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INNOVATION: DIGITAL ADVANCEMENT IN BANKING SPACE AND FINANCIAL SERVICE SECTORS

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ABSTRACT
Digitalization offers numerous opportunities as well as posing new challenges to banking services and financial services globally. Every day, banking sector witnesses at least one new innovation in some part of the world that has the potential to redefine how banking services would be offered in the coming years. The global internet penetration grew seven fold from 6.5 per cent to 43 per cent, while in India; internet penetration for individuals grew exponentially - from less than a per cent to 30 per cent. Digital disruption emerging in the banking space can not only provide more efficient channels to customers, but also help explore more cost-effective technologies for back-end operations and enhance customers' experience with unexplored value-adding services. Some of these digital initiatives were adopted a decade back and are quite mature while some are nascent technology and banks are still analyzing their viability and usability. India is catching up fast with global peers in the digital innovations space, by rapidly adopting these digital technologies. Moreover, the complexity and width of digital initiatives vary upon the infrastructure, customer preferences and policy framework of the region. Digital skill gaps, lack of user awareness and adoption, regulatory restrictions and limited infrastructural support push banks to constantly modify their digital strategy.

KEYWORDS: Internet Penetration, Digital skill gaps, Digital Innovations Space, Document Imaging Software, Digital Maturity of Payment Instruments

INTRODUCTION

Innovation has been a trademark of the banking system. Innovative spirit in recent decades in banking system led the way in developing and adapting products, services, and technology to meet the changing needs of their customers. While banks continue to innovate, rapid and dramatic advances in financial technology are beginning to disrupt the way traditional banks do business. Banking system continues fulfilling their vital role of providing financial services to consumers, businesses, and their communities. Our diverse system of banks has many advantages in developing and adapting financial innovations. Federally chartered institutions have stable funding sources, capital, and extensive customer relationships. They also have a long history of risk management that has led to enhanced information security capabilities, mature credit modeling and underwriting processes, and compliance programs that help protect consumers. These capabilities lay a foundation for innovation in the 21st century.

Innovation holds many possibilities. Technology, for example, can promote financial inclusion by expanding services to the underserved. It can provide more control and better tools for families to save, borrow, and manage their financial affairs. It can help companies and institutions scale operations efficiently to compete in the marketplace, and it can make business and consumer transactions faster and safer.

Innovation is not free from risk, but when managed appropriately, risk should not impede progress. Indeed, effective risk management is essential to responsible innovation. Banks and regulators must strike the right balance between risk and innovation.

Innovation in Banking and Financial Service sectors provide significant opportunities for Document Imaging software and hardware including document scanners as this Sector is currently paper driven and prospects are looking for ways to improve their existing manual processes. This sectors includes numerous prospects including

- Large banks,
- Community banks,
- Credit unions,
- Brokerage firms,
- Accounting firms,
- Financial investment firms, and
- Check cashing facilities.

FRAMEWORK FOR INNOVATION INITIATIVE

This framework is intended to improve and evaluates innovative products, services, and processes that require regulatory approval and identifies risks associated with them

Even when approval of an innovation is not necessary, enhancing the agency's understanding will enable it to be a more effective resource to institutions, particularly community banks and thrifts, interested in innovation. The framework also will help clarify lines of communication between the agency and the industry regarding emerging technology and new products, services, and processes.

As part of that initiative framework, a team of policy experts, examiners, lawyers, and other agency staff members to gain a better understanding of emerging technology and new approaches in financial services. To obtain a broad perspective, the team met with a variety of groups to discuss the changes in the financial services industry and the opportunities and challenges for banks to participate fully in this evolving landscape. These discussions included bankers from community, midsize, and large banks; innovators in various fields; consumer groups; academics and other regulators

DIGITAL INNOVATIONS IN FINANCIAL SERVICE SECTOR

In the digital disruption, Banking and Financial Services companies set high budgets for digital initiatives. Digitalization is an important enabler to serve the under-banked in India and abroad. In India banking services are provided using text messages to serve the people at the bottom of the pyramid of the society who don't have smart phones. Biometric authentication plays an important role in verifying the credentials. Peer-to-peer(P2P), digital lending platforms have provided SMEs and start-ups access to finance which are otherwise not catered to by banks.

