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ACCELERATE DIGITAL

12 Trends Reshaping Banking in 2019

BANKING TRENDS

Preface

The current pace of change in banking dwarfs any precedent. And the future will all but mirror the evolutionary pace ever recorded. A visible shift in the delivery of banking services best illustrates this change.

About fifteen years ago, more than half of all banking transactions occurred within the branch network; today, that number is down to less than 10 percent. The bigger news, however, is that by 2022, at least one in two transactions is likely to flow through channels not owned by banks but by a multitude of digital ecosystems, FinTechs, and other third-party interfaces, thanks to open banking and the rapid rise of digital channels.

Clearly, new digital realities are closer than they appear.

In this rapidly changing universe, winners will be those that are agile enough to anticipate and respond to change, innovative enough to create and deliver new customer value, and competent enough to take advantage of the fresh possibilities presented by digital technologies. Their sharpness of vision and speed of execution is what will define them. And a remarkable understanding of changes not only within the industry but also implications of developments outside of it is what will differentiate them. A truly digital strategy to take advantage of APIs for customer-centric innovation, new open banking realities, and transformational industry trends will be crucial for success. This report, a reflection of our experience and understanding of markets the world over, brings to you twelve such trends. Each trend points towards the definitively apparent role of technology as an enabler and driver of business. In 2019, all banks will accelerate their digital transformation efforts and journeys to interlock technology with business for substantively positive outcomes.

At Infosys Finacle, we have the unparalleled opportunity to learn, experience and shape the evolution of banking in over 100 countries. With the Trends report each year, our endeavor is to inform your direction and discretion, and strengthen your digital journey. No forecast, prediction or trend can provide a model playbook for success, and the individual trends captured in the report may not play out concurrently or identically across the globe. I am confident, though, that this report will empower you with sound insights about the changes likely to impact your business over the next twelve months. It will, most certainly, be invaluable to help you better identify your organization's strategic priorities for the coming months.

We hope the report helps you discover new sources of value and leaves you with ideas to convert digital possibilities into new realities.

Wishing you a year that sets you up for success in 2019 and beyond!

Warm regards,

Sanat Rao
Chief Business Officer and Global Head
Infosys Finacle

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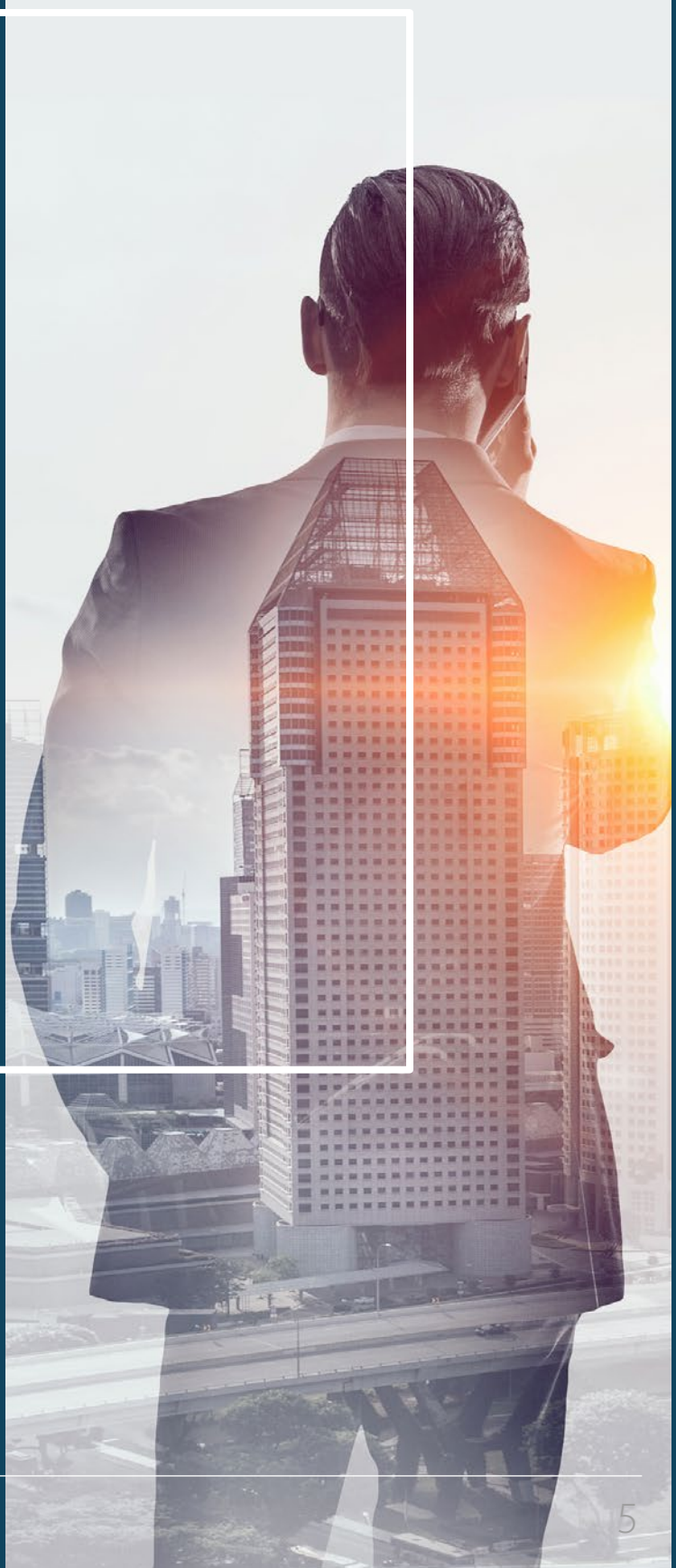
BUSINESS TRENDS



1. FORWARD MARCH!

THE TRANSITION TOWARDS PLATFORM BUSINESS MODEL ACCELERATES

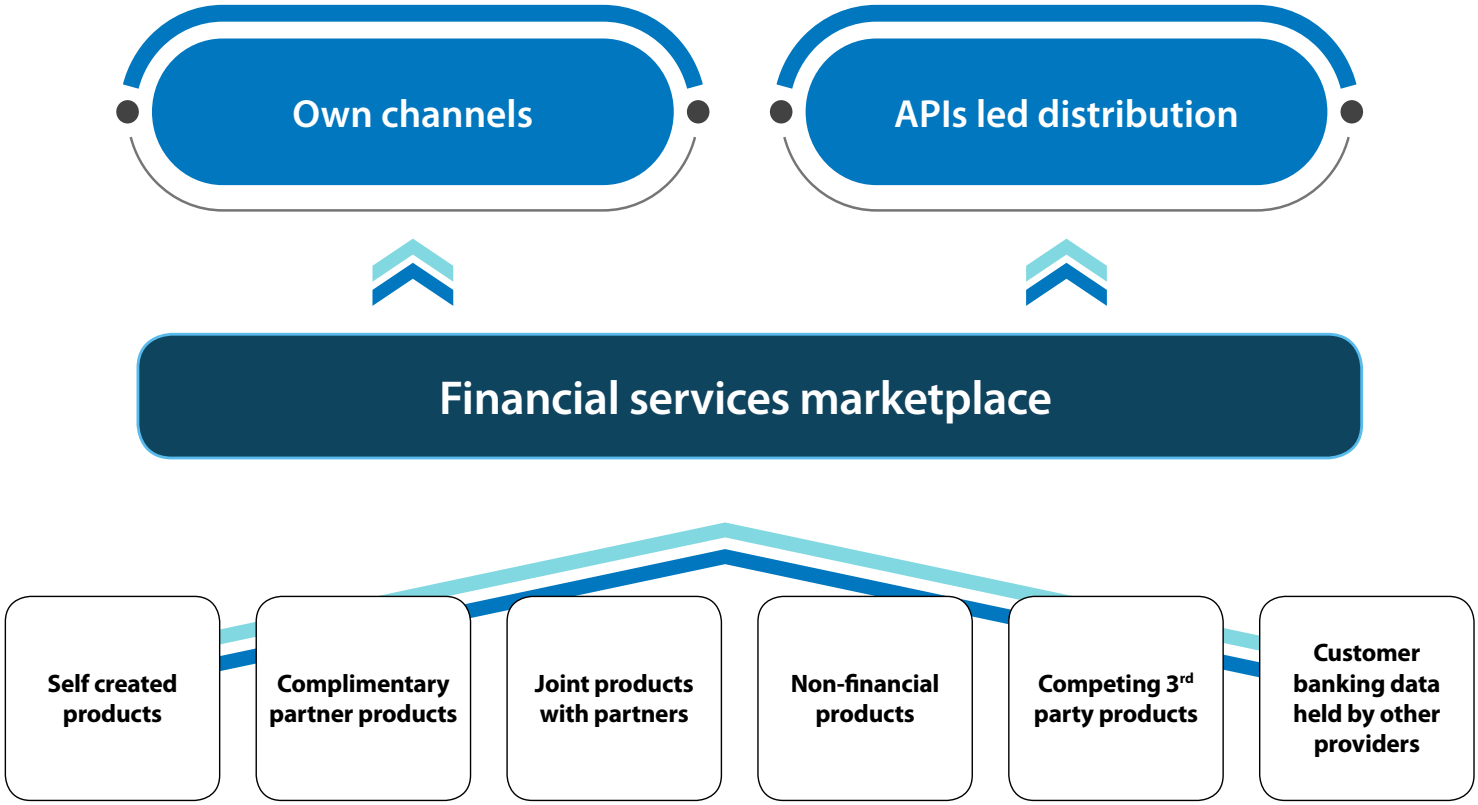
Before launching into the trends for business model transition towards the platform model, let us establish a common understanding of what a platform business model is.

