

Top-10 Trends in Retail Banking: 2019

What You Need to Know



Contents

Introduction	3
Trend 01: Slowly but Surely BigTechs Emerge as a Threat to Existing Banking Businesses	4
Trend 02: Open Banking Gains Momentum, APIs Set to Play a Key Role	6
Trend 03: Banks are on an Accelerated Path to Cloud Solutions Adoption	8
Trend 04: Changing Industry Dynamics Demand New-Age Operating and Business Models	10
Trend 05: Banks are Accelerating Digital Transformation Efforts	12
Trend 06: Impact of Distributed Ledger Technology (DLT) on Banking	14
Trend 07: Voice Assistants – A New Channel for Banks	16
Trend 08: Banks are Leveraging AI to Improve Customers' Financial Lives	18
Trend 09: Entering the Invisible Banking Age	20
Trend 10: New Business Models and Technologies Compel Bank Investment in Data Security, Compliance	22
About the Authors	24

Introduction

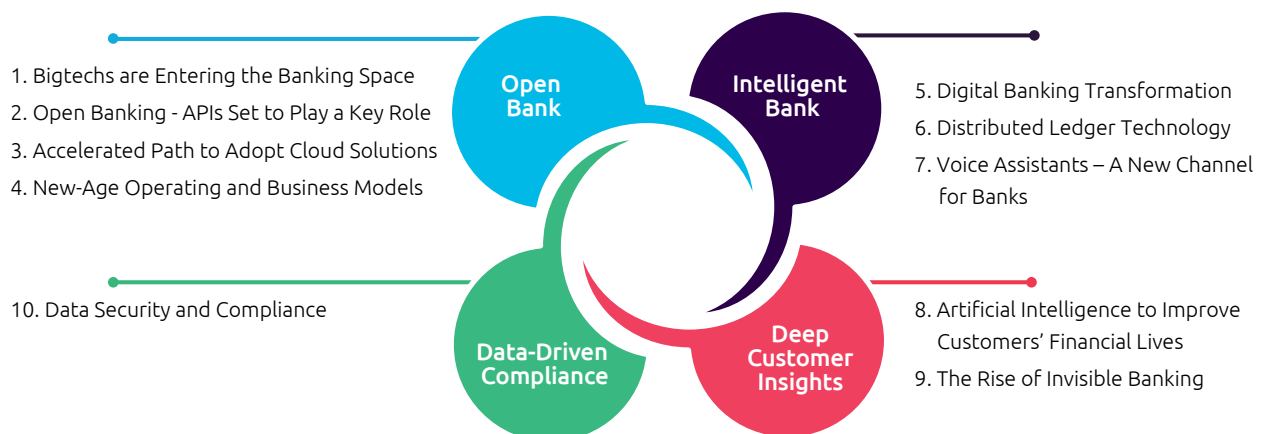


Over the past few years, the banking industry has evolved by leaps and bounds. Aggressive competition and regulatory pressures have always challenged banks, but new competition from FinTechs and non-financial services firms, an explosion of new technologies, and soaring customer expectations have spurred unprecedented industry changes and have compelled banks to develop and set up winning strategies.

BigTechs such as Google, Amazon, Facebook, Alibaba, and others with a heavy tech-focus and a substantial customer base are venturing into the retail banking space and disrupting some profitable areas of the banking value chain. With the threat of these BigTechs looming large, banks are turning to FinTechs known for challenging old models and possessing strengths that complement incumbents.

The Open Banking API-led economy and collaboration with third-parties to offer new-age services has become a strategic priority for banks. To better integrate with these digital natives, more and more banks are adopting a cloud-first strategy, which will also help them drive agility within the organization.

Exhibit 1: Top 10 Trends in Retail Banking - 2019



Source: Capgemini Financial Services Analysis, 2018

To be an intelligent bank of the future, banks need to provide innovative solutions and improve customer engagement. To achieve this goal, banks have recognized that digital transformation is critical, as it can enable them to provide new and better products and services – as well as to control and reduce operational costs.

Banks have realized the need for innovation and are using Distributed Ledger Technology (DLT) for know your customer (KYC) process improvements and payments. The rise in customer adoption of voice assistants has opened the door for banks to leverage a new channel and improve customer engagement.

Investment in building better data utilization capabilities is paying off for banks. Harnessing and utilizing customer data and extracting deep customer insights will help banks create a better contextual value proposition for customers. Techniques such as data analytics, machine learning, and artificial intelligence (AI) can drive significant improvements. These techniques also boost customer convenience to the next level with seamless banking services that minimize friction in the customer journey. With customer data used extensively, it's a priority for banks to maintain data security and adhere to regulations and data-driven compliance.

To stay competitive, banks need to remain cognizant of developments within and from outside the banking industry. This document aims to understand and analyze the top-10 trends in the retail banking industry expected to drive future dynamics of the banking ecosystem in 2019.

Trend 01: Slowly but Surely BigTechs Emerge as a Threat to Existing Banking Businesses

BigTechs may not be launching their own banks, but they are well positioned to take away chunks of businesses from established banks.

Background



- The world is increasingly becoming digital as the internet, smartphone, social media, etc. witness ubiquitous adoption
- Increased penetration of internet-enabled devices has given rise to booming global internet or digital economies
- It has also enabled firms to provide services beyond their traditional strongholds to make digital economies a sector-less economy
- BigTechs such as Google, Amazon, Ant Financial, Apple, Tencent, etc. have already established a dominant position in their spheres and are now leveraging digital economies to deliver non-core services

Key Drivers



- Increased digitization has commoditized basic services, therefore firms are putting more effort into providing a superior and differentiated customer experience
- In parallel, customers' expectations of service providers are being shaped by their interactions in day-to-day activities
- BigTechs continually reinvent themselves to provide excellent customer experience, and customers, in general, love the experiences
- BigTechs are technologically advanced, data-driven large firms that already have a huge base of retail customers, which is a rarity among banks

Trend Overview

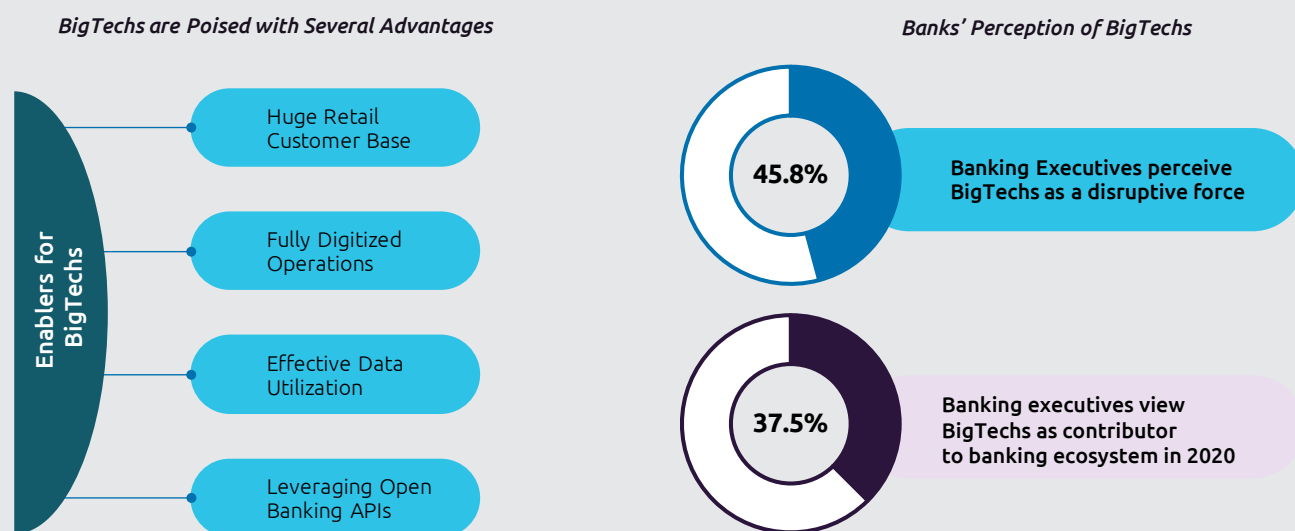


- Although BigTech strategies may differ, a common theme is to target payments areas. In most geographies, payments are subject to less stringent regulations, and therefore allow BigTechs opportunities to offer convenient payment services to their customers
- While Amazon and Ant Financial started with payments to ease the pain of customers and sellers for their e-commerce business, they quickly realized the opportunities in other financial services areas:
 - Amazon has already entered SME lending business. Basis their selling history on Amazon platform; sellers are provided with SME loans¹
 - Similarly, Ant Financial which started with payments services (Alipay), now offers range of other financial services as well including Yuebao (world's largest money market fund), digital-only bank, insurance, etc.²