Digital Maturity Assessment of Payment Technologies

Maturity score is arrived at by considering two key aspects -

1. Banks' effort to use the platform/technology.
2. Customers' willingness to adopt those platform/ technology

Instrument Name	Maturity Level	
	Global	India
Mobile banking	High	High
Social media services and analytics	High	Low
NFC# and biometrics	Medium	Medium
Digital wallets	High	Medium
P2P Lending digital platforms	High	Medium
Personal finance management	Medium	Medium
Wearable technology	Medium	Low
Cloud	Low	Low
Contextual banking	Low	Low
Block Chain	Low	Low

Source: KPMG in India's analysis based on industry discussions, 2016

#Near Field Communications

DIGITAL LANDSCAPE: HOT CAKE FOR BANKS GLOBALLY

Digital disruption is gradually changing the way of banking in past few decades. Banks are moving towards 'branchless banking' and the 'all-digital'. In digital bank, banking is moving from the physical distribution of paper in a localized network to the digital distribution of data in a globalized network. Banking players across the globe are digitizing the complete banking value chain from the back-end operations to client facing services. To provide a seamless, multi-faceted experience to their customer, banks are moving from the multichannel to the omni channel approach. They integrate disparate digital and physical channels into a unified customer journey. This helps customer complete a transaction using multiple platforms, without any hindrance. In today's world, the customers are expecting not only a chance to choose a channel to execute a transaction but also an option to switch devices/channels any time during a transaction and yet receive the same experience and service. Banking technology is taking a leap towards digital innovation. Banks constantly introduce new services and technologies to improve connectivity, automate processes and provide unexplored services to their customers. Some digital initiatives were adopted a decade back and are quite mature while some are at a nascent stage and banks are still analyzing their viability and usability.

Mobile Banking

Mobile banking is rapidly growing from transactional functionalities to experience-driven customized features. Almost every bank has a mobile banking application for more than a billion mobile banking customers across the globe. Growth in mobile banking is the highest in Asian countries. China and India record the highest banking application users at 73 and 59 per cent respectively. Whereas in Europe and the U.S., banking application users are 38 and 39 per cent respectively. Mobile banking users in the U.S. are expected to grow by 157 per cent CAGR by 2018.

Some innovative in the mobile banking space and investing in next-gen technologies like augmented reality, biometrics etc., Some Leading bank's mobile banking app provides a range of services like tap and pay; lock, block and limit payments, execute cardless transactions at their ATMs and transfer money by just bumping two phones together.

Mobile apps of a some banks provide innovative authorization process. For example, the fingerprint scanning functionality unlocks the mobile banking applications with a fingerprint scan and provides access to online banking. The number of users downloading financial applications is also increasing.

Evolution of mobile banking offerings

Some bank offers basic banking services to their customer through mobile applications whereas some offers very advance services. Basic and advanced services are categories as-

- Must-have Services-Fund Transfer and Balance inquiry
- Good-to-have Services-Managing recipients and Scheduling payments
- The Differentiator feature present in few banks that makes them stand apart from their competitors eg. Apps using Facebook connections for payments, Remote Deposit, etc.

Sl.No	Must-have Services	Good-to-have Services	The Differentiators
1	Account balance inquiry	Display net balance	Image capture for deposit and payments
2	Funds transfer	Maintain payee details	Social Media banking Apps
3	Bill payments	Future dated payments	Cloud Storage
4	Transaction history	Credit card balance display	Mobile marketing
5	Search for ATMs	Scheduling payments	Real time alerts

Source: KPMG in India's analysis based on industry discussions, 2016

Social Media Services and Analytics

The use of social media has been increasing manifold. Several banks today are connected to customers through various social media platforms. They are leveraging these platforms strategically to market their products and services, understand customer's behaviour and forecast business needs.