The banking value chain can be broken down into three key identifiable layers. Manufacturing financial products and services forms the first level of value creation, consummating matches and identifying the most suitable product for a customer's unique requirement the second, and delivering value through the distribution layer on a customer's channel of choice the third.

The traditional vertically-integrated pipeline business model where banks manufacture and sell their own products is giving way to specialist roles aligned to these visible layers in the value chain. The evolution is playing out as follows:

- For the longest time, it was only banks that designed and sold their own products. Then, they added complementary partner products, such as insurance, to their stable. The digital age brought in new non-bank players and partnerships, white labeling and co-creation. Now, as banks become open platform businesses, they are bringing non-financial offerings and competing financial products into their fold. Examples include the ICICI Bank-Paytm collaboration in lending; non-financial products ranging from movie tickets to cars; and even competing (and superior) products from third parties such as a high-interest deposit product.
- Next, with open banking becoming a reality and bringing new transparency to the market, banks have no choice but to present the best product and service options to their customers on their own platform, regardless of ownership. Some banks will also look to go beyond banking and play a larger role in the life of their customers. This means banks will go from being monolithic institutions selling products designed in-house and distributed through own channels, to acting as aggregators selling a host of financial and non-financial offerings in a single marketplace.
- Thirdly, banks will bring third-party channels on par with their own. So in addition to distributing via their network of branches, mobile channels, agents,

The Transition Towards Platform Business Model Accelerates



kiosks, wearables, and smart virtual assistants, they will use APIs to sell through third-party apps, FinTech companies, other partners, and even other banks.

In 2019, we predict progress at all the three layers, as banks move towards competing products, open marketplaces and the role of a distributor. However, each bank will present differently based on its current understanding and positioning of the platform model. So those without clarity will refine their vision; those with a clear vision will begin implementation; those that have executed will see early results; the ones who are ahead of them all will mature further. Here it is important to mention that no bank has mastered the platform model yet, and it will be years before they can make that claim. In 2019, many will take the first of many steps towards that goal.

The coming year will see banks evolve diverse approaches based on their unique vision and circumstances. Some will participate in ecosystems, others will curate their own, and yet others will buy.

In 2019, expect success stories from incumbent banks – and not only from Fintech or digital businesses – as the ecosystems of the likes of DBS, BBVA and Ping An mature.

Others will take inspiration from leaders such as Ping An, which has created no less than five ecosystems, one of which promotes good health to reduce the incidence of illness and hospitalization among insurance buyers.

There will be two-speed growth in platform banking. Countries that have mandated open banking by law will progress faster as the traditional pipeline model fast loses competitiveness, forcing banks to pursue alternatives with urgency. In other markets, where there is less pressure, the transition towards platform business model will be steady but relatively slow.

2019 will witness platform banks moving into adjacent businesses, just as adjacent businesses moved – and will continue to move – into financial services. An example is

a large bank in Singapore, which plans to collaborate with a taxi service to popularize it within its own ecosystem, and in return gain access to the partner's customers. In a reverse scenario, another taxi operator is encroaching the bank's small business territory by offering loans and deposits to its own drivers and customer ecosystems. Other non-bank platforms, such as Alibaba, WeChat, Google, Apple, Amazon, which have been enabling select financial businesses for some years now, will continue on that path and will expand their portfolio. Together, these crossovers will create additional value for customers.

Business model transition from pipeline to platform in 2019 will be about making progress in a journey that has barely begun. Faced with the possibility of consolidation, banks that adopt the platform model early will end up on the winning side. While they may not have evolved their platform models fully since there are so many scenarios and avenues for value creation, early experimenters will have the advantage of time and learning over latecomers. We hope more banks seize the opportunity in the New Year.

"If banks can't offer something more valuable than Amazon Prime, then we're probably in the wrong business."

- **Bradley Leimer**, Co-Founder, Unconventional Ventures, Former Head of Innovation, Santander U.S.

2. REIMAGINING CUSTOMER JOURNEYS

ELEVATING CUSTOMER EXPERIENCE AND ENGAGEMENT TO A NEW HIGH

In our trends forecast over the years, we have consistently emphasized the importance of customer experience in differentiating the winners from the laggards. Clearly, most banks recognize this. And thus to deliver market-leading customer experiences, progressive banks are reimagining customer journeys holistically.

In a recent research about customer experience, Gartner discovered that customer journey analysis is the top priority for customer analytics teams and initiatives at enterprises. The findings confirm what we know intuitively and what progressive banks are putting their faith and investment in – that reimagining customer journeys is a huge step in building market-leading customer experiences.

What do we foresee in the coming year?

Banks will advance the start of their customer journeys to the point of primary intent, that is, when a customer recognizes a primary need not when she starts acting on the secondary financial need that follows it. This means that a mortgage journey will start not when a customer comes looking for a loan, but when she decides to buy a house. Customer experiences will become more intuitive and frictionless as banks embed primary need considerations and purchase-cycle in customer journey design.

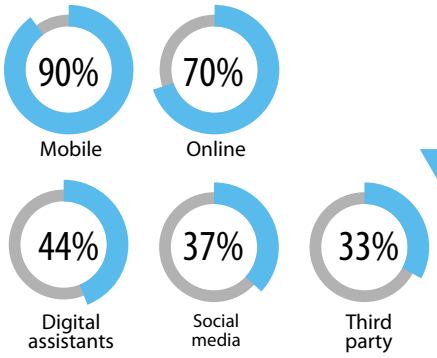
Likewise, business banking will also evolve for enhanced customer context. The trend is already visible in a move by several leading banks who have begun offering ERP solutions to small business clients so that banking services are embedded in business workflows. Some, like Deutsche Bank and HSBC, have set up portals where their small business customers can interact and trade. In the new year, more and more banks will participate in online marketplaces that serve a primary need.

In 2019, third-parties and new digital entrants will continue to dot the banking landscape, especially in the manufacturing, distribution and innovation areas of the value chain. And thanks to open banking the trend is likely to accelerate. Mapping and designing customer journeys will become a more comprehensive exercise as customer touch-points multiply. Transactions will not only originate on banks' own channels but also on third-party channels. Most banks are already ramping up their teams to prepare for these new and emerging scenarios. Teams in charge of designing customer journeys are moving towards a more multidisciplinary mix.

Banks Reimagine Customer Journeys to Enhance Customer Engagement

Digital and third party channels set to multiply

[1]Top 5 primary banking channels for 2022



Banks must reimagine their customer journeys for own and third party channels

Shift from isolated touch points to unified journeys

- Financial institutions that digitize the most important consumer journeys can increase revenues up to 20% and reduce costs by up to 25%

Technologies that will have a significant impact

Artificial intelligence	Customer service, credit scoring, fraud management
Open APIs	Product delivery channels
Blockchain	KYC, secure transactions / remittances
AR / VR	Personal Finance Management, immersive experiences

Typically a marketing-driven effort earlier, is now expanding to include experts and insights from customer service, IT, user experience, and product development units.

Technology will enrich customer journeys in new ways in 2019 and beyond. After transitioning from physical to digital, and subsequently, AI-enabled channels, interactions will now enter the realm of augmented, virtual and mixed reality.

An early example of AR comes from the mortgage business, where banks, having entered the primary property buying cycle, are overlaying banking information on the digital images of properties that interest their customers. VR will find application in more complex interactions. For instance, using rich visualization for explaining difficult concepts in wealth management. In the new year, expect progressive banks to make the most of new technologies to create rich experiences.

Further, AI and analytics will enable banks to be even more customer-specific than they already are. Banks will create highly personalized, dynamic customer experiences that adapt to the customers' context, including their emotional state, at all times. While customer journeys will still be designed for unique personas, rather than unique individuals, embedded insights from machine learning and analytics will further tailor them to the specific needs of each customer.

Banks will monitor their customer journeys closely and also align their metrics to measure new digital value and outcomes. In 2019, there will see perceptible progress in the shift from focus on disparate touchpoints to a keen focus on customer journeys for supreme customer experiences throughout. Devising mechanisms to act on customer feedback in real-time will be crucial. In 2019, we expect at least a few banks to see success with their total-quality customer experience management initiatives.

"There are many books you can read on how to drive a car, but I would recommend a wannabe driver get behind the wheel. The intent of customer journey mapping is to "get inside the customer's head" to "see," and therefore, understand the customer's experiences."

- **Dr. Chip R. Bell,** Bestselling Author and World-Renowned Authority on Customer Loyalty and Innovative Service

3. OPEN BANKING

NEW WINDOWS OF OPPORTUNITIES OPEN IN 2019

2018 being the year that several countries adopted open banking formally, there is much anticipation around its progress in the coming year.