1 Business Wire, "Amazon Loans More Than \$3 Billion to Over 20,000 Small Businesses", June 08, 2017, <https://www.businesswire.com/news/home/20170608005415/en/Amazon-Loans-3-Billion-20000-Small-Businesses>

2 The Wall Street Journal, "Meet the Earth's Largest Money-Market Fund", September 13, 2017, <https://www.wsj.com/articles/how-an-alibaba-spinoff-created-the-worlds-largest-money-market-fund-1505295000>

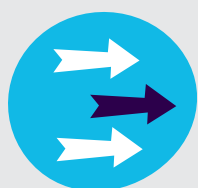
Exhibit 2: BigTechs Set to Enhance their Banking Presence



Source: Capgemini Financial Services Analysis, 2018; Capgemini's World Retail Banking Report 2018

- BigTechs are enormously popular in China (Ant Financial, Tencent, Baidu, etc.), but the wave is visible in other markets as well
- BigTech offerings are not necessarily meant to replicate banking offerings; however, they are designing value propositions that often eliminate the need for standard banking products:
 - PayPal's credit line has attractive incentives and with one product eliminates customers' need for payments, loan, credit card, POS financing, and overdraft facilities³

Implications



- A big game-changer for banks, BigTechs will force banks to rethink their product offering strategy. Banks can now ill-afford to offer rigid and standard banking products to win or retain customers
- Like BigTechs, banks can create an ecosystem of services and weave their financial services within those and at the same time will look to remove friction from customer journeys so that experience is top-notch
- Banks may face increased margin pressure because of high operating costs and will have to look for ways to reduce costs and increase revenue streams
- A profound and long-lasting impact of BigTechs offering financial services may be the emergence of an ecosystem in which banks and BigTechs collaborate to provide excellent products and experiences; however, banks must maintain control of customer relationships, or be rendered as a mere utility provide

³ Paypal website, "Explore our credit cards, debit cards, prepaid cards and PayPal Credit," <https://www.paypal.com/us/webapps/mpp/credit-line-and-card-services>, Accessed September 20, 2018

Trend 02: Open Banking Gains Momentum, APIs Set to Play a Key Role

It is a new day for banks. New threats must be considered, new opportunities exploited, and – in many geographies – updated regulatory compliance respected.

Background





- For a very long time, banks held a monopoly on providing financial services to customers through a walled garden approach
- Earlier banks maintained full control of product offerings and customer experience and customers did not have much choice
- The situation has been changing as FinTechs started providing financial services that are popular with customers and seen as an alternative to banking services
- The advent of FinTechs – coupled with increased digital adoption – ushered a wave of innovation into the industry that increased possibilities of connected offerings and superior customer experience
- To promote innovation and competitiveness in the industry, regulators around the world are encouraging open banking

Key Drivers

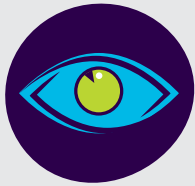


- Previously, Application Programming Interface (APIs) were used primarily in private or partner-specific applications; but now banks are using open APIs to connect with various third-party providers
- As banks and FinTechs look to collaborate with each other, APIs can act as an enabler between the two
- Open banking can drive innovation, better customer experience, ecosystem creation, enhanced offerings, and new revenue streams
- Regulations in specific geographies are pushing openness in the industry

Exhibit 3: Open Banking Opportunities and Challenges

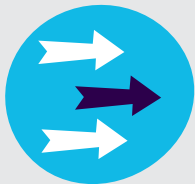
 Opportunities	 Challenges
<ol style="list-style-type: none"> Promotes innovation and competitiveness in industry APIs enable collaboration Enhanced customer experience Enhanced scope of service offerings Possibilities of generating new revenue streams 	<ol style="list-style-type: none"> Banks might have to let go of full control of end-to-end services Data privacy and protection No standard frameworks in place Banks may face increased disintermediation Banks would have to adjust their operating and business models

Source: Capgemini Financial Services Analysis, 2018



Trend Overview

- Open banking is necessitating banks to share customer data such as account, transaction, product and other financial information with third-party providers that are giving rise to a connected ecosystem of various types of service providers
- While many markets embrace open banking, the extent of support varies depending on the outlook and backing of regulators
- This openness is encouraging both threats and opportunities for the banks:
 - By accessing the bank's data, third-party service providers can offer more compelling and useful services such as real-time personal financial management across all accounts
 - However, banks also have an opportunity to reinvent their existing offerings while as creating new services that leverage ecosystem connections
- Several new use cases in retail banking are emerging such as account aggregation for expense tracking and management, instant payments, real-time data-based offerings, and personalization, etc.
- FinTechs, BigTechs, and other service providers are leveraging the open API ecosystem to offer financial services:
 - Although payments is the most active area where hundreds of FinTechs and BigTechs such as Google, Apple, Amazon, etc. have offerings, lending, investment, and financial management are also witnessing increased participation
- Most progressive banks realize the opportunity and have opened their APIs for the public to drive innovation and new business propositions



Implications

- Banks already aim to offer end-to-end financial services through various channels, with the adoption of open APIs third-parties can also build on the bank's data and provide additional offerings, which essentially turns the bank into a platform
- With the rise of open banking, banks can no longer control all aspects of services – product offerings, service, customer experience – and will have to compete or collaborate with FinTechs, BigTechs or other service providers
- As data sharing is encouraged across the industry, there is a growing focus on data-sharing consent and protection; however, standardization can alleviate many of these concerns
- Europe had taken the lead in pursuing an open banking agenda, and now many countries are carefully observing the impact of PSD2 and are likely to establish similar regulation
- The revenue mix of banks is expected to change as banks lose some business in the ecosystem but also gain share in other profitable areas

Trend 03: Banks are on an Accelerated Path to Cloud Solutions Adoption

The need for innovation along with agile and efficient product and services delivery has encouraged an uptake of cloud in the banking industry.