An average social media user spends nearly two hours and 25 minutes per day on social networks and micro blogging websites. Thus, making it a potential platform to build strong customer connections. Major Banks have Face book pages and Twitter accounts eg.

Kabbage- an online financing technology based in Atlanta, reviews loan applications leveraging social media analytics, cloud-based technology and shipping history. It looks into correlations between shipping trends or Twitter followers for loan application review.

F.Banking by Bradesco: A banking application for Bradesco customers to access account information, make money transfers, payments and mobile credit recharge, and request personal credit limit through Facebook. Some services offered by Banks over Social media are

- Brand Promotion
- Drive customer insight
- Complaint Resolution
- Financial Advice
- Payments and Fund Transfer
- Account opening
- Cross Sell

NFC and Biometrics

Banks are increasingly investing in disruptive technologies to help create a differentiator for themselves and enhance the user experience.

Near Field Communication (NFC) technology is becoming an increasingly popular mode of payment among consumers and businesses for in-store purchases. NFC is recently challenged by the upcoming technology Bluetooth Low Energy (BLE) which in addition to Payments, also includes direct marketing and proximity marketing initiatives. NFC used for low value, high-frequency transactions like bills and low-end transactions. NFC is based on radio frequency identification (RFID) technology. NFC enables Smartphone's and other devices to establish radio communication for contactless mobile payments where the card becomes redundant. Example Google Wallet allows consumers to use an NFC-enabled device at terminals that also accept Master Card transactions and ApplePay uses NFC technology in its iPhone6 to provide a secure way to pay. NFC technology successfully addresses the security aspect while having the advantage of being usable with wearable.

Biometric allows users to make balance enquiries and transfers, locate branches and ATMs, using voice commands on mobile devices. It also includes fingerprint scanning to log in for additional security measures. Biometric services help combat the threat of identity theft. The biometric identifiers leveraged by banks include: fingerprint scanning, facial recognition, voice based recognition systems, retina-based, skin-based or even mind-activity based recognition systems.

Digital Wallet

Mobile wallets are digital instruments that can store money for instant payments. It can be populated by transferring money from your bank account via credit/debit cards or net banking. Well established payment modes with presence of both the banking and non-banking players like telecoms and retailers. Users can receive loyalty points, discounts, and special offers from retailers. However, many users are not ready to give up plastic and switch to digital wallet completely yet.

P2P Lending Digital Platforms

The global unsecured retail and SME lending sector are encroached by multiple digital funding platforms under scoring the emergence of new scoring techniques and improved digitized P2P and P2B lending marketplaces. It is online marketplace that connects credit-worthy borrowers directly with the investors. Borrowers get more competitive interest when compared to the existing traditional channels. P2P platforms exist for almost a decade now with the U.K., U.S. and China as relatively mature markets. Volume of digital funding platforms almost doubles every year. User adoptability is high due to lesser turnaround time, cheaper rates, hassle free, higher returns and innovative scoring such as bitcoin P2P Lending platforms charge a single, one-time 1%-3% origination fee

Personal Finance Management

Banks are increasingly using analytics to provide spending trends, marketing and fraud prevention alerts to enhance customer engagement and loyalty, instead of just providing 'push' customer services. Wells Fargo's My Map tool is an interactive tool that provides a dashboard view of SMEs financials, expenditures and goals using data from their Wells Fargo accounts. It includes The Business Spending Report and Budget Watch tools that helps manage business

spending. Clients can access and review bar charts that show monthly spending by category, current savings and monthly spending versus budget goals.

Wearable Technology

Wearable gadgets have become popular among users for banking services, healthcare and fitness. Banks are coming up with innovative apps that can display account statements on smart glasses and enable payment transfers through smart watches. Many global BFSI companies have tested financial apps on Google Glass.