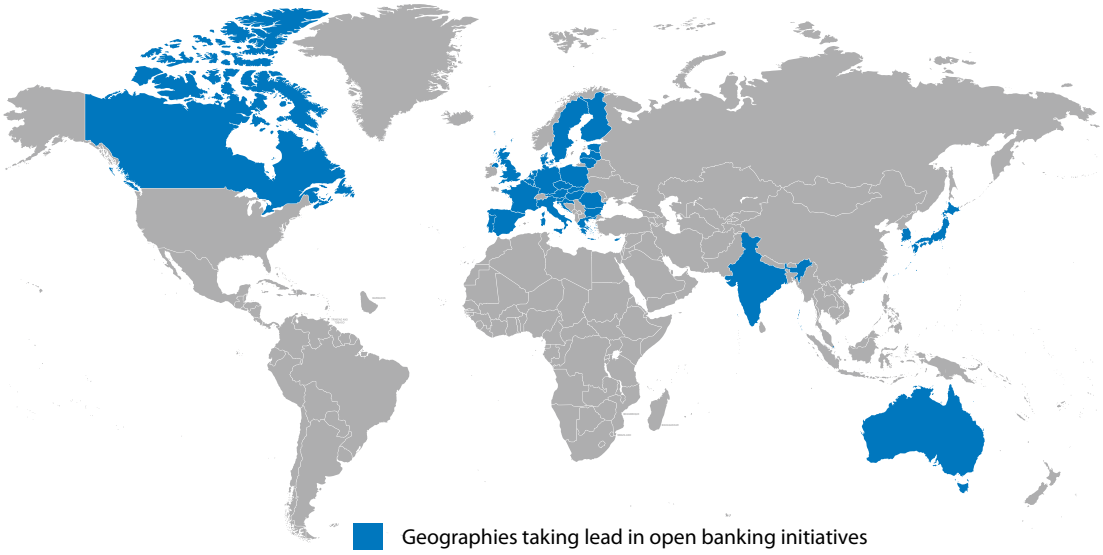
Although open banking was originally intended to increase competition in a business that was concentrated in the hands of a few players in most countries, it is now clear that its impact will be much bigger than that. For one, open banking is transforming the banking business model where a bank manufactures, owns and distributes its products and services through its own channels to one where it chooses to only manufacture, distribute or aggregate own and third-party offerings in a financial marketplace. Although banks have only made an initial foray so far, we expect the open banking trend to mature quickly, and not just because the law mandates it.

While the early adopters with the most mature technology and business strategies will thrive in the open era, the laggards – typically mid-tier and small institutions – will become increasingly vulnerable if they do not act quickly to take advantage of the free movement of data allowed by open banking and similar regulations. To start with, they may lose their customers to progressive rivals, and eventually, their very existence to merger or acquisition. In 2019, we see all banks, big and small, augmenting and enriching their offerings and value propositions to avoid relinquishing customer relationships and relevance.

As the traditional banking model changes to an open one, banking KPIs will need to adapt based on whether the bank is a manufacturer, distributor, marketplace or a combination of the three. The metrics banks use to evaluate a branch, self-service and digital channel network, such as footfalls or customer traffic, cease to be relevant when there's a third party distributing a bank's products. In open banking, banks will acquire customers using tools and techniques that are very different from the traditional sales and marketing campaigns, and must, therefore, measure their performance differently. For example, for services such as Personal Financial Management, measuring the number of sign-ups would no longer be adequate, but quantifying how customers benefit from the service will prove to be a more crucial measure of success and adoption of the service. Also, metrics such as Net Promoter Score, quality of service and new revenue streams will become more critical.

Even in regions where open banking is not a regulatory requirement yet, banks and financial services providers

New Windows of Opportunity Open with Open Banking



Geographies taking lead in open banking initiatives

- United Kingdom
- Singapore
- India
- European Union
- Australia
- Hong Kong
- Canada
- South Korea
- Japan

are proactively taking the plunge into the API economy. [2]Banks that have already launched their API stores have somewhere between 5 to 60 APIs. For example, Citibank Developer Community reported to have 49 APIs. In 2019, we expect a lot more banks to launch their API stores.

As banks look to cultivate rich ecosystems and platforms, we predict this trend to grow stronger and more diverse.

This year, APIs will increase in breadth as well as depth, that is, not only will we see more APIs allowing digital firms, FinTechs and other developers to build real-world applications but also more APIs with production data.

Most banks currently have APIs running in sandbox environment with dummy data. Heading into 2019, this will change as banks will have made sufficient progress to develop the necessary governance controls to take their APIs live with production data.

However, one of the biggest challenges is the existence of multiple API standards, even within a single country, which makes it very hard for an entity such as a FinTech firm to innovate quickly and repeatedly with the APIs of different banks. We believe, the API trend will mature once all the required legislation – including governing the API brokers, who are effectively TPPs (transaction processing parties) – is in place, and banks adopt emerging industry standards rather than developing their own.

Heading into 2019, banks should resolve to let their business organization and lines of business lead the charge towards adopting open banking. The ones that do this quickly will gain significant advantage over the laggards. Banks will also need to determine the extent of access to developers and third-party providers, to make sure they don't play into the hands of agencies looking to snatch their customers. It's best to strike a balance by allowing access to developers and innovators but at the same time monitoring their actions closely to avoid being caught off guard.

"Banks have very firmly moved from viewing open banking as a compliance exercise to an opportunity to compete and innovate. They have worked hard to implement the standards despite many challenges and an ambitious timescale."

- **Imran Gulamhuseinwala,** Trustee of the Open Banking Implementation Entity (OBIE) Service

4. CYBER-DEFENSE VS. HACKER INTELLIGENCE

THE NAIL-BITING RACE INTENSIFIES

2018 was not a happy year from a security standpoint. [3]One estimate suggests losses from cyber attack topped US$ 1.6 trillion in 2018, and will rise astronomically to US$ 6 trillion by 2021. Meanwhile, what's in store for banking cyber security in 2019?

Coming on the heels of a milestone year for data privacy regulation – both MiFID II and GDPR took effect in 2018 – we expect compliance to be top of mind at banks worldwide. GDPR, billed the most important development in data privacy protection in two decades, will change the global privacy landscape. It will force banks to evolve their security controls and exercise appropriate controls depending on the vulnerability or value of information. Revelations, such as a prolonged attack on the Marriott hotel chain that saw the personal information of more than 500 million guests being compromised, only underscores the need for such defenses in 2019.

Data privacy aside, banks will also focus on protecting themselves against malware. Year 2017 saw a surge of large scale ransomware attacks globally, however in 2018 this transpired to be milder; we expect 2019 to maintain this trend.

But new threats will arise due to extensive use of digital technologies – particularly Artificial Intelligence and Machine Learning – in cyber attacks. As enterprises switch to these technologies, so will hackers. AI-related attacks will include exploitation of AI solutions such as chatbots to influence behavior. An example of the latter is the 2016 attack on Microsoft's chatbot Tay, which was manipulated by trolls to post offensive tweets on its Twitter account. Banks will need to be watchful of hackers seeking to poison their applications with malicious bias, such as influencing an AI agent to recommend the wrong type of loan or investment product to customers with the intention of damaging a bank's reputation. News about threats of biometric hacking tools has already started trickling in. Cryptocurrencies will be yet another area to come under increasing attack. [1]Some months ago, hackers compromised five cryptocurrencies. They used massive computing power to manipulate transactions and decamped with huge sums of money. [4]The threat of a "51% percent" attack, where miners acting in concert acquire 51% of a network's hashing power that they exploit to prevent transactions, create double spending and do other mischievous things, is becoming very real.

We expect hackers to up their game further with next-generation techniques, such as probabilistic modeling, to find ways to exploit vulnerabilities that the traditional deterministic techniques fail to identify. Another key development would

The Cyber-Defense Vs. Hacker Intelligence Race Intensifies

Advances in technology raise the stakes

Losses from cyber attacks will amount to $6 trillion by 2021

New threats will arise with new digital technologies:

- Artificial Intelligence technologies
- Internet of Things
- Open APIs
- Cryptocurrencies

Hackers will elevate their game and exploit vulnerabilities with next-generation techniques such as probabilistic modelling

Banks fight back

- Next generation defense techniques
- Stronger security, control and governance for data sharing with open APIs
- Investment in security tools will increase in 2019 – Banks will invest in on-demand cloud-based security solutions
- Combination of technologies in threat intelligence, data leak prevention, user behavior analytics, and access management
- Investment in security talent will increase

be comprehensive governance and security mechanisms for open APIs to prevent malicious use of free movement of data.

How will banks counter these threats in 2019?

Large banks in particular, are evaluating the ability of their security defense tools to withstand AI-based attacks, and are also tightening control over applications. We also expect an uptake of cloud-based security solutions that allow security teams to switch security technologies on demand. On their part, technology vendors would secure their product development lifecycles, besides upholding security best practices.

Security skills will remain in short supply amidst rapidly growing demand. [5]A research by ISACA reveals that one in four enterprises have critical security positions open for more than six months on an average.

We are also observing a trend of organizations developing deep cyber security courseware to train their existing staff.

Investment is on the cards to safeguard banks against "zero-day attacks", that is, attacks that exploit unknown security vulnerability in software. Banks will have to spend big on tools to beat these and other Advanced Persistent Threats in 2019 using a combination of technologies in threat intelligence, data leak prevention, user behavior analytics, access management and cloud security.

"It takes 20 years to build a reputation and few minutes of cyber-incident to ruin it."

- **Stephane Nappo**, Global Head, Information Security, Société Générale International Banking

5. OPTIMIZING DIGITAL-HUMAN INTERPLAY

THE TALENT AND CULTURE ECOSYSTEM EVOLVES IN 2019

Gen Z, a generation exposed to technology profusely in its formative years has begun entering the working world. [6]The generation is estimated to constitute thirty-six percent of the global workforce by as early as 2020.

The unequivocal rise of emerging technologies joins this dominant trend of technologically competent talent in upending workforce dynamics in 2019 and beyond.