Background

- Increased digitization has created an enormous amount of data, and it is expanding every single minute, requiring the ever-increasing need for storage
- Despite the need for coherent and well-integrated banking systems, most banks are plagued by aging and disparate systems that often operate in silos
- Siloed systems drain bank resources in terms of maintenance and costs and also limit efficient operational capability



Key Drivers

- As customer expectations evolve banks need to respond and innovate faster than ever before; which requires infrastructure that supports all stages of development – from proof of concept to testing and deployment
- Software-as-a-Service (SaaS) over the cloud can help banks avoid massive investment and the complexities of new software and upgrades
- Cloud provides greater computing ability, enabling effective utilization of data for better customer experience and personalized offerings
- The rise of open banking requires banks to connect with third-parties through APIs and to interact with a variety of players – the cloud acts as glue for all these components

Exhibit 4: Cloud Promises Major Gains but Not Without Challenges

Gains with Cloud Native Approach		Challenges with Cloud Native Approach	
Improved organizational agility	88%	Shortage of skills	68%
Revenue up, operating cost down	84%	Significant cultural challenges	61%
Allocation of cloud budget on PaaS in next three years	41%	Integration with legacy systems	60%
Cloud native is core part of overall cloud strategy	27%	Require external support to choose right platform	41%

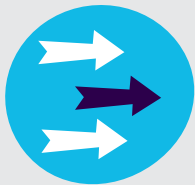
Note: Percentages represent the executives who agreed with gains and challenges

Source: Capgemini Financial Services Analysis, 2018; Capgemini Perspectives: Cloud Native Comes of Age in Banking



Trend Overview

- Cloud has witnessed steady uptake by retail banks as security concerns subside and executives realize potential tangible benefits
- Cloud is enabling banks to drive innovation faster, to allow flexible workplace management, lean, agile delivery, and more manageable IT infrastructure while saving on costs and freeing capital for more productive uses
- Many established banks are shifting workloads to the cloud; however, the extent of workload and functions migrated and preferences of private, hybrid, or public vary by bank:
 - DBS in Singapore used Amazon Web Services (AWS) to move its public web assets that support half of its customer traffic and internet-banking workloads⁴
 - Rabobank leveraged Microsoft Azure to build a cloud-native leadership organization, the Cloud Competence Center (CCC), to help more than 75 development teams gain efficiency⁵
- A new breed of digital-only banks that runs almost entirely on the cloud is efficient, responsive, scalable, and cost-effective:
 - Monzo, a UK digital-only challenger bank has more than half a million customers and nearly 300 employees and was built from scratch on the AWS cloud with just five people managing its platform⁶
- Regulatory authorities and central banks are encouraging cloud use:
 - Monetary Authority of Singapore, FINRA in the United States, and the Saudi Arabian Monetary Agency all encourage public cloud use⁷



Implications

- As trust in cloud services increases, uptake by banks is expected to continue as well
- Cloud solutions will act as an enabler for open banking as it provides flexibility to create infrastructure for open APIs
- Cloud-enabled agile and lean delivery will boost banking industry innovation
- As banks create more analytics and artificial intelligence use cases, increased computing, storage power and deployment of intelligent business services will spur more efficient data utilization
- Competition among cloud service providers such as Amazon, Google, and Microsoft will ensure that banks get offerings most suited to their business and technological requirements

4 AWS website, "DBS Bank Case Study," <https://aws.amazon.com/solutions/case-studies/dbs-bank>, Accessed October 2, 2018

5 Microsoft website, "Rabobank reaps the rewards of investing in culture change with Microsoft Services," August 16, 2018, <https://customers.microsoft.com/en-in/story/rabobank>

6 AWS website, "Monzo Case Study," <https://aws.amazon.com/solutions/case-studies/monzo>, Accessed October 2, 2018

7 Finextra, "The Cloud is ready for Banks but are Banks ready for the Cloud?," Jonathan Charley, August 22, 2017, <https://www.finextra.com/blogposting/14434/the-cloud-is-ready-for-banks-but-are-banks-ready-for-the-cloud>

Trend 04: Changing Industry Dynamics Demand New-Age Operating and Business Models

Banks stand to lose revenues and margins if they ignore the need to transform business and operations.

Background



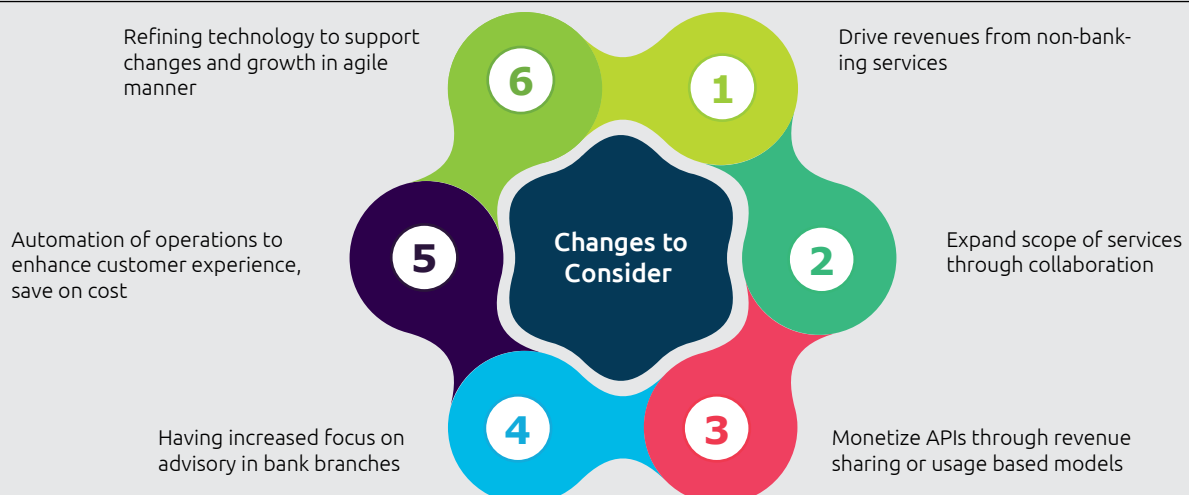
- The banking industry has always been under pressure for margins, regulatory requirements, macroeconomic conditions, etc. but last decade has witnessed the rise of a new set of challenges such as increased customer expectations, FinTechs, rapid digitization, and the latest challenge comes from BigTechs
- Banking now faces competition from FinTechs, BigTechs or other service providers who are making good inroads into the banking arena with significantly different operating and business models
- As these disruptive forces change the industry landscape, most banks are not well prepared to tackle these new challenges

Key Drivers



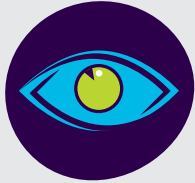
- With the growing threat from new competition, banks cannot afford to continue with their traditional operating and business models
- The rise of sectorless digital economies around the world have created opportunities for banks to offer non-banking services on their own or in collaboration with third-party service providers
- It will be difficult for banks to own end-to-end value chain and experience for all its products; thus, they would have to decide on what role they want to play in the emerging ecosystem and thus modify their strategy accordingly
- Changing customer preferences are also having a bearing on banking operations, e.g., increased adoption of digital has forced banks to rethink the role of branch banking

Exhibit 5: Changing Operating and Business Models of Banks



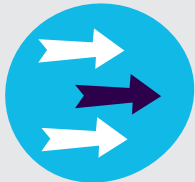
Source: Capgemini Financial Services Analysis, 2018

Trend Overview



- Some firms already realize the revenue-generating potential of non-banking services:
 - Emirates NBD bank launched e-commerce portal SkyShopper to offer customers a one-stop destination for booking flights, purchasing entertainment tickets, shopping and paying bills⁸
 - Finland's OP Financial group launched maintenance-free electric car leasing services to customers, adding a new revenue stream⁹
- When banks find it too risky or cumbersome to offer new products independently, they often collaborate with or seek white-labeling services from third-party providers
- Increased connection with ecosystem players gives banks opportunities to earn revenue by monetizing APIs
- With a nod to successful digital-only challenger banks, many incumbents are considering similar efforts, such as DBS' Digibank and Kotak 811 from Kotak Mahindra Bank^{10 11}
- Depending on each bank's role in the new ecosystem, business models will need adjustment as strategies differ depending on whether they will own customer relationships or produce products
- Data can also help banks streamline operations by identifying bottlenecks and bolstering the relevance of personalized offerings
- To support changing models, banks must modernize their technology model to create a robust, forward-looking infrastructure that supports real-time, 24x7 processing