Cloud

Banks are adopting cloud technology to implement virtualized banking and leverage big data in a more cost effective manner. Cloud computing offers scalable and cheaper application portability across multiple devices instead of using in house servers and databases. The cloud is leveraged for CRM, data storage, application development, email, backend services and virtual desks. Banks are also offering cloud services to consumers as an option to store banking-related documents. The cloud is in the formative stage encompassing three-fifth of banks currently and taking a longer time to shape-up due to considerations around confidentiality, regulatory compliance and interoperability.

Contextual Banking

Contextual banking is seamless banking where financial services/offers are made at the place and time of need. The future of banking is all about context; making the right offer to the right customer at the right time. It refers to the combination of hardware, software and networks that observe, analyse and interpret human behaviours, intentions, emotions and purchase behaviour by way of creating behavioural graphs. Banks are still exploring areas where this technology can be applied. Contextual designs have gained attention after the wide spread adoption of mobile channels.

In contextual Banking, contextual marketing app uses geo-location of users to provide real-time offers. It features offers and financial tips, detects location automatically and allows business clients to make offers to individuals near the merchants' locations.

Block Chain

Blockchain is expected to revolutionise the back-end operations in the financial services sector, especially the global payment landscape. Banks and new start-ups are exploring the opportunities to leverage blockchain across various business segments – syndicated loans, trade finance, crowd-funding platforms, bonds and the private placement market. The initial phase of block chain technology adoption aimed at introducing automation in majorly paper-centric and contract-driven workflows, like clearing and settlement, transfers and trading activities.

KAY DRIVERS OF DIGITAL TRANSFORMATION FOR BANKS

The current digital universe positions customers at the centre, imposing new paradigms. Today's customers stay connected through a variety of digital platforms including the internet, social media and mobile devices. These evolving customer requirements are gradually changing the dynamics of the market and disrupting existing business models, forcing companies to re-think and re-invent their traditional business strategies and stay relevant in the marketplace.