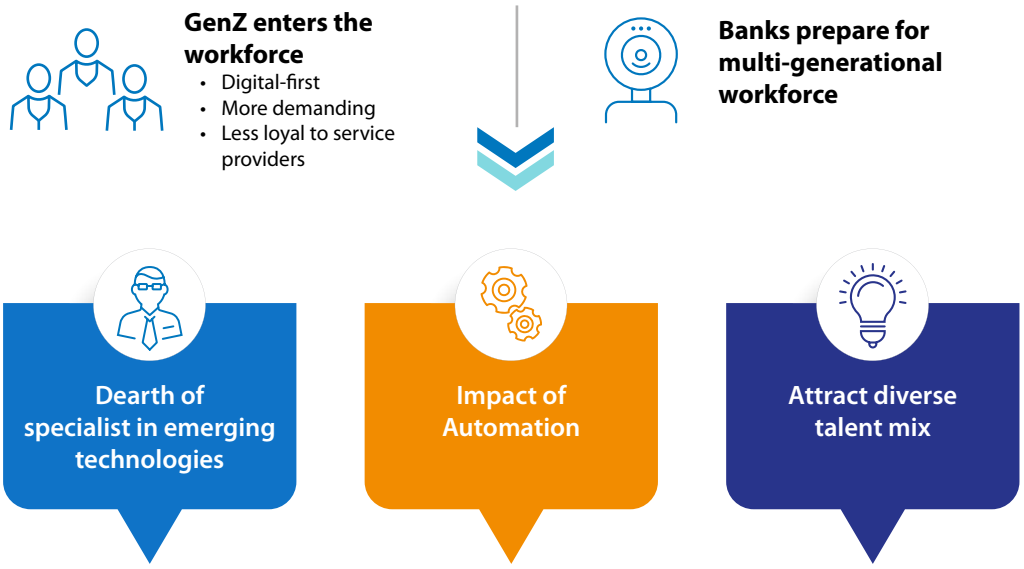
In banking, we see this dual theme of changing workforce and rapidly evolving technologies playing out as follows:

The need for new skillsets is one of the most direct consequences of disruption in financial services. On one hand, digital technologies are helping banks unlock new sources of creating value, and on the other, the increasing sophistication of cyber-attacks is placing a new premium on protection of existing value. At the time of writing this document, organizations are expected to lose about $6 trillion in cyber attacks by 2021. Not surprisingly, the demand for cyber security and digital-security professionals is on the rise and will continue to increase in 2019.

The second crucial skillset will be a breed of experienced data scientists and AI specialists who can take use cases and proofs of concept into production. Over the past couple of years, banks have made considerable investments in the form of joint ventures, centers of excellence and collaborative innovation with industry and academia for a variety of advanced use cases. In 2019, banks and enterprises will evolve their hiring and recruitment practices to win the war for talent that can see them through successful live implementations for tangible business results. Retaining this talent and harnessing its potential will also be a challenge that will require banks to redesign their compensation and progression policies in 2019.

Thirdly, extensive automation will be a crucial building block of digital transformation at banks in 2019. Banks will hire automation experts and consultants who can design a roadmap for organization-wide automation and implement such large-scale programs successfully. This automation of front to middle through to back-office operations will require experts who fully understand the implications of automating a set of processes to make the judicious trade-off between automated and manual processes or centralization and decentralization of operations. What's more, since automation architecture and priorities are unique to an organization, these experts

The Talent and Culture Ecosystem Evolves in 2019



How are banks preparing?

will be required to have a comprehensive understanding of the organization. A fitting analogy for this imminent scenario is the automotive industry of the 90s when two leading behemoths Honda and Toyota rolled out two different initiatives – lean manufacturing and just-in-time respectively – to reap similar benefits of automation.

What are some of the challenges banks will have to overcome as they ready themselves for this new talent?

The university-talent versus talent-demand chasm continues to widen with the pace of development. New market realities demand talent that is not only completely abreast with technological changes but also understands the business of banking. In 2019, we expect enhanced industry-academia collaboration in banking to align student curriculum with market expectations. Banks will collaborate with universities to integrate live projects and expose students to real-world industry challenges.

Compounding the challenge of scarcity of young talent is the dearth of specialists in emerging technologies. In an industry that has been making the transition from manual to automated ways of working for about a decade, the physical documentation, double-entry system, and manual ledger world of banking has been reduced to an F4-F10 world of keystrokes over the years. However, it has left the existing workforce with minimal understanding of the underlying systems and processes. Bringing in AI, security or automation experts for transformation projects is only as effective as the availability and ease-of-access to intelligence within an organization. An understanding of the business is not enough; digital transformation requires knowledge of the customer and interest of the organization and stakeholders within an organization. In 2019, banks will continue to strive for the right mix of people who understand the business, the industry, the customer, and the organization.

A pressing challenge for banks in 2019 will be adapting their culture for the influx of Gen Z, the blend of millennials and Gen Z in their workforce and customer base, and the expanding definition of banking. [7]A recent

study by PEW estimates millennials to hit the 73 million mark in 2019 to outnumber the baby boomers. The number of people between the age of sixty-five and above is projected to triple by mid-century. Banks will accelerate their efforts to attract and retain this diverse talent mix this year.

2019 will also be the year when the gig economy makes its way into banking. Not only will banks welcome employees to work on short-term projects but will also design organizational practices, so the rest of the organization adapts to the trend. As banks embrace the greatly expanded definition of banking, diversity in the workforce will expand to dimensions beyond age and gender to include talent from industries outside of banking and disciplines beyond banking and commerce.

To do away with old practices of extensive documentation and time-consuming approval processes that deter millennials from using a service, banks will leave behind their hierarchical structures and catch up with game-changing digital upstarts.

Continuous learning and customer-centricity will be deeply ingrained in the culture, and organizations will make learning programs available on mobile devices. Employees will be expected to demonstrate customer-centric behavior and modern market practices at all times. A crucial part of a customer-centric culture will also be real-time feedback. The long-recognized benefits of periodic appraisal systems will soon become relics of a dated mechanism at leading customer-centric organizations. These organizations will create mechanisms to cascade real-time feedback from customers down to every business unit to align behaviors and practices.

Thinking sharp, moving fast, acting incrementally but pervasively, and learning continuously will be the guiding mantra for banks this year.

"The key skill sets in this new world will belong to the data scientists who understand when, why, and how customers use bank products, and the storytellers who can place the product or service in the customer's life when and where they need it."

- **Brett King**, International Futurist, CEO, Moven

6. DATA PRIVACY AND ETHICS

NEW RESPONSIBILITIES IN THE NEW YEAR

Privacy of customer data is no longer a concern for financial service providers alone. The Facebook scandal of 2018 made it adequately clear that data can be exploited for purposes that are not just purely financial in nature. Banks have been a trusted custodian of people's finances and their data for eons. One could argue data being just as valuable an asset as wealth that banks hold for their customers. With these changing paradigms, banks are now forced to evolve around a different set of risk management processes related to managing data even if there are no direct financial implications for the customer.

2018 saw two significant regulations coming into force. The data privacy law GDPR mandates businesses to protect customer data and ensure that the customer is aware of the purpose for which the data is used. On the other hand, open banking and PSD2 open up the market to transaction processing parties and compel banks to share customer data with developer ecosystems and non-bank providers of financial services, exposing the inherent risk associated with data sharing. Against the backdrop of these regulations, banks find themselves in a somewhat conflicting situation.

2019 will see banks beginning to walk the tightrope between sharing data to foster innovation and protecting data to save customer's interest.

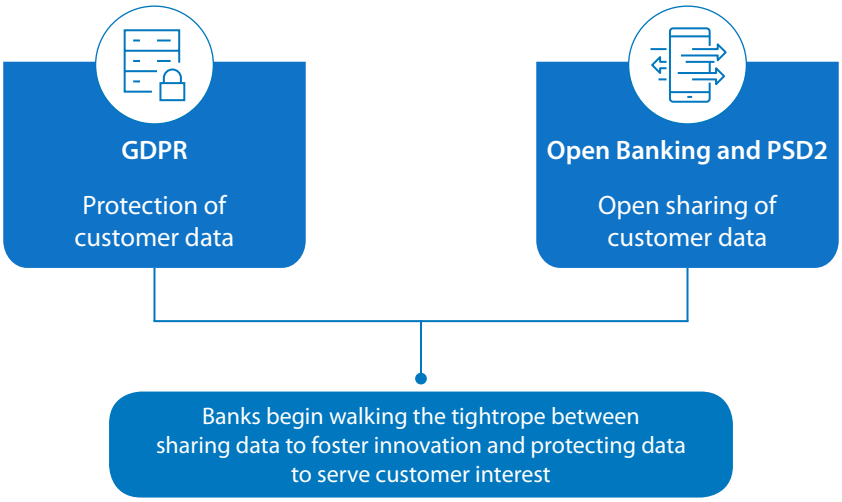
How is the trend likely to play out in banking? Regulation v/s Innovation. Can banks manage both?

In banking, ordinarily, any new innovative process or product quickly gets followed-up by a set of regulations. The open banking context was quite the opposite. Here, in a departure from the typical trend, regulation fostered considerable innovation.