Implications



- Going forward banks can expect their revenue mix to change as they create new services and plan for competition for some of the services
- More post-disruption collaboration is expected throughout the industry as players better understand each other's strengths and weaknesses and aim for the most suitable ecosystem placement
- The ecosystem will support the rise of platform-based API economy where banks offer their own products as well as third-party offerings
- Some banks will aim to take center stage of their ecosystem, while others will specialize in niche areas, or will offer white-labeled services
- Banks will strategically prioritize a digital culture among their employees to support transformational initiatives

⁸ SkyShopper website, www.skyshopper.com, Accessed October 1, 2018

⁹ *yle UUTISET*, "OP financial group to start leasing electric cars," November 28, 2016, https://yle.fi/uutiset/osasto/news/op_financial_group_to_start_leasing_electric_cars/9320599

¹⁰ DBS Bank press release, "DBS launches digibank, an entire bank in the phone, in Indonesia," August 29, 2017, https://www.dbs.com/newsroom/DBS_launches_digibank_an_entire_bank_in_the_phone_in_Indonesia

¹¹ Kotak 811 website, <https://www.kotak.com/en/personal-banking/accounts/savings-account/811-Account/811-variants.html>, Accessed October 17, 2018

Trend 05: Banks are Accelerating Digital Transformation Efforts

With digital transformation as a critical priority, banks will need to revisit traditional business models and embrace digitalization at the core.



Background

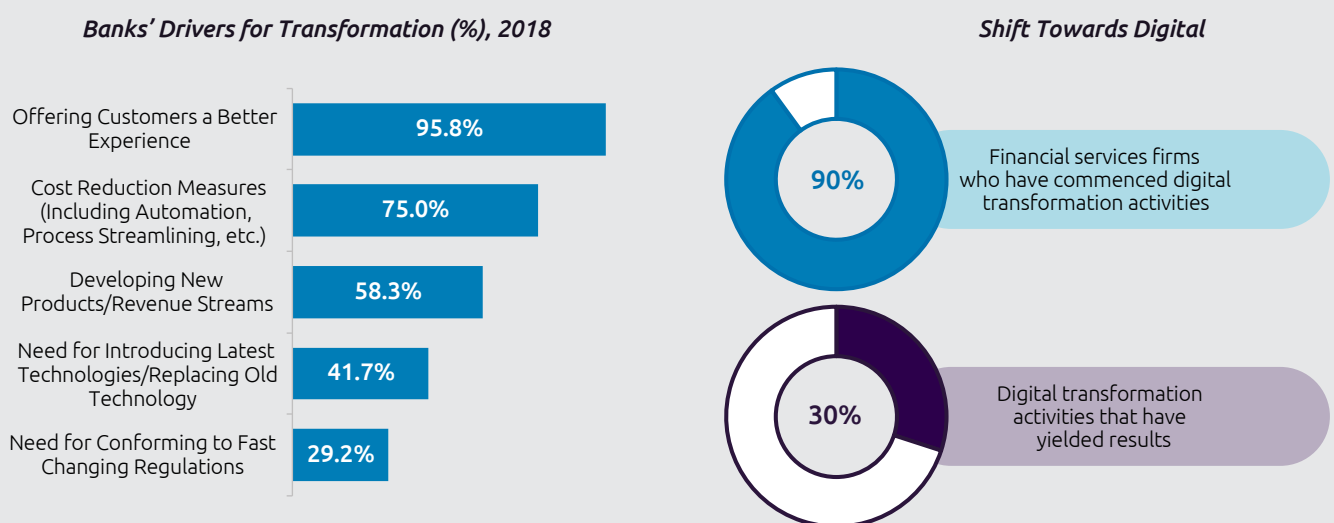
- Lines between different traditional industries have started to blur, and digital-only banks, BigTechs, and other non-traditional FS firms add a new competitive dimension
- The banking industry is evolving at a breakneck pace and explosion of new technologies has fueled disruption
- Banking customers' expectations are changing rapidly as their experiences with digital technologies have upped the ante when it comes to interacting with the world

Key Drivers

- Superior experiences offered by BigTechs, FinTechs, and disruptors across other industries have raised the customer experience bar, and consumers now expect similar experiences from their banks
- Existing technology has been a roadblock to wholesale digital transformation for banks as they try to integrate several legacy systems from mergers and acquisitions
- Digital transformation is now critical to quickly launch new revenue streams, as well to as control and reduce operational costs:
 - Banks are further looking to leverage data to understand consumers better, to anticipate fraud, cross-sell, and deepen customer relationships

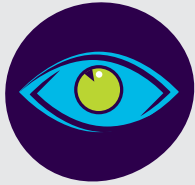


Exhibit 6: Digital Transformation ¹²



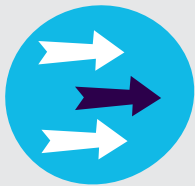
Source: Capgemini Financial Services Analysis, 2018; Capgemini's World Retail Banking Report 2018

¹² Fujitsu, "Digital Transformation of Banking Services' to Propose Future Banking Sector Business Models", July 12, 2018, <http://www.fujitsu.com/global/about/resources/news/press-releases/2018/0712-02.html>



Trend Overview

- According to the British Bankers' Association, customers' activity on banking apps has increased by a phenomenal 354% from 2012 to 2017, and the use of mobile apps to access current accounts has risen from 21% to 61% across these five years¹³
 - Banks recognize the need for faster innovation and are focusing on improved customer engagement activities via digital transformation
- More and more, banks are mining customer data inherent in the back office to develop superior experiences for customers, who base their expectations on the likes of Google, Amazon, and Uber
- Banks are launching digital-only banks to cater to digitally-savvy customers:
 - Citizens Financial Group has launched a standalone digital bank wherein all banking activities can be done by customers digitally, and all documents will be delivered electronically in a secure manner¹⁴
 - United Overseas Bank is launching a digital-only bank to grow its customer base from 3 million to 5 million over the next five years¹⁵
- Several banks have invested in wholesale digital transformation:
 - DBS launched its *Digital Mindset* program to help change its internal culture, and the bank now earns twice as much income from digital customers compared with traditional customers (with digital customers being three times more profitable to the bottom line)¹⁶



Implications

- Banks will combine digital experiences with the *human touch* to create a personalized engagement model for customers to enhance the overall customer journey
- Although a comprehensive digital transformation has been a daunting task for banks, they will look to re-invent themselves to better compete in the constantly-evolving digital environment
- Banks' new business and operating models will necessitate a digital transformation to support new revenue streams and meet increasing customer expectations:
 - Transforming the centralized back-office legacy model to sustain growth and automate processes will be critical

13 *Raconteur*, "Banking: digital transformation is revolutionizing customer experience", Clare Gascoigne, March 1, 2018, <https://www.raconteur.net/business-innovation/banking-digital-transformation-revolutionising-customer-experience>

14 *Finextra*, "Citizens launches digital-only bank," July 11, 2018, <https://www.finextra.com/newsarticle/32375/citizens-launches-digital-only-bank>

15 *Finextra*, "UOB to launch digital-only bank," Aug 3, 2018, <https://www.finextra.com/newsarticle/32484/uob-to-launch-digital-only-bank>

16 *LiveMint*, "Is DBS walking, talking and earning like fintech?," Andy Mukherjee, Mar 29, 2018, <https://www.livemint.com/Opinion/fpKKQ9Fh1AkRTDzytba6mO/Is-DBS-walking-talking-and-earning-like-fintech.html>

Trend 06: Impact of Distributed Ledger Technology (DLT) on Banking

With several use cases, Distributed Ledger Technology has enabled disruptive innovation in banking, but large-scale adoption is yet to be seen.