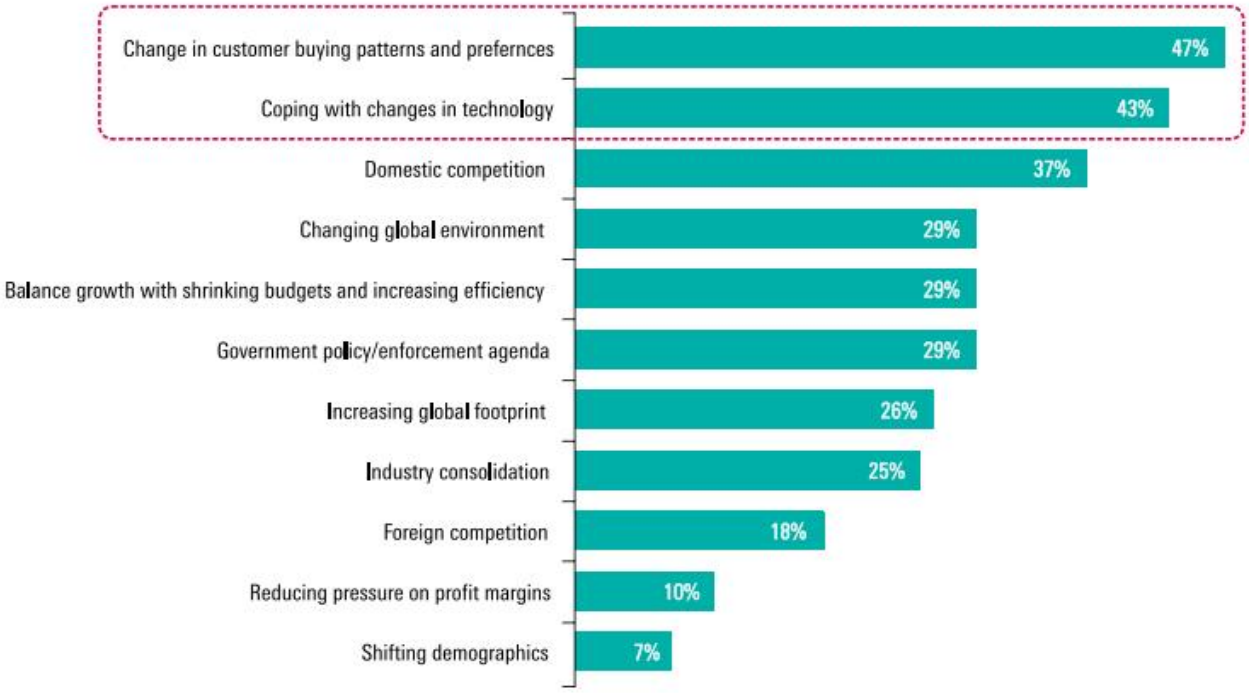

Figure 1: Kay drivers of transformation for banks

The global Banking and Financial Services Industry (BFSI) has witnessed significant disruptions, prompting players to use technology and technology-enabled platforms as main pillars of their strategies. There has been an exponential surge in banking activity as reflected in the strong growth of the worldwide. The growth has been consistently strong across different regions, pushing banks worldwide to respond with 'out of the box' measures. The regulatory policy push for financial inclusion and intense competition from existing and new players is some of the key factors contributing to the need for cost savings and cross selling among BFSI players. Banks of future shall have to adapt to these mega-trends in order to remain competitive, enhance customer experience and create value for their investors and stakeholders. Ever-changing customer demands and fast-paced technological advancements play an increasingly vital role in a bank's overall strategy. According to a survey conducted by the KPMG US in 2014, changing customer preferences and technology figure among the top drivers of transformation programmes for banks.

GLOBAL OPPORTUNITIES IN BANKING SPACE

The Banking System and financial services industry in the India is undergoing rapid technological change aimed at meeting evolving consumer and business expectations and needs. Digital disruption emerging in the banking space can not only provide more efficient channels to customers, but also explore more cost-effective technologies for back-end operations and enhance customers' experience with unexplored value-adding services. In India banks are still analyzing their viability and usability and catching up fast with global peers in the digital innovations space, by rapidly adopting these digital technologies.

Mobile payment services and mobile wallets are changing the way consumers make retail payments. New distributed ledger technology and blockchain technology has the potential to transform how transactions are processed and settled. New technology services offer the prospect of a banking relationship that exists only on a smart phone, tablet, or personal computer.

Marketplace lending has the potential to change how loans are underwritten and funded. In addition, automated systems are competing with traditional financial advisors, and crowd funding sites are raising equity capital for new and existing companies. Many of these innovations are taking place outside the banking industry, often in unregulated or lightly regulated financial technology companies.

Demographic changes also are influencing customer needs and expectations in dramatic ways. One of the most important changes in the India involves the millennial generation, which includes nearly 64%of its population by 2021. Millennials have the majority of their financial lives ahead of them, and they have demonstrated great receptivity to technical innovation in financial services.

National banks and federal savings associations are seizing the opportunities and meeting these challenges in different ways. Some are working in their own laboratories and technology incubators to develop innovative ways to improve services and make their operations more efficient. Others are combining forces through consortiums and other collaborative arrangements to share the cost of developing and acquiring new technologies. Some banks are investing in financial technology firms or new financial technology, and a growing number of banks are partnering with leading financial technology companies and start-ups to develop the applications of tomorrow

In today's financial services environment, banks and financial technology companies have different advantages when it comes to innovation. Banks have large and often loyal customer bases that contribute to diverse and stable funding that most financial technology companies do not have. Banks also have capital that enables them to deal with losses and continue serving their customers throughout the fluctuations of an economic cycle. Banks often have extensive customer information, networks of physical locations, access to the payment system, and sophisticated underwriting, modeling, and risk management capabilities. Many banks benefit from name recognition, well-established marketing functions, and enterprise-wide compliance frameworks. They also have experience operating in complex regulatory environments.