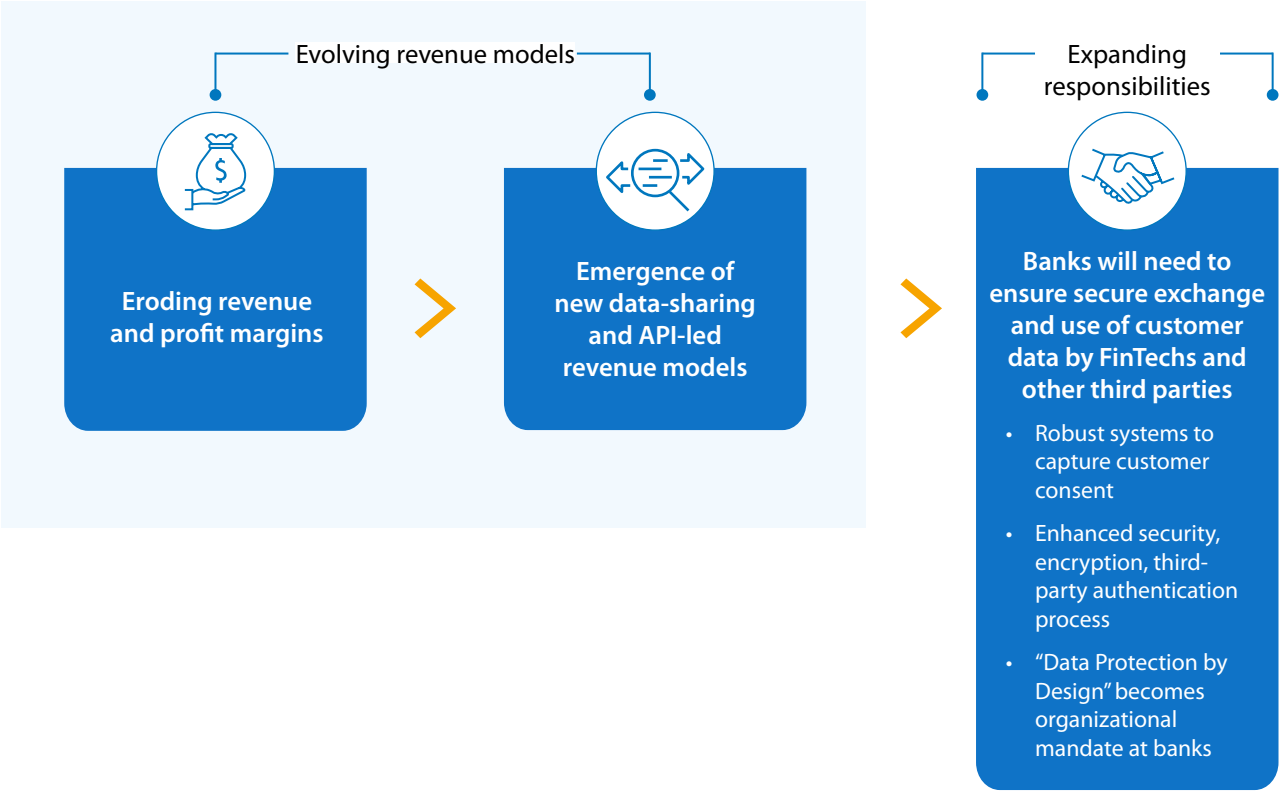
The free movement of data is not only helping banks bring in new customer-centric solutions by tapping into third-party developer ecosystems and FinTechs, but also benefiting the rise of the FinTech sector by presenting new opportunities across the industry. With FinTech partnerships, banks which are limited by their large legacy operations, gain a level of agility that they have never enjoyed in the past. These trends have revitalized the industry with an innovation culture long-known to elude banking. What's more, with these developments the financial services sector has also begun attracting human

New Responsibilities for Banks in the New Year

Banks find themselves in a delicate situation



New responsibilities for banks in 2019 and beyond



capital with new diverse skillsets and perspectives into the industry, a workforce challenge they had been grappling with for some time now.

Banks have a standard revenue model centered around spreads, transaction-based income, advisory fees, and trading income. Imagine an income stream based on data sharing thrown into that mix? The proliferation of non-bank financial service providers throughout the banking value chain is likely to cause a level of disintermediation that will move some customers away from banks. This is the revenue that banks potentially stand to lose. Representative studies indicate about a 33% revenue shift from traditional banks to FinTechs and new digital entrants, in an ideal market environment where customers avail third-party options freely for transactions, as intended by open banking. What banks lose in transaction-based revenue in cases such as these, they will make up in new data-sharing revenue. The phenomenon is already underway, and in 2019 we expect this shift to accelerate. Banks will also use data-driven insights and API-led revenue models to become more contextual, offer relevant services, and increase cross-selling.

However, this also places the onus and responsibility for secure sharing of data on banks. We expect banks to go beyond the minimum regulatory requirements for data and privacy and adopt comprehensive measures to protect customer data. Not doing so could cause sizeable and permanent damage to their reputation, brand, stock, and market value. In other words, expect banks to juggle the multi-dimensional act of ensuring proper management of client data, facilitating appropriate and secure use of this data by FinTechs and digital players, meeting compliance, and still being able to monetize the data to offset the loss of direct income.

Heading into 2019, banks will bolster their governance significantly to play the new role of the principal orchestrator and facilitator of secure exchange of customer data with third-parties. A fresh assessment of existing operations and processes to include a robust consent management system for explicit permission of the customer will be crucial. Strong encryption, security standards, third-party authentication process, and real-time transaction processing will also be paramount. Banks will imbibe the philosophy of "Data Protection by Design and Default" at every level within the organization.

With all the moving parts around regulation and innovation, banks find themselves forced into situations they must navigate effectively to survive and compete. Where we stand today is just the starting point – every new data breach will call for additional controls. The pace of change in the industry will only increase and so will expectations and demands of customers, which will compel banks to innovate and will potentially introduce certain new risks.

Demonstrating strong ethical data practices will be integral to building an organization's character, which alone will generate customer trust amidst rapidly increasing threats and breaches. Privacy and ethics will not just be a compliance requirement, but a competitive differentiator in 2019 and beyond.

"Money equals business which equals power, all of which come from character and trust."

- **John Pierpont Morgan**, 19th century American Financier and Banker

TECHNOLOGY TRENDS

7. ACCELERATING ARCHITECTURAL EVOLUTION

ACHIEVING NEW LEVELS OF AGILITY, SCALABILITY AND RESILIENCE

In our 2018 forecast, we spelled out the five layers of a reference architecture to harness the potential of the confluence of technologies. We also talked about a progressive approach towards modernization for that future. In 2019, the structural relationship between the technological nuances of that architecture and its business implications will become exceedingly clear. Taking a leaf from the books of digital disruptors such as Amazon and Alibaba, the reference digital architecture in 2019 will evolve to embrace greater customer and business context as guiding principles of design and technology enablers. The following are the five pillars of this reference digital architecture:

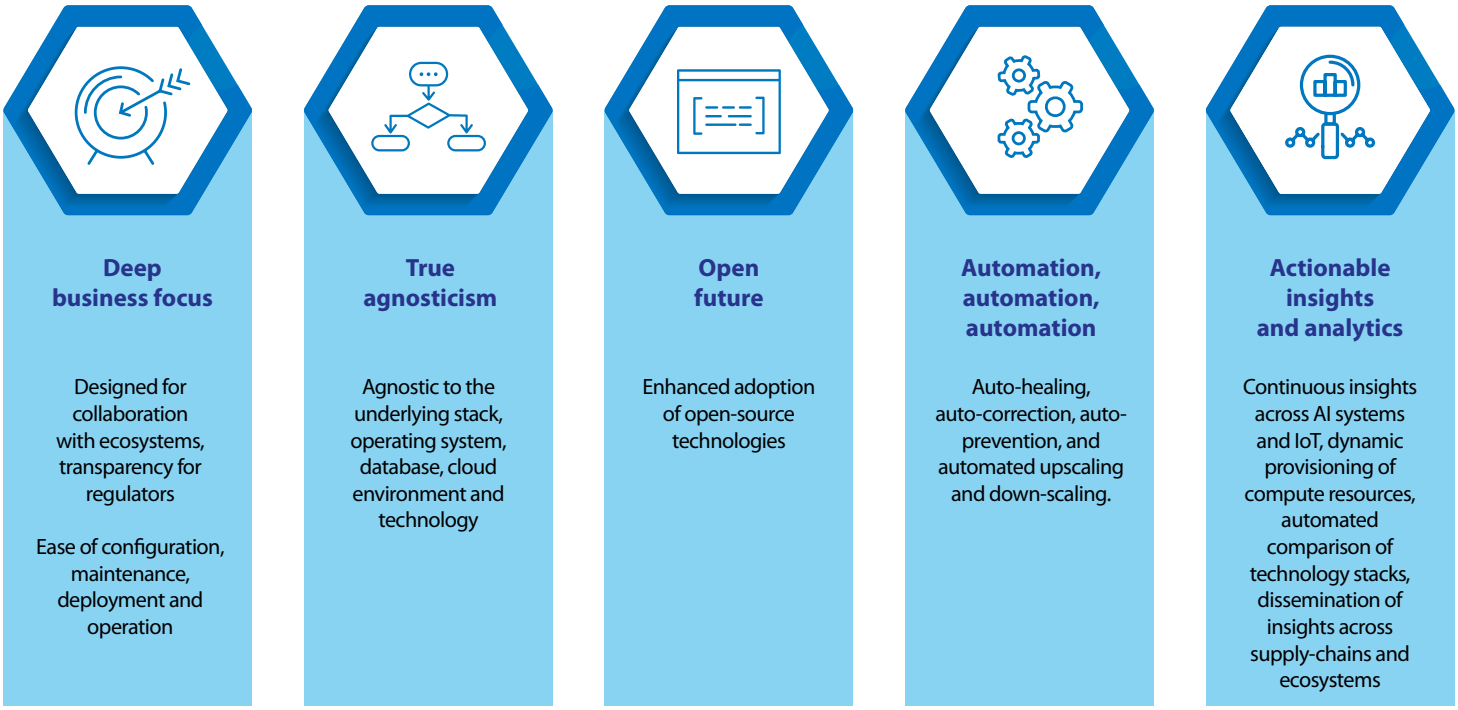
- A deep business focus will be the central feature of a reference digital architecture in 2019 and beyond. In technological parlance, this guiding principle essentially translates to building an architecture that eliminates inadvertent technical debt. This dynamic architecture would allow fast refactoring without huge infrastructural expenses and business impact every time a new technology or requirements come along. Secondly, this reference architecture will be designed for collaboration, that is, considerations and requirements for active collaboration with ecosystem players, partners, and FinTechs will be an architectural principle, and not layered on later.

A modern digital business requires agility to drive customer-centric innovation and create new sources of business value. The reference architecture for a digital business will drive these business outcomes with API-driven design for collaboration and exchange.

At the same time, it will allow and facilitate enhanced transparency for another crucial stakeholder, the regulator. Lastly, an architecture that enables all business applications to deliver the value they are intended for with the right process enablers must have four fundamental elements embedded in design. These are: ease of maintenance, ease of configuration, efficiency in deployment, and agility of operation. Failing to ensure these critical elements can undermine the results of the most efficient of architectural designs.