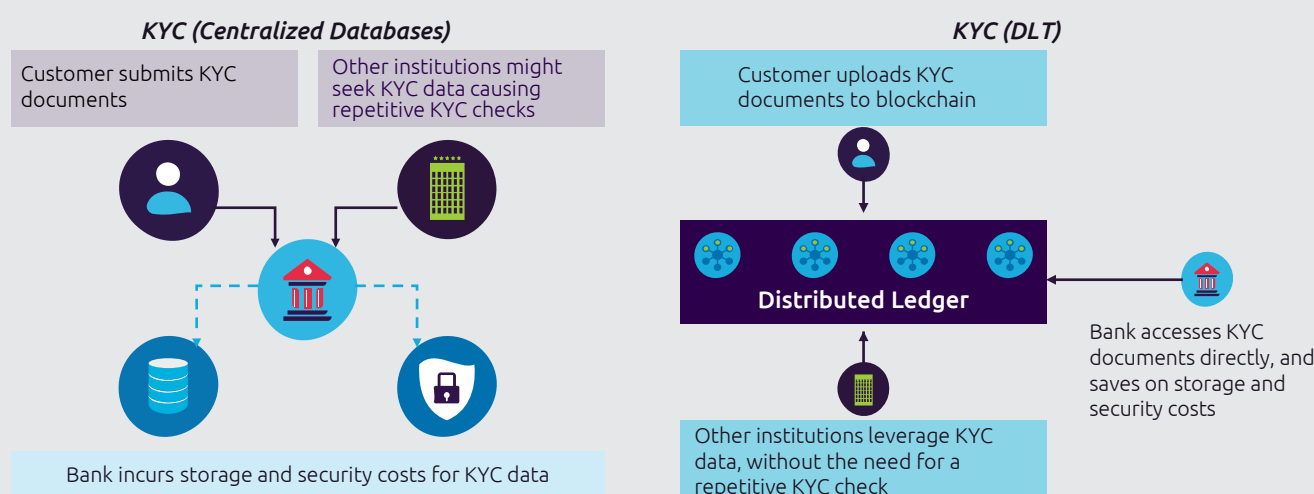
Background

- Post financial crisis, regulations have become stringent and add compliance burden to banks, especially on KYC norms
- As digital continues to gain increasing traction, cross-border banking transactions are growing and require quicker and more secure transactions:
 - Involvement of multiple intermediaries and manual processes are prone to higher errors and an increasing likelihood of fraud

Key Drivers

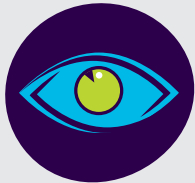
- Over the past few years, governments and central banks across the globe have been paying close attention to DLT for potential use cases in banking:
 - Bank of England is undertaking a new proof-of-concept to explore different ways its planned real-time gross settlement (RTGS) system could connect with distributed ledger networks¹⁷
- Customers have to provide similar sets of information to different banking entities and they are seeking quicker solutions to have their information available to all concerned parties
- Banks' have focused on developing innovative and advanced encryption technologies for quicker transactions and settlements, lowering transaction costs, and improving operational efficiencies
- Due to numerous financial crimes and cyber-attacks, banks are seeking enhanced transparency, trust, and higher reliability

Exhibit 7: Distributed Ledger for KYC



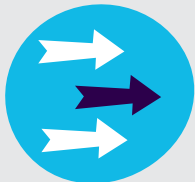
Source: Capgemini Financial Services Analysis, 2018

¹⁷ Coindesk, "Bank of England to Test DLT Use in New Settlement System," Annaliese Milano, March 27, 2018, <https://www.coindesk.com/bank-england-test-dlt-interacts-new-settlement-system/>



Trend Overview

- DLT provides high levels of security in storing and transmitting data, a decentralized open network, which is immutable and transparent, and allows easy data sharing among multiple intermediaries:
 - Blockchain can store different types of data, and going forward, DLT will allow institutions and third parties to share a common record system
- DLT applications have several use cases in banking, especially for KYC/identity management, and payments:
 - Banks' KYC processes require duplication of effort, and KYC blockchain enables structured information to be recorded, assessed, and shared across the network using advanced cryptography:
 - › HSBC, OCBC, and Mitsubishi UFJ Financial Group (MUFG), in partnership with Singapore's Infocomm Media Development Authority (IMDA) became the first consortium in South East Asia to develop a proof-of-concept for KYC blockchain¹⁸
 - The Monetary Authority of Singapore (MAS) and The Association of Banks in Singapore (ABS) led a consortium to develop prototypes of three different models for decentralized inter-bank payment and settlements with liquidity savings mechanisms¹⁹
- Innovation in DLT continues as the industry gradually moves beyond the traditional blockchain paradigm to data sharing between only parties that require access, which reduces security concerns



Implications

- The banking industry will continue to explore further DLT use cases, especially for risk management and fraud detection
- DLT based applications can result in externalization of 'trust', wherein the same set of customer information can be made available to different financial institutions and intermediaries, thus resulting in faster processing
- DLT adoption will be incremental – as it replaces manually-intensive and inefficient processes – before large-scale adoption for other banking processes are considered
- Relaxed regulations and DLT collaboration among ecosystem entities will evolve further to address banking pain points and increase transparency
- While it might take a few more years before distributed ledger technology makes its way into mainstream banking, constant innovations, trials, and use cases can dramatically improve efficiency and security while reducing costs, especially within the payments and settlements space

¹⁸ *The Business Times*, "Singapore regulator, OCBC, HSBC, MUFG create 'Know Your Customer' blockchain prototype," Rachel Mui, October 3, 2017, <https://www.businesstimes.com.sg/banking-finance/singapore-regulator-ocbc-hsbc-mufg-create-know-your-customer-blockchain-prototype>

¹⁹ Monetary Authority of Singapore, "MAS and ABS lead consortium to harness blockchain technology for more efficient inter-bank payments," Oct 5, 2017, <http://www.mas.gov.sg/News-and-Publications/Media-Releases/2017/MAS-and-ABS-lead-consortium-to-harness-blockchain-technology.aspx>

Trend 07: Voice Assistants – A New Channel for Banks

Massive growth in customer adoption of voice assistants has made a strong case for retail banks to introduce “Voice” as a new channel.

Background



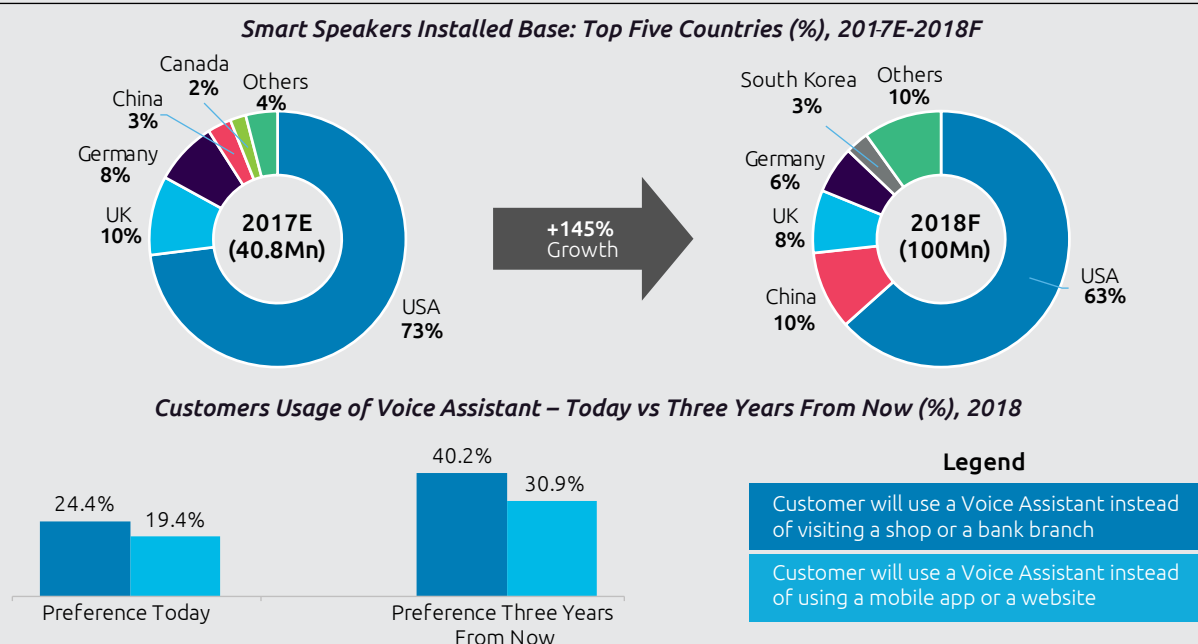
- In this digital era, banks are exploring different ways to reach customers and are discovering new digital modes of interactions
- Internet channels such as websites, mobile applications, and social media are heavily utilized by banking firms to interact with customers
- The increasing adoption of voice-enabled devices by customers provides banks with one such opportunity, where they can use voice assistants as a channel and offer voice-based services which can extend beyond just personalized assistance