Financial technology companies and other nonbank innovators have their own advantages. Start-ups with few investors and one or two big ideas often can sometimes move faster than larger and more established organizations. They can focus their energy and resources on a single opportunity. Start-ups do not have legacy technology systems or large brick-and-mortar infrastructures that can be costly to maintain or change.

Nonbank innovators also may have specialized technical knowledge, experience, and skills with respect to emerging technology and trends. By employing their respective advantages, banks and nonbank innovators can benefit from collaboration. Through strategic and prudent collaboration, banks can gain access to new technologies, and non bank innovators can gain access to funding sources and large customer bases.

GLOBAL CHALLENGES IN DIGITAL ADOPTION

Digital adoption provides plenty of advantages to banking space and financial sector in India and globally along with some challenge also. Digital adoption is facing pressure from both external and internal forces. These challenges are mainly categories under four main heads: People, Technology, Regulatory Challenge and Data Security. These challenges are pushing banks to constantly modify their digital strategy.

People

To compete with the technological challenges, banks require employee having strong technological skill sets. The scope for technology opportunities is vast; it includes data analytics, big data, digital marketing, social media usage and analytics and customer analytics. There are medium to high digital skills gap among the banks globally. Due to a lack of strategy around digital training for up-skilling employees, banks are not able to innovate quickly and have started

facing challenges from start-ups, tech giants and other sectors. Besides there should be a mind-set among employees to escort in digital innovation in day-to-day customer service and product offerings. However, in many cases, banks are still to introduce a culture supporting innovation and digitalization.

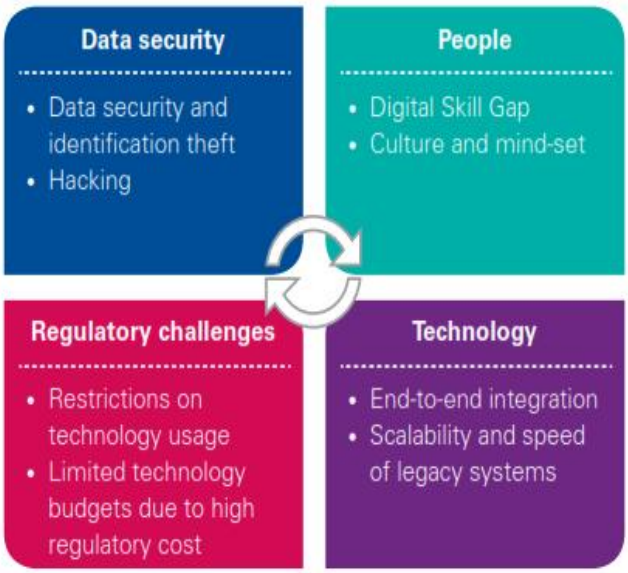

Figure2: Challenges in digital adoption
Source: KPMG in India's analysis based on industry discussions, 2016

Technology

Integration of the customer-facing digital offerings with backend operations and processes are imperative to help ensure the success of a digital strategy. Technology infrastructure is one of the important enablers for a successful digital transformation.

It is important for banks to upgrade their systems to implement new technologies. There are still few banks who have not yet upgraded their systems from legacy processes to the new infrastructure which is required for integrating front end digitization to back end operations. Banks are also maintaining multiple customer-facing systems which cause duplications in the processes and also make the process inflexible, expensive and time consuming.

Further, the digital transformation programmers affect banks' internal processes during the transition period and disrupts the business as usual. During the trial and testing phase, and sometimes during final implementation, technical glitches hamper seamless offerings and create negative publicity.