Reference Digital Architecture Evolves for Greater Customer and Business Context

Five pillars of this reference digital architecture:



- Today, an e-commerce major is also a cloud service provider and a digital wallet also a leading payment bank. In this digital world of blurring industry boundaries, the reference architecture cannot be restrictive. It will be as easy to adopt for a telco offering financial services as for a challenger bank. Furthermore, in 2019 we will see digital reference architecture evolving towards the future-state of true agnosticism, defined as: being agnostic to the underlying stack, operating system, database, cloud environment, and technology.
- Taking the above principle of 'path of least restriction' one step further is the principle of 'open architecture'. In an increasingly open future, an open reference architecture will be built for maximizing and optimizing the use of open source technologies as opposed to proprietary technology stacks. It will be designed for the four C's of collaboration, co-development, co-innovation and co-creation with global developer communities.
- The fourth crucial guiding principle of a modern digital reference architecture in 2019 will be automation-by-design. More than a design built for introducing RPA for rule-based repetitive tasks pervasively, we define automation-by-design as a more holistic concept that encompasses principles such as auto-healing, auto-correction, auto-prevention of potential cyber-attacks, and automated upscaling and down-scaling.

Spanning all the above will be the over-riding theme of comprehensive analytics – analytics that drive deep business focus with continuous insights across AI systems and IoT sensors for context-driven experiences; analytics that drive true agnosticism by dynamically provisioning resources on the cloud or comparing technology stacks, operating systems and database; and analytics for gleaning and disseminating insights across diverse ecosystems and supply chains to realize the expanding definition of banking that goes beyond financial services.

The five guiding principles and pillars explained above define the end-state digital reference architecture for seamless and frictionless user-driven experiences. However, the key challenge that banks will continue to face in getting there, is the challenge of transitioning from existing monolithic legacy estates to plug-and-

play services that can be refactored dynamically in the future. In the new year, banks will ask themselves a few new questions and will continue to seek answers to a few old ones to define or course-correct their unique transformation journeys. Some of these questions include: What is the most suitable path for progressive transformation – monolith to modular to micro-services, or is implementing a new digital core system from scratch the way forward? What is the best approach to be cloud-native when all the applications are not entirely ready for the cloud?

2019 will be the year technology teams at banks accelerate their journey of architectural evolution to be completely hand-in-glove with business.

"This, to me, is the battleground when I'm talking about the digital revolution, the digital human, the digital bank: If you do not get cognitive, predictive, proactive, custom analytics that give the customer far more informed view about their financial affairs, you will not be the partner for that customer in their financial future."

- **Chris Skinner,** Author of the Bestselling Book Digital Bank, and Chair of the European Networking Forum - The Financial Services Club

8. AI IN THE BANK

EXPANDING SCALE AND CAPABILITIES IN 2019

2019 will see Artificial Intelligence (AI) technologies become even more influential in the success of financial services businesses. [8]In the 2018 Innovation in Retail Banking study presented by EFMA and Infosys, 67 percent of respondents named AI and Machine Learning as the technologies with the greatest potential to impact banking in 2019.

The impact will be felt throughout the enterprise, changing even the foundational principle of successful banking from scale of assets to scale of data usage. At some banks, such as Bank of America and Swedbank, for example, smart virtual assistants are improving service efficiency by taking over a substantial chunk of customer support. In 2019, we see AI use cases extending to collections, precision marketing, compliance, and even talent management. Natural Language Processing (the tech underlying chatbots) will gain traction in 2019, with up to forty percent of large businesses across industries implementing it before the year closes. In financial services, a growing number of banks will choose to scale their AI projects by collaborating with AI FinTechs in 2019.

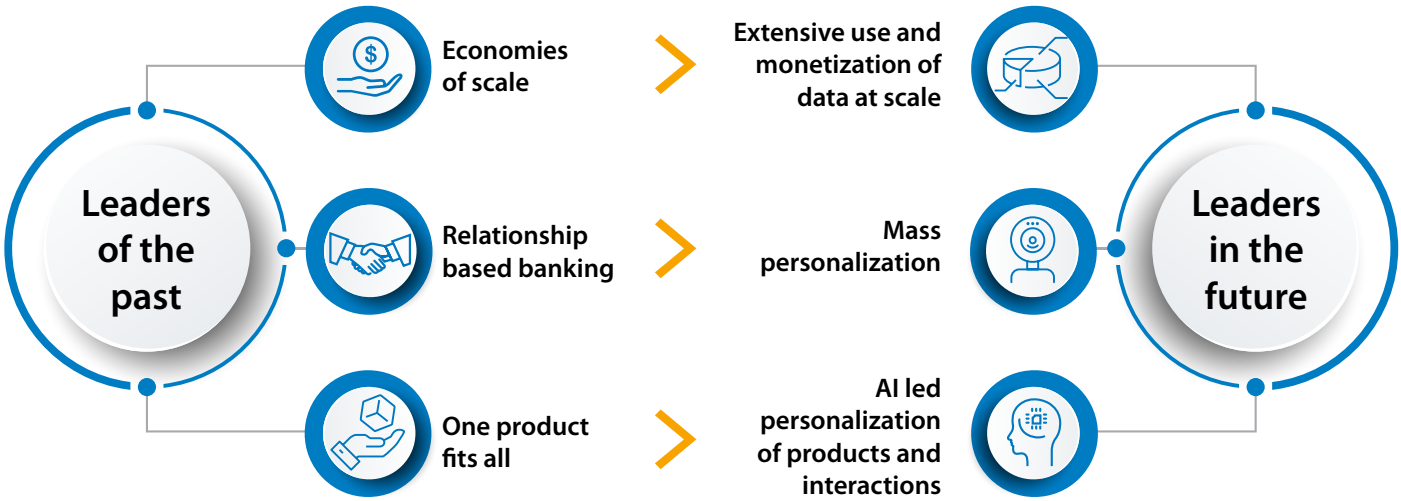
Almost seventy percent of respondents to the Efma Infosys survey expected AI to scale up benefits in customer service and risk/fraud management by 2022.

> **Customer experience will become even more personalized as banks adopt best practices of digital players such as Amazon to employ AI for customer profiling and then tailor interactions at massive scale, make recommendations, and propose next best offers.**

AI will also transform identity management by allowing customers to determine the level and factors of authentication, based on their device and risk tolerance.

Here it is necessary to emphasize that AI will impact almost every aspect of banking operations by amplifying human capabilities, but it will not necessarily replace people in large numbers in the near future. However, there is a strong possibility that the technology will redefine job profiles at banks, for instance, by blurring the distinction between front, middle and back office tasks. Imagine that a customer requests to transfer a large sum

AI Expands Scale and Capabilities



of money to a country that is watch-listed. Today, the front office accepts the transaction; the middle office assesses its risks; and the back office subsequently settles or denies it. Someday in the future, AI will use its accumulated knowledge to determine if a transaction is permitted or not, and instantly process or reject the transaction at the point of contact itself.

In 2019, AI will influence the performance of various lines of business within banks. The bank deposit, popular with customers as a simple and safe way to earn a return on savings, could go out of favor by 2022. AI will be able to come up with superior alternatives to fulfill individual customers' expectations for the highest returns at the lowest risk and turnaround time with customized products. For instance, it is possible for AI to shift a customer's money daily between different savings options – from money markets to foreign exchange – to optimize returns without undue risk. AI can impact the lending business similarly by connecting prospective borrowers to an ecosystem of lenders so they can find a loan that best meets their needs.

At a broader level, AI technologies will be instrumental in simplifying traditional lines of business into a set of layers – the first comprising routine financial transactions (such as payments) which would integrate with the daily digital life of consumers to be almost invisible; the second consisting of products and services differentiated by insights and personalization where AI will participate in customer interactions; and the third highly automated layer of business-to-business interactions.

With so much AI-driven change in the offing, banks should gear up for building their AI skills in 2019 and expand their capabilities organically as well as through partnerships. There is no time to lose.

> "It's going to affect virtually every technology that's out there now and lots of technologies that we haven't thought of yet. AI is going to be a massive trend for years to come."
>
> - **Brian Burke**, Chief of Research for Enterprise Architecture and Technology Innovation, Gartner

9. BLOCKCHAIN TRENDS IN 2019

ADOPTION, SCALE AND SCOPE EXPANDS

2018 was an important year for Blockchain, bringing together early commercial adoption fueled by initial enterprise releases, regulatory warmth and new Blockchain ecosystems. We predict 2019 will take those trends forward at speed, and also bring new developments.

The appetite for experimentation that we saw in 2018 is petering out, to be replaced by commercial adoption in 2019.