Key Drivers



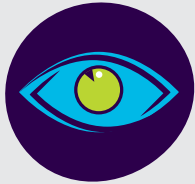
- Globally, customer adoption of voice assistants is expected to reach 1.83 billion by 2021, growing at a CAGR rate of 29.4%.²⁰
 - Initially driven by voice assistants such as Microsoft’s Cortana, Apple’s Siri, and Samsung’s Bixby, voice assistant adoption has skyrocketed with the release of devices such as Amazon’s Alexa and Google Assistant

Exhibit 8: Voice Assistant Adoption Picks Up Pace



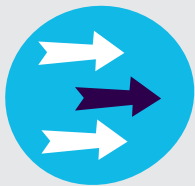
Source: Capgemini Financial Services Analysis, 2018; Canalys Estimates and Forecasts, Smart Speaker Analysis, June 2018; Capgemini Financial Services Analysis, 2018; Capgemini Research Institute, Conversational Commerce Survey, October–November 2017, N = 5,041 consumers in the US, UK, France, and Germany

20 Medici, “The Rise of the Voice Payments Ecosystem,” Diwakar Mandal, April 16, 2018, <https://gomedici.com/rise-of-voice-payments-ecosystem/>



Trend Overview

- Customers are making voice-based assistants an integral part of their daily lives, and with more and more industries adopting voice assistants, banks too will need to start integrating these voice-based technologies into their customer acquisition and retention, marketing, sales, and customer experience strategies
- A few large banks have begun supporting voice interactions for banking activities such as checking account balances, transfer money, and making payments:
 - Bank of America’s voice assistant Erica helps customers access balance information, transfer money between accounts, search past transactions, and navigate the mobile app to view bills and schedule payments²¹
 - Barclays has enabled mobile payments via Apple’s virtual voice assistant Siri:²²
 - › Customers can talk to Siri and ask to make a payment and authenticate it with Apple’s Touch ID fingerprint recognition
 - Capital One – via Amazon’s Alexa – provides real-time access to everything from bank accounts to credit cards and loans²³



Implications

- Voice assistants can enable banks to target the right customers based on their profile data, and cater to them with the right products and services at the right time and right place; This can significantly increase the conversion rate, enable banks to generate more business and potential financial gain
- Today’s banks are yet to leverage full voice assistant potential, but with maturing technology and the conversational ability of voice assistants, firms will be able to perform more complex tasks and provide more personalized and contextual advice to customers
- Present-day voice assistants pose risks such as a threat to privacy and security; banks will need to plan strategies to overcome them or minimize their impact
- Banks must chart a comprehensive voice strategy and decide how to use voice assistants as an engagement channel, how to enable payment and transactions, and how to provide customer support and advisory-related services to customers via voice

21 *Tearsheet*, “Inside the development of Erica, Bank of America’s AI-powered bot,” Tanaya Macheel, July 28, 2017, <https://www.tearsheet.co/artificial-intelligence/inside-the-development-of-erica-bank-of-americas-ai-powered-bot>

22 *CNBC*, “People in the UK are now able to make payments by asking Apple’s voice assistant Siri,” Ryan Browne, August 23, 2017, <https://www.cnbc.com/2017/08/23/barclays-customers-can-now-use-apple-virtual-assistant-siri-to-bank.html>

23 Amazon Website, “The Story of the Capital One Alexa Skill,” Zoey Collier, December 16, 2016, <https://developer.amazon.com/blogs/alexa/post/c70e3a9b-405c-4fe1-bc20-bc0519d48c97/the-story-of-the-capital-one-alexa-skill>

Trend 08: Banks are Leveraging AI to Improve Customers' Financial Lives

AI is helping banks collect in-depth customer information, and banks are leveraging this data to improve their suite of services through dynamic customization.



Background

- Banks have been hampered by new forms of competition, regulations, and increasing security concerns
- New and agile players are leveraging emerging technologies to provide innovative products and services
- Technological advancements and increasing digitization have raised customer expectations from the banking industry

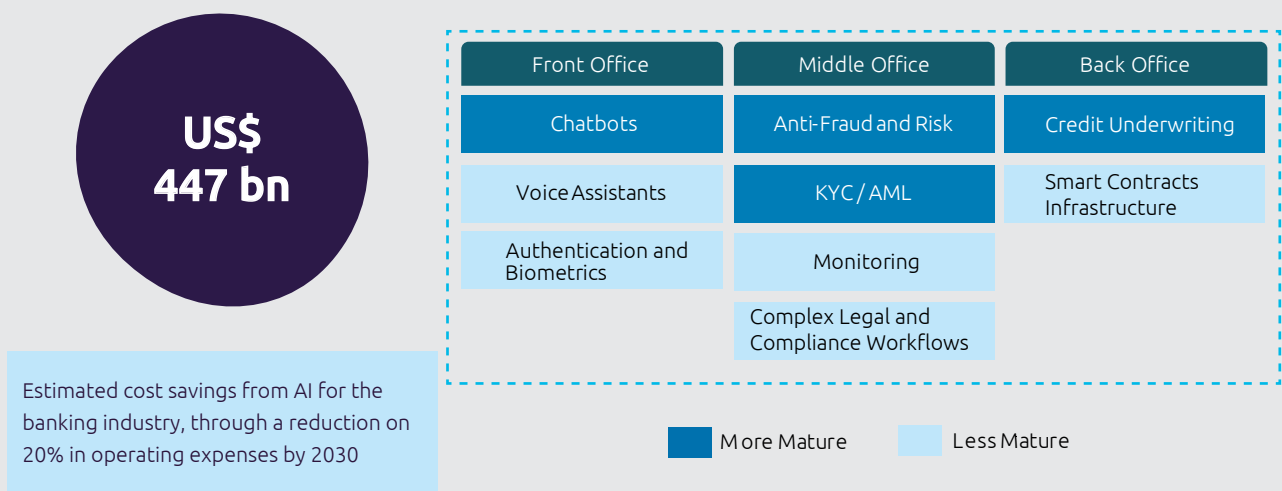


Key Drivers

- Banks are focused on enhancing customer experience, and customers are willing to share more information with banks, if banks can provide personalized experiences and relevant value propositions (globally, 44.3% customers are willing to share personal data with their banks)²⁴
- Customers are demanding easy-to-use and intuitive tools/channels, and banks are looking to reduce the service time as well as maximize the positive experience
- Banks are looking to stay ahead on the technology adoption curve and exploring different ways to accelerate productivity gains and service their customers better