Data security

Data security is one of the highest concerns for any banking player today. With the increase in digitalization and ease of banking services, a new threat that banks are exposed to is cybercrime. These crimes are not only for monetary gains but also for the valuable information of individuals or institutions. The threats could be from inside or outside the organization. In the last few years, banks have witnessed various cases of cyber threats.

Regulatory challenges

To implement advanced technologies, government support is inevitable. However, banks are currently overburdened by regulatory pressure. The compliance measures adopted by them to meet the growing regulatory requirements are eating away the capital investments budgets set aside for digital transformation. Adoption of Basel 3, requires huge capital/recapitalisation. Where legacy banks are facing challenges and pressure from regulators, start-up firms, P2P players and Fintech are enjoying incentives like tax holidays etc. which further adds to the competition faced by banks from the challengers in the market.

FUTURE OF BANKING SPACE AND FINANCIAL SECTOR

Digitalization continues to be perceived both as an opportunity as well as a challenge. For banks, execution will be key in the future. This is a playing field where the winner shall be decided based upon path breaking innovation, flexibility to adapt and successful implementation of ideas. Banks will have to re-define their digital journey and combine the silos created by various channels, such as mobile, data analytics, cloud etc. into a 'consolidated digital plan.' They need to come with strategic plans to educate their customers to move to digital channels.

From India's perspective, combination of growing smartphone adoption and internet penetration, increased access to banking products, and a focus on facilitating frictionless commerce through electronic payments will drive a truly inclusive 'Digital India' that transforms the livelihoods of millions of customers and small businesses. Banks in India have implemented digital initiatives in a fragmented manner and in silos from their peers. Now that the banking sector in India is getting competitive with payments and small bank licenses, it will bring the unbanked masses under the ambit of formal banking and also expedite financial inclusion. What needs to be ensured is that banking and payments players work in sync with regulators aiding this journey to digitalization. Moving forward, banks are expected to follow CIA approach; i.e. collaborate, integrate and automate

Collaboration

- Banks will collaborate instead of compete with the challengers.
- Banks may consider collaborating with peer banks, start-ups, retailers and telecom companies to increase their market shares.
- banks will collaborate and share in-house software and technological solutions to make the processes more robust.

Integration

- Integrate and realign all their processes and systems;
- Banks creating a complete digital ecosystem by bringing in the integration of processes, people and technology.
- Driving an uninterrupted flow of digital content by using Open Application Programming Interfaces (APIs), simplified digital architectural designs and seamless

connection between interfaces, services and applications (apps)

Automation

- Automate their processes and push their customers towards more self-servicing, intuitive and robotic channels.

CONCLUSION

Digital disruption is already taking place in the Banking and financial services sector and the rapid speed of the changes that are occurring is likely to increase still further in the near future. Financial technology Companies (finteches) are developing a range of different strategies as they seek to tighten their grip upon the market. Banks currently view fintechs as both competitors and partners, depending on the areas in which they are operating For example, in lending, fintechs are usually regarded as a partner: However, in the payment space, fintechs are viewed as competitors. This space has always been seen as lucrative for banks and a large number of fintechs are disrupting it and are carrying out a lot of these payments at a much lower cost. Meanwhile, Banks start to achieve effective digital transformation, Bank explored four key strategies that can be deployed, relating to launching a digital brand; digitizing processes; modernizing the digital experience; and launching new digital capabilities. These strategies also bring their own challenges like how that physical distribution network can be integrated into the whole digital transformation process.

There are still plenty of opportunities for change in terms of the digital experience and the launching of new brands and digital capabilities. Banks need to be careful that they aren't left behind by other new entrants are already making headway with aspects such as digital wallets and the use of customer data. Banks perhaps need to start collaborating more and educating the regulators on how to modernize the regulatory framework so that they can support a lot more of these digital interactions. Financial services sector isn't unique in terms of suffering from the effects of disruption, banks can no longer afford to sit back and do nothing. Digital transformation has now become a necessity rather than an option.

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