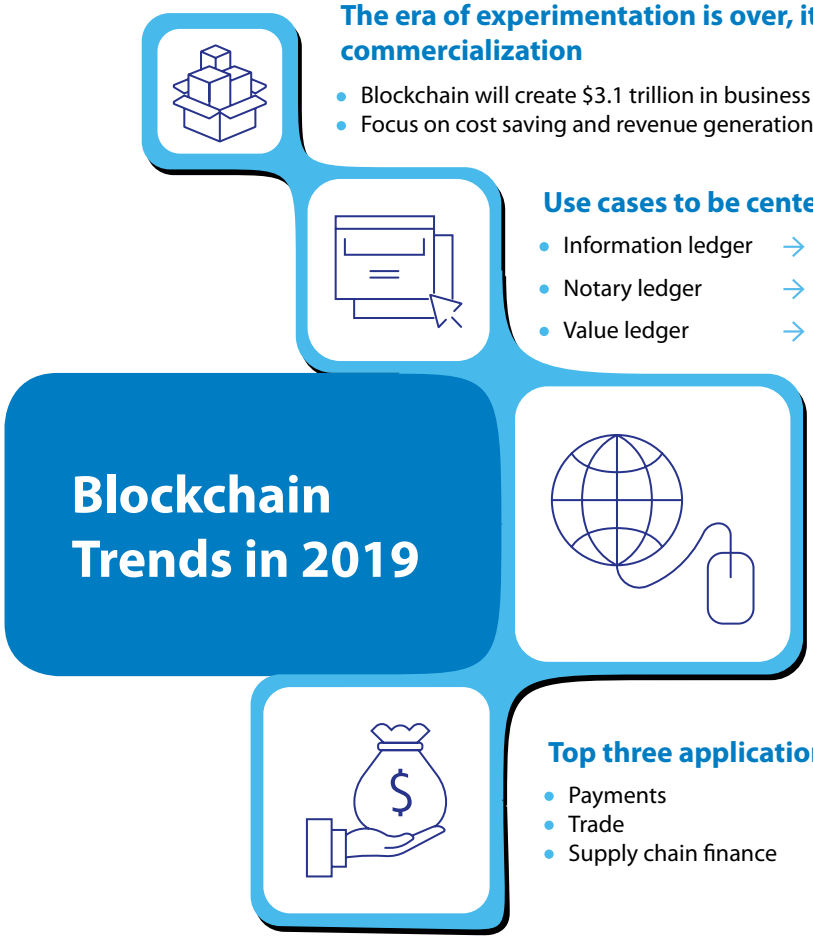
Enterprises seem to have grasped the implications of Blockchain and will seek to not only save cost but also generate revenue from it. There is particular interest in Blockchain as a single source of truth, tokenization, smart contracts and automation capabilities.

Use cases for Blockchain will assign it one of three roles – a ledger to exchange financial value, an information ledger, or a notary ledger for public services. We expect significant commercial adoption of the information and notary ledgers – for purposes such as digitizing trade documents and land records – but traction in the value ledger will take time since it requires more clarity, including on the regulatory front.

The consortium trend will pick up speed in 2019 with both single-industry and cross-industry alliances emerging to form Blockchain ecosystems. Based on our experience in co-creating India Trade Connect, a Blockchain-based ecosystem of 13 banks and some insurers, service providers and other businesses, we believe the best consortium model is multi-industry (for a broad ecosystem) but geo-specific (for focus and control, and to get it going). It is crucial to recruit a large number of participants to take the ecosystem to a minimum viable size that delivers meaningful value. The rise of ecosystems will be accompanied by increasing co-opetition as different banks pool their complementary strengths for mutual benefit.

In 2018, banks mainly experimented with Blockchain for payments. Now, there is growing interest in deploying it in trade finance and supply chain finance, and in 2019 we expect that at scale in both retail and corporate banking. This will need the involvement of large, influential entities. An example comes from Australia, where a stock exchange has decided to replace its legacy system with one that is Blockchain-enabled, and will, therefore, drive all capital market participants, from custodians and brokers to dealers and asset managers, to

Increase in Commercial Adoption, Scale and Scope of Blockchain



The era of experimentation is over, it's time now for commercialization

- Blockchain will create $3.1 trillion in business value by 2030 – *Gartner*
- Focus on cost saving and revenue generation

Use cases to be centered around the below three roles:

- Information ledger → Exchange of information
- Notary ledger → Exchange of legal documents
- Value ledger → Exchange of value

The consortium trend will pick up speed in 2019

- Cross-industry rather than single industry
- Geo-specific
- Sizeable networks and ecosystems

Top three applications

- Payments
- Trade
- Supply chain finance

align with a single technology stack and follow standardized processes. In the case of trade/supply chain finance, this responsibility must be taken up by parties who interact at scale.

Blockchain adoption will also spur growth in adjacent technologies such as Cloud, Artificial Intelligence and the Internet of Things. In fact, based on our implementations at several banks, we expect the industry to use Blockchain in combination with other technologies – rather than singly – to maximize its impact.

In the past few years, banks gradually lost direct contact with customers as other parties, from FinTech firms to giant technology companies, stepped into niches such as lending and payments. In 2019, Blockchain could give disintermediated banks a chance to reclaim their customer relationships by assuming the role of an aggregator in ecosystems they curate along with partner vendors. And that is one more reason for embracing it.

"The old question "Is it in the database?" will be replaced by "Is it on the blockchain?"

- **William Mougayar**, Author, The Business Blockchain, Investor, Analyst, Blockchain Theorist and Strategist

10. ENHANCING BUSINESS VALUE

A STEADY ADVANCE TOWARDS PUBLIC CLOUD

Industry estimates suggest that enterprise workloads double every five years. Not surprisingly then, cloud with its benefits of scalability and elasticity is outpacing dedicated infrastructure steadily. [9]The Cisco Global Cloud Index estimates that by 2021, 94% of all workloads will run in some form of cloud environment, private or public.

In our 2018 prediction for cloud, we indicated a growing adoption of public cloud in the enterprise. The stark contrast that most enterprises today engage with not one but multiple public cloud providers, as opposed to only 25% enterprises just over a couple of years back, points towards an accelerated adoption of public cloud over the next twelve months and beyond. This accelerated adoption is as much a result of the explosion of workloads as it is of the growing maturity of cloud services. Enterprises are progressively opening up to the idea of moving critical workloads to the public cloud. There is an increasing realization that workloads in public clouds by leading providers such as AWS, Azure and Google are less likely to be exposed to security threats as compared to those in traditional data centers.

In financial services, a large number of tier 2 and tier 3 banks are turning to the public cloud to expand their operations beyond their home presence to international markets.

These banks are typically inclined to start small with limited branch operations in these new geographies but to start fast. Cloud is a natural fit for their requirements since it provides them the agility to establish quick set-ups with rollouts spanning no more than five to seven months. An end-to-end solution from a cloud service provider and an ISV instead of evaluating and negotiating with data center providers has invariably emerged as the preferred path in all our conversations with these banks. What's more, engaging with leading public cloud providers helps these banks navigate the complexities of meeting compliance requirements in new geographies. Limited scale also makes these geographies the perfect test-bed before these banks go down the public cloud path on their home turf where they operate at a reasonably large scale. We see a similar trend at play at large tier 1 banks exploring multi-country roll-outs in new geographies.

Two big developments accelerating cloud adoption in banking are the emergence of new channels for consumption of banking services and the coming of

A Steady Advance Towards Public Cloud

Drivers for cloud adoption

Demand for quick provisioning and elasticity in the digital future

Coming of age of the API economy led ecosystems

Integration with FinTechs that are cloud-first

Growing confidence in public cloud

Mature end-to-end offerings by leading providers such as AWS, Azure and Google

Lower likelihood of security threats

Partnership with leading cloud providers who understand regulations in different regions makes meeting compliance easier

Cloud will be crucial for emerging digital technologies and channels

Need for quick scalable computing for digital channels

Open banking is setting cloud-based innovative business models in motion

age of the API economy. Besides, governments in many countries have opened the market to new players. Globally, self-service with digital-only banking is on the rise enhancing the adoption of SaaS and cloud-based end-user applications. The demand for quick provisioning and elasticity in the digital future will continue to be a primary driver of adoption in banking for some time to come.

In 2018, we saw progressive banks adopting cloud for functions and applications beyond the fringes of the bank. Leading banks such as DBS in Singapore and Capital One are pioneering the trend of embracing the cloud for core banking. While we see some more progressive banks joining these early adopters, it will be interesting to see if core-on-cloud becomes the norm for all and sundry over the course of the next five years.

Next, FinTechs and TechFins, players from outside of banking who have been at the center of innovation in the industry for a few years now, are inherently cloud-first. These players have gained critical mass especially in areas such as payments and lending. In ecosystem-driven banking, banks will need to ensure their applications can integrate with those in the cloud environments of these partners seamlessly, for benefits of business agility and digital innovation.

Lastly, open banking is setting new innovative business models in motion, and consequently fueling the uptake of collaborative consortia-led business and operating models. In 2019, banks will continue to test, explore and take into production more collaborative use cases for open banking. The flexibility of public cloud will come in handy to accelerate these innovation efforts.

2019 will be the year of public cloud in banking.

> "Cloud computing is often far more secure than traditional computing, because companies like Google and Amazon can attract and retain cyber-security personnel of a higher quality than many governmental agencies."
>
> - **Vivek Kundra**, Former Federal CIO of the United States

11. ACCELERATING CONNECTED COMMERCE

BANKING ON THINGS IN 2019

In our 2018 prediction for Banking-on-Things (Banking on the Internet of Things), we maintained that banks and financial institutions would start preparing for a future teeming with intelligent machines that make decisions and perform transactions on behalf of their human owners. The skyrocketing sales of smart speakers and voice assistants are a precursor and a leading indicator of this intelligent future. [10]In the first quarter of 2018 alone, Google sold 3.2 million Google Home devices recording a whopping 483% growth y-o-y. In banking and financial services, the enhanced uptake of IoT and GPS technologies over the past 12 months confirms a move towards the mainstreaming of IoT. Japan's Shinhan Bank has successfully made a case for responsible banking by using digital technologies to mitigate the risk of loan default for automobiles, an application we talked about in our commentary for 2018. Other applications that merit a mention are 'pocket checkout' wallets launched by some progressive banks. These wallets offer experiences similar to a shopper's experience at Amazon's no-touch-go store 'Amazon Go' by performing seamless payments that require zero action on the customer's part.

Far from an overnight transition, the journey towards the progressive reduction of human intervention for seamless integration and invisible banking will continue well into 2019 and beyond.