Exhibit 9: Artificial Intelligence Opportunity ²⁵

Artificial Intelligence Use Cases in Banking



Source: Capgemini Financial Services Analysis, 2018

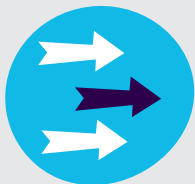
²⁴ Capgemini, "World Retail Banking Report 2018," September 20, 2018, <https://worldretailbankingreport.com/>

²⁵ Autonomous Next, "Augmented Finance and Machine Intelligence," <https://next.autonomous.com/augmented-finance-machine-intelligence>



Trend Overview

- AI is helping banks provide personalized services by automating services with different algorithms, and these algorithms rebalance regularly to offer customized offerings as well as better support:
 - AI provides cognitive insights that detect real-time patterns from vast data, to derive more in-depth and actionable insights
- N26 in Europe integrated its digital banking app with Pulse26, a virtual contextual assistant for financial analysis, which provides insights based on individual customer needs²⁶
- Citibank made a strategic investment in Feedzai, which can rapidly evaluate large amounts of data and identify fraudulent activities, thereby alerting the customer in real-time²⁷
- Global banks such as OCBC Bank, Commonwealth Bank, Wells Fargo, and HSBC have invested in AI for regulatory compliance in application areas including automated data management, reporting, AML, compliance, and automated regulation interpretation and mapping²⁸
- In 2018, Ant Financial launched an artificial intelligence competition to explore AI-related financial solutions in areas such as payment risks identification and intelligent financial services development²⁹
- In addition to improving operational efficiencies, banks are leveraging AI to collect in-depth customer information (lifecycle, profiles, interactions, behaviors) and using this data to provide a more contextual experience



Implications

- Although the banking industry is in the early stages of developing robust AI solutions, real potential exists in how AI may transform customer experience
- Banks will continue to focus on AI initiatives that target conversational interfaces and virtual assistants, process excellence, and fraud detection
- Banks and AI startups will collaborate, and their efforts will likely focus on improving front-office (customer-centric) and back-office (operation-focused) processes, as well as regulatory compliance
- BigTechs such as Google and Amazon will add financial services skills to their virtual assistants, and will then collaborate with banks
- Going forward, AI will also be leveraged for product development, by applying both qualitative and quantitative data to create financial products

²⁶ Medium, "How Artificial Intelligence will impact banking and financial services," September 21, 2017, <https://fortune.com/2018/06/20/bank-of-america-blockchain-patent-why/>

²⁷ TechEmergence, "AI in Banking – An Analysis of America's 7 Top Banks," September 16, 2018, <https://www.techemergence.com/ai-in-banking-analysis/>

²⁸ Medici website, "How Banks Are Using AI as a Tool for Transformation," Diwakar Mandal, April 30, 2018, <https://gomedici.com/how-banks-are-using-ai-as-tool-for-transformation/>

²⁹ Pandaily, "Ant Financial Launches ATEC AI Competition for AI-Related Financial Solutions," Carol Yin, April 25, 2018, <https://gomedici.com/how-banks-are-using-ai-as-tool-for-transformation/>

Trend 09: Entering the Invisible Banking Age

The invisible banking age dawns as banks seamlessly integrate financial services into customers' daily lives.

Background



- Over the past decade, banking has changed significantly; there has been giant leaps in technology and the way they interact with the customer
- The introduction of internet banking and mobile banking has changed the way customers do banking; Customers today after opening an account, need not necessarily enter a branch for any activity or transaction as they can do it all through online or a mobile app
- Similarly, with more and more banking services seamlessly integrated into customers' everyday lives, we are slowly entering an age of invisible banking

Key Drivers



- Non-traditional firms such as FinTechs and BigTechs have entered the banking space and have rapidly evolved how they interact with customers
- Customers expect banks to provide similar experiences provided by new age platforms such as Google, Amazon, Netflix, Facebook, etc.
- Today's customers don't want their time and life to revolve around banking; they need banks to remove the pain and friction associated with the existing banking customer journey
- Growing capabilities in digital technologies such as analytics, voice-based conversation, and artificial intelligence have spurred invisible banking

Exhibit 10: DBS Case Study: Invisible Banking^{30 31}

DBS – Invisible Banking Example

DBS Bank, a leader in digital transformation recently evolved its positioning to “Live more, Bank less”. The bank recognized that customers lives don't revolve around banking and to make banking truly joyful, it needs to become invisible. They need to deliver banking services, which is simple and seamless, that customers have more time to spend on the people or things they care about.

Embedding Banking in the Customer Journey:

- * In 2017-18, the bank launched car, property, and electricity marketplaces, all via its website:
 - The bank has slowly tried to weave banking into customers lives, as customers looking to buy or sell their car, rent a property or choose an electricity provider can all be done on the DBS website
- * Their API-driven architecture and strong focus on human-centered design and user experience has helped them make banking simpler and more seamless to the customer
- * The digital ecosystem of partners and other third-party participants in the customer journey are an essential part of DBS's digital story:
 - They have launched around 150 developer APIs, which has strengthened the ecosystem the bank has created and also improve the ability to provide superior experiences for DBS customers and partners

Creating a Bank that is Always with its Customers:

- * Customers in Singapore and Hong Kong using DBS iWealth, can manage, transact and trade via their mobile phones 24/7
- * Digibank is paperless, signatureless, branchless, and an entire bank in the phone, in India and Indonesia

Source: Capgemini Financial Services Analysis, 2018

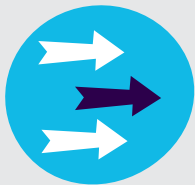
30 Finextra, “DBS: The Rise Of Invisible Banking,” Kenneth Marritt, November 05, 2017, <https://www.finextra.com/blogposting/14693/dbs-the-rise-of-invisible-banking>

31 DBS Bank press release, “DBS signals time has come for new kind of banking,” May 15, 2018, https://www.dbs.com/hongkong/newsroom/DBS_signals_time_has_come_for_new_kind_of_banking1



Trend Overview

- Invisible banking transactions and services mean that banking elements and customers lives are completely integrated so that customers don't realize the bank's presence throughout the entire journey:
 - Services and products are packaged in the background and are invisible to the customer; the whole process is wrapped into a comfortable and enjoyable customer experience
 - Banking apps or channels will take away the conscious decision of the customer to pay and will do everything on their own
- While a full-fledged invisible bank may be a thing of the future, activities such as payments or balance inquiries are becoming embedded in customers' lives, with no actions required:
 - BBVA is testing a facial recognition system at its in-house cafeteria that recognizes the user and their orders and charges their cards as part of a strategy to render checkouts and payments invisible³²
 - Voice assistants such as Amazon Alexa and Google Home are enabling customers to proactively performs daily personal and financial tasks; banks are utilizing this opportunity to provide banking services with least amount of friction
 - Invisible banking is a guiding principle for Singapore's DBS Bank as it aims to help customers from behind the scenes³³ (Exhibit 10)



Implications

- Banking will become a seamless part of your customer's lives, improving the experience and bringing services in line with customer expectations
- Banks will need to make significant investments in APIs, cloud-based services, and artificial intelligence to realize the dream of invisible banking
- Banks will need to efficiently utilize their data and build effective partnerships with third parties
- As data forms a significant part of this process, maintaining data security and privacy will be the foremost priority for banks
- Although banking might become invisible, human interaction and advice cannot be ignored; banks will need to utilize technology to empower customers and employees in a way that suits their needs and preferences
- Invisible banking might impact the bank branding, and for customers, the bank might end up just as a utility provider

32 Finextra, "BBVA tests 'invisible payments' technology at in-house cafe," March 19, 2018, <https://www.finextra.com/newsarticle/31828/bbva-tests-invisible-payments-technology-at-inhouse-cafe>

33 Finextra, "DBS: The Rise Of Invisible Banking," Kenneth Marritt, November 5, 2017, <https://www.finextra.com/blogposting/14693/dbs-the-rise-of-invisible-banking>

Trend 10: New Business Models and Technologies Compel Bank Investment in Data Security, Compliance

Changing business models and increasing use of new technologies, have made banks more susceptible to cyber-attacks and have forced banks to take data security and compliance seriously.

