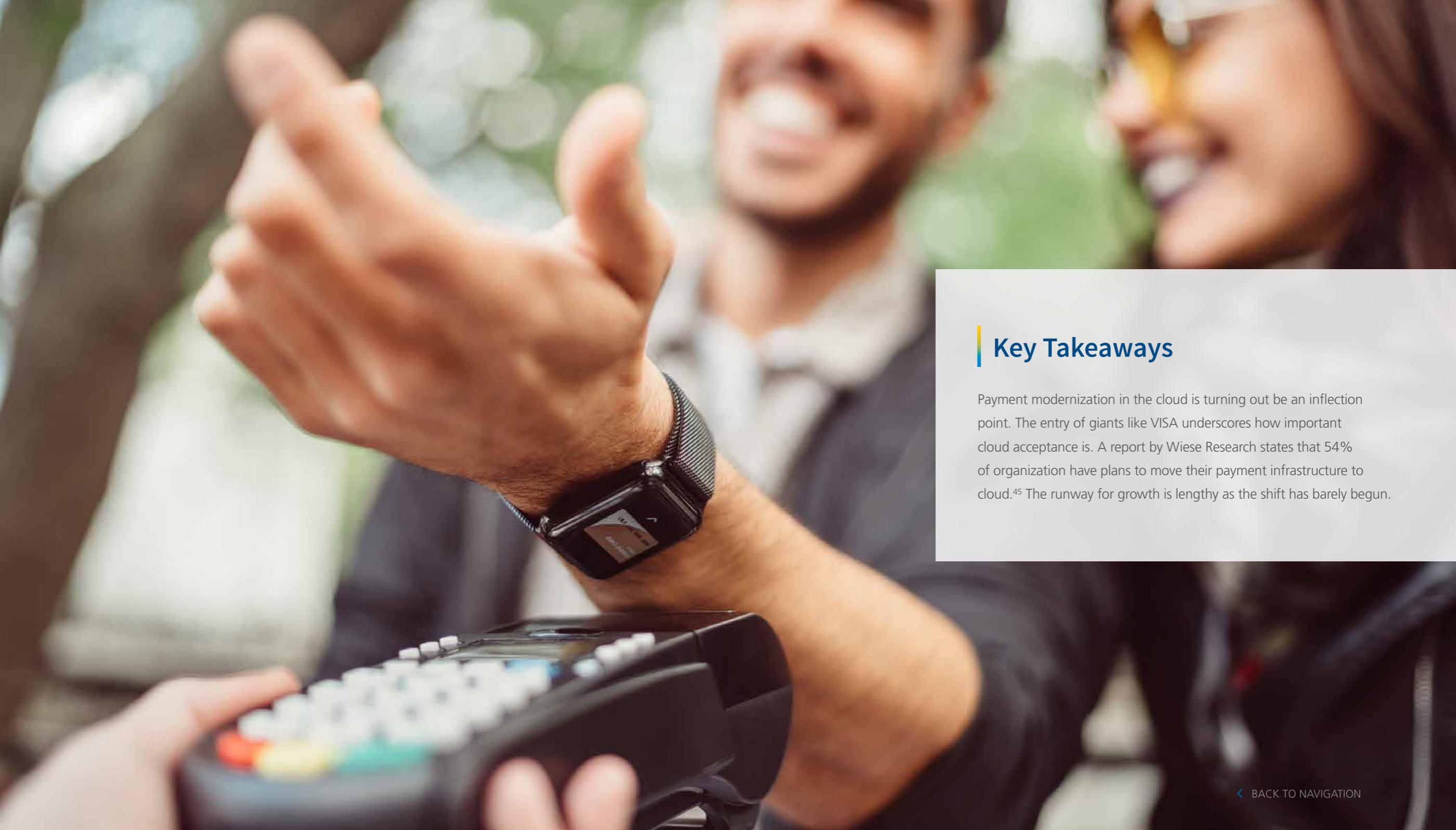
Key Takeaways

Payment modernization in the cloud is turning out be an inflection point. The entry of giants like VISA underscores how important cloud acceptance is. A report by Wiese Research states that 54% of organization have plans to move their payment infrastructure to cloud.[45] The runway for growth is lengthy as the shift has barely begun.

CONCLUSION

It is the beginning of a new era for banks, considering they are becoming customer-centric, risk-conscious, and data-driven. However, 'survival of the fittest' resonates within the banking industry. Banks with strong underlying risk management efforts and customer focus will go a long way in terms of being the preferred option with customers. The current financial year is a critical period for all banks to step up to work on the drivers of sustainable growth and strengthen the base for future-proof banking. A resilient banking ecosystem can support both meeting customer expectations and regulatory requirements in a balanced fashion. The underlying crux to both is the quantum leap in data-driven solutions and the adoption of intelligent applications. Collaboration, co-creation, and partnerships with FinTechs and product providers will be the way forward. Data has become the lifeline and fuel towards sustainable growth, with new possibilities and revenue streams for banks. Banks should identify alternative revenue streams and monetize data without compromising security. We anticipate more banks intelligently leveraging data to meet regulatory demands and build a more resilient risk management framework. Banks need to innovate to connect and engage customers by helping them in their financial wellness and enhancing their cash flow.

Banks and financial institutions will need to harness the power of AI to create extra value for their customers. Now is the time for banks to work towards building a strong base, the secret sauce to success, and strengthening their cores with firewalls to handle intense levels of risk. It is time to create a stronger base to accelerate building a resilient platform and applications by riding the sharp curve of technology adoption. Building a resilient bank starts with the trust factor; hence, customer centricity takes precedence in managing risks for sustainable banking.

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THANK YOU

We hope you found the Future of Banking: 2023 & Beyond report informative. To further explore the technologies that will shape the future of banking, we recommend you delve into our Banking and Capital Markets Technology Radar Report. This insightful report provides invaluable insights into 'Beyond-The-Horizon' technologies, empowering businesses to make faster and more intelligent decisions regarding existing and emerging technology trends. Please **click here** to access the Banking and Capital Markets Tech Radar Crystal Report – 2023.

By combining the knowledge from the Banking and Capital Markets Tech Radar Crystal Report – 2023 with the insights presented in the Future of Banking: 2023 & Beyond report, organizations can gain a comprehensive view of the present and future of banking. These reports serve as indispensable resources, enabling businesses to make well-informed decisions and shape effective strategies to navigate the future of banking confidently.

Comprehensive Report

Banking and Capital Markets Technology Radar

An LTIMindtree Crystal Report

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