When it comes to retail banking, we see two applications gaining wide adoption in 2019. The first of these is "Banking at Home". Here, some progressive and digital banks have attained primacy, and we expect the uptake to increase significantly in 2019. Capital One was one of the first banks to offer banking-on-Alexa. Since then, several banks including NAB, Westpac, Amex, USAA, and JP Morgan have integrated the functionality for their retail and institutional customers. Customers can check balance, track spending, pay bills and access stock information using the virtual assistant at home. Another example is Starling Bank in the UK that has a integrated its APIs with Google Home to allow its customers to carry out balance inquiries and bill payment on the smart speaker. In 2019, more and more large incumbent banks will integrate a digital channels for basic and advanced functionalities. Secondly, applications that complete transactions in the background on behalf of a customer by making use of credentials available with the bank will flourish. Barclaycard's Dine & Dash settles a customer's bill using the credentials stored on the customer's smartphone and subsequently sends the receipt to the phone. The app thus serves to enhance the dining experience by eliminating any waiting time and allowing the customer to simply walk out of a restaurant after enjoying a sumptuous meal. In corporate banking, data from interactions with connected things will

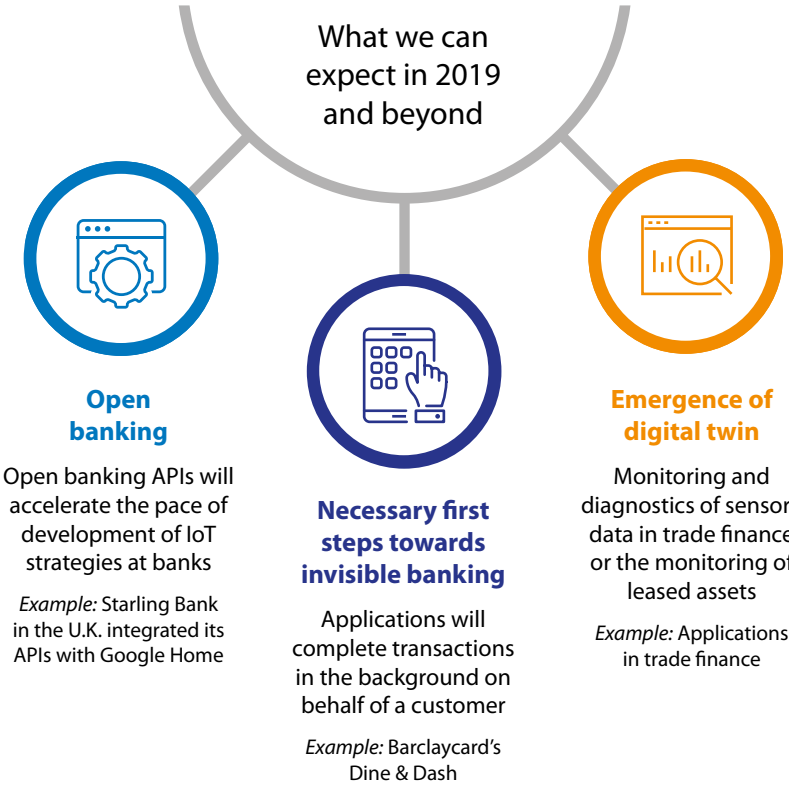
Connected Commerce Accelerates

1 Google sold **3.2 million Google Home devices** in first quarter of 2018 recording a whopping 483% growth y-o-y

2 By the year 2021, **10% of new vehicles** will have autonomous driving capabilities
– Gartner

3 The Internet of Things market will more than double to **$520 billion by 2021**
– Bain & Company

Success of IoT in banking depends on its success in other industries.



enrich services. For instance, Trade Finance applications powered by real-time insight-driven action will evolve in 2019, making transaction settlements faster and cheaper.

Banking and financial services organizations have enjoyed reasonably moderate success with their proofs-of-concept and pilot projects for a couple of years now, but the adoption of IoT in the industry has not been as high as in other industries. One of the principal reasons for this is that the success of IoT in banking depends on the success of IoT ecosystem that spans multiple industries, and is influenced by these industries. For instance, to offer banking services in a self-driving car, banks on their part can reimagine their customer journeys and also align their digital strategies, but the implementation and the success of the implementation depends on the maturity and capabilities of the autonomous car. However, with the rise of the platform business model in banking, this is beginning to change. Open banking APIs will accelerate the pace of development of IoT strategies at banks with free movement of data across devices and things within and across ecosystems.

In 2019, there will be accelerated adoption of IoT in use cases such as monitoring and diagnostics of sensory data in trade finance or monitoring of leased assets for proactive maintenance in the case of lease financing.

In our view, it will be crucial for banks to develop their IoT strategy as a subset of their digital and open banking strategy instead of building one in isolation. Extending the existing digital engagement layer to interface with new and emerging intelligent devices would be the next logical step towards driving value with IoT. Additionally, integrating security into the application architecture and including controls as part of IoT security governance will be paramount.

In 2019, banks will not only accelerate the adoption of IoT but also find the right answers to justify the business case for it.

"We are in a brave new world where not only do our children talk back to us, but so do our appliances."

- **Mohammed Dastagir**, Vice President and CTO, Sears Home Services

12. INCREASING INTERACTIVE DIMENSIONS

MIXED REALITY STARTS BECOMING A REALITY FOR BANKS IN 2019

We believe Mixed Reality (MR) – a blend of Augmented and Virtual Reality (AR/VR) – will emerge as a popular human-machine interface technology in the near future. Integrating real-world things and virtual objects, MR will enable incredible immersive experiences to users who will switch seamlessly between VR and AR scenarios. What trends do we see in 2019 and how can banks leverage them?

The first trend is that devices from the key players in this space – Google, Apple and Microsoft to name a few – will include AR features in their hardware by default. With these companies investing big in AR and VR, mixed reality will hit the mainstream quickly. In a few years, a small but significant proportion of early adopters will even offer 3D interaction interfaces, making the tablet passé. These evolved devices will introduce a rich visual element to the current text and voice-dominated interactions with chatbots and virtual assistants, to radically transform engagement. Today when you pass by some of your favorite stores and brands, you see holograms of personalized propositions displayed onto your real-world surroundings. Someday soon the technology will find application in visually interactive chatbots.

However, at present, mixed reality use cases are in a nascent stage. Enterprises, including banks, are making a slow start with a few pilot projects which usually include AR apps that help customers with information about the nearest banks, ATMs, shops or restaurants. Hence heading into 2019, every business with a play in AR, VR or MR, will qualify as an early adopter.

But watch out for new use cases in the coming twelve months. In banking, these will primarily be about enabling immersive customer experiences. Banks will have virtual branches where customers can transact using smart devices.

> **A blend of AR and VR technologies will create avatar assistants that use icons and characters to represent real-life bank executives in a mobile app or other virtual space. The mobile**

Mixed Reality Becomes a Reality for Banks

Consumption of banking services on AR and VR devices will increase with the explosive growth in sales of these devices

Key players like Google, Apple and Microsoft will include AR features in their hardware by default

Banks will scout for partnership opportunities to accelerate adoption of mixed reality

Emerging use cases

Digital only banks will create virtual branches

AR and VR icons and avatars will represent real-life bank executives in mobile applications

Augment mobile app with mixed reality experience

Customers will be able to use mobile cameras to generate AR images and obtain instant information about real-world assets such as apartments, cars, etc.

Payments will turn virtual

Purely virtual shopping and consumption experiences

AR will enhance security

3D image of physical objects created using mobile cameras will act as factor of authentication

app itself will be augmented with MR so that customers can take pictures of real-world objects (apartments, cars, restaurants, etc.) to have useful financial messages (cost of property, insurance premium, promotional offers) pop up on their screens.

Payments will turn virtual, to enable the required financial transactions in purchase and consumption experiences that are purely virtual.

Even security will benefit by using mixed reality to authorize and authenticate users. A mobile app can potentially be configured to use a smartphone's dual cameras for creating a 3D image of physical objects, which can then work as a factor of authentication. With open banking gathering momentum, expect to see third-party providers of AR, VR and MR solutions join the open economy with innovative applications to spread financial inclusion, education and awareness.

How can banks capitalize on these trends in 2019?

We recommend that banks scout for partnership opportunities to accelerate the adoption of mixed reality. Apart from specialist FinTechs, banks will also consider

partnering with technology giants such as GAFA in the next two to three years for innovation in immersive solutions.

In 2019, customer experience and not technology will be the prime consideration in mixed reality pilot projects at banks. A major challenge that must be addressed at the outset is the lack of good user experience design. There is no point creating a glitzy virtual branch if it comes with an inconvenient wearable device that no one will use. User experience needs to be rid of friction and as far as possible integrated with the existing lifestyle and devices of consumers. Quality of customer experience is possibly the most critical factor in the success of mixed reality. Banks will need to look at every aspect of their MR projects through the lens of customer experience for success in the long-term.

"I do think that a significant portion of the population of developed countries, and eventually all countries, will have AR experiences every day, almost like eating three meals a day. It will become that much a part of you."

—**Tim Cook**, CEO, Apple Inc.

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About Infosys Finacle

Finacle is the industry-leading digital banking solution suite from EdgeVerve Systems, a wholly owned product subsidiary of Infosys. Finacle helps traditional and emerging financial institutions drive truly digital transformation to achieve frictionless customer experiences, larger ecosystem play, insights–driven interactions and ubiquitous automation. Today, banks in over 100 countries rely on Finacle to service more than a billion consumers and 1.3 billion accounts.

Finacle solutions address the core banking, omnichannel banking, payments, treasury, origination, liquidity management, Islamic banking, wealth management, analytics, artificial intelligence, and blockchain requirements of financial institutions to drive business excellence. An assessment of the top 1250 banks in the world reveals that institutions powered by the Finacle Core Banking solution, on average, enjoy 7.2% points lower costs-to-income ratio than others.

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