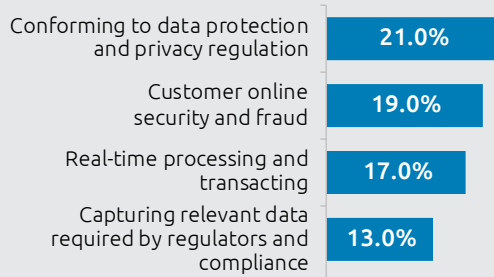
Background



- In this digital age customer identity and data are valuable, and customers inherently trust that banks will protect their information
 - This trust is reflected as customers share their finances, personal information, and confidential details
- Banks use data to drive competitive new sales and service channels and to improve customer experience, which benefits both customer and bank
- Compromised data security will erode customer trust, and may irrevocably tarnish bank reputations

Exhibit 11: Data Security^{35 36}

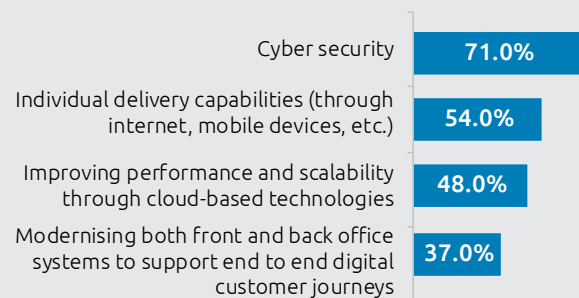
Biggest Challenge Bank Faces Concerning Data and Third-Party Access (%), 2018



88%

In 2017, 2.6bn records were stolen, lost or exposed worldwide, around 88% increase from 2016

Bank Focus Areas on Digital Investment (%), 2018



12%

Industries such as healthcare (27%), financial services (12%), education (11%) and government (11%) experienced the largest breaches

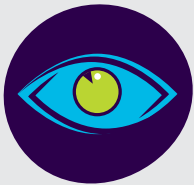
Source: Capgemini Financial Services Analysis, 2018

34 Information Age, "Rise in cyber-attacks against financial services firms," Nick Ismail, January 31, 2018, <https://www.information-age.com/rise-cyber-attacks-financial-services-firms-123470588/>



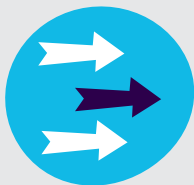
Key Drivers

- The number of cyber-attacks against financial services companies reported to the Financial Conduct Authority (FCA) in the UK rose by more than 80%, from 38 material cyber incidents in 2016 to 69 in 2017³⁴
- New open banking regulations require banks to share their customers' financial information with third-party providers, which may make banks more vulnerable to cyber attacks
- Increasingly banks are relying on the cloud to store data and for cheaper processing power, which may lead to a risk of data security compromise



Trend Overview

- The Revised Payment Service Directive (PSD2) and open banking require banks to share data with FinTechs and third-party providers acting on behalf of account holders as long as they adhere to strict authentication techniques:
 - This new business model poses a challenge to banks and spotlights the need for an end-to-end security platform that provides strong customer authentication and authorization, and which enables secure, continuous, and reliable communication between banks, third parties, and their customers
- Directives such as the General Data Protection Regulation (GDPR) significantly increase bank responsibility, extend the data rights of individuals, and require processors and data controllers to implement appropriate measures to protect personal data:
 - Noncompliance can result in administrative fines of more than USD\$23 million or 4% of annual revenues (whichever is greater)³⁷
- Although cloud computing offers banks several advantages, banks need to be cautious in adoption and must consider data confidentiality, security, regulatory compliance, and interoperability of standards



Implications

- Banks should look ahead to invest in data protection and manage cybersecurity risks by being proactive and setting up security strategies
 - To get ahead of future regulations strategic planning now can be a competitive advantage later
- Putting an appropriate compliance framework in place can help firms avoid significant fines and reputational damage while also demonstrating trustworthiness and responsibility to customers
- Banks need to consider multiple levels of security, which might include using multi-factor authentications, secure application shielding, digital signatures, and trusted communications
- Banks need to explore new authentication and authorization techniques such as biometrics and behavioral biometrics to enhance their security features

35 The Economist website, "Whose customer, are you? The reality of digital banking," Renée Friedman, May 21, 2018, <https://eiuPerspectives.economist.com/financial-services/whose-customer-are-you-reality-digital-banking>

36 Gemalto website, "More than 2.5 billion records stolen or compromised in 2017", April 11, 2018, <https://www.gemalto.com/press/pages/more-than-2-5-billion-records-stolen-or-compromised-in-2017.aspx>

37 ITGovernance website, "GDPR Enforcement and Penalties," <https://www.itgovernance.co.uk/dpa-and-gdpr-penalties>, Accessed October 1, 2018

About the Authors

Amith C is a Senior Consultant with the market intelligence team at Capgemini Financial Services. He has more than six years of experience in IT, consulting and strategic analysis.

Amit Kumar is a Senior Consultant with the market intelligence team at Capgemini Financial Services. He has more than seven years of experience in consulting and strategic analysis with a core focus on banking and financial services.

Avinash Saxena is a Senior Consultant with the market intelligence team at Capgemini Financial Services. He has more than eight years of experience in strategic market research and IT consulting with a focus on banking and financial services industry.

The authors would like to thank the SMEs listed below for their contributions to this paper:

- Alvi Abuaf, Executive Vice President
- Colin Payne, Vice President, Head of Digital Retail Banking at Capgemini Invent
- Erik Van Druten, Principal, Solution Manager Banking
- Pascal Benarousse, Head of Retail Banking Practice France
- Chirag Thakral, Portfolio Manager
- William Sullivan, Vice President, Global Head of Market Intelligence
- Tamara Berry, Editor, Content Manager, Market Intelligence Group

Disclaimer

The information contained herein is general in nature and is not intended, and should not be construed, as professional advice or opinion provided to the user. Furthermore, the information contained herein is not legal advice; Capgemini is not a law firm, and we recommend that users seeking legal advice consult with a lawyer. This document does not purport to be a complete statement of the approaches or steps, which may vary accordingly to individual factors and circumstances, necessary for a business to accomplish any particular business, legal, or regulatory goal. This document is provided for informational purposes only; it is meant solely to provide helpful information to the user. This document is not a recommendation of any particular approach and should not be relied upon to address or solve any particular matter. The text of this document was originally written in English. Translation to languages other than English is provided as a convenience to our users. Capgemini disclaims any responsibility for translation inaccuracies. The information provided herein is on an 'as-is' basis. Capgemini disclaims any and all representations and warranties of any kind concerning any information provided in this report and will not be liable for any direct, indirect, special, incidental, consequential loss or loss of profits arising in any way from the information contained herein.



About Capgemini

A global leader in consulting, technology services and digital transformation, Capgemini is at the forefront of innovation to address the entire breadth of clients' opportunities in the evolving world of cloud, digital and platforms.

Building on its strong 50-year heritage and deep industry-specific expertise, Capgemini enables organizations to realize their business ambitions through an array of services from strategy to operations. Capgemini is driven by the conviction that the business value of technology comes from and through people. It is a multicultural company of 200,000 team members in over 40 countries. The Group reported 2017 global revenues of EUR 12.8 billion.

Visit us at www.capgemini.com

Learn more about us at: www.capgemini.com/banking or
email: banking@capgemini.com



People matter, results count.

The information contained in this document is proprietary. ©2018 Capgemini.
All rights reserved. Rightshore® is a trademark belonging to Capgemini.