Overseeing technological transformation

An event for US Bank Directors | April 2019

VIEWPOINTS

Reframing banking

In recent years, innovation and disruption have become among the most discussed terms in banking. Some technologies, like distributed ledger technology and new applications of artificial intelligence threaten to replace or at least reshape the roles of traditional intermediaries, advisers, traders, and bankers. The competitive landscape is changing, with fintech and technology platform companies providing efficient and customer-centric services and expanding access to banking products. As these new competitors achieve greater scale, banks risk being disintermediated from their customers and the valuable data that comes with them.

"We are at or near an inflection point for consumer financial services, where financial services is being reframed."

– Participant

Yet the same technologies driving emerging competitor business models are also enabling new approaches for incumbents. Banks are at various stages of updating legacy systems and building new digital capabilities. Still, most predict banks will have to move faster to keep up with the pace and scale of change—and the more dramatic changes that could be approaching—to remain competitive over the longer term.

Bank leaders may also need to think differently about the business models that will provide a valued service to customers in the future. A participant asserted, *"We are at or near an inflection point for consumer financial services, where financial services is being reframed. Apple didn't create a better phone, they created a platform for all kinds of things at your fingertips—they reframed it, just as Amazon and Netflix didn't just try to create a better model of the old, they reframed the shopping experience and video content."*

On February 12th, 2019, directors from US banks joined a series of presentations and roundtable discussions with EY financial services leaders, SMAs, and other subject matter experts on how technology is transforming financial services and the challenges for board oversight. The meeting took place at EY's wavespace in Chelsea, New York. Tapestry supported the meeting and developed this *ViewPoints.* Drawing on the presentations and discussions from the meeting and related discussions with participants, *ViewPoints*[1] synthesizes the key themes that emerged:

"Customers are asking ... 'Is my bank proactively helping me to manage my financial life?'"

– EY Participant

- **The environment is changing rapidly**
- **Banks are in the early stages of exploring new models**
- **Boards and management teams face difficult choices**

The environment is changing rapidly

Barriers to entry have long protected banking from disruptive forces that have transformed other sectors. But that is changing. The pace of technological advancement, changing customer expectations, and the growth of new competitors could create a similarly disruptive impact on banking and related financial services. An EY SMA cautioned, *"All aspects of the ecosystem are going digital. It hasn't yet caught up in financial services, but it will."* The changes coming to consumer financial services are driven by three primary factors: radically changing customer expectations and attitudes, the rapid pace of technological change, and growing competition from non-traditional sources. Those forces could enable, and perhaps require, incumbent banks to adopt materially different models to provide financial services.

Evolving customer expectations

Customers increasingly expect to obtain financial services when and where they wish and to have products specifically tailored to their needs. Experiences with other financial services providers, including fintechs as well as consumer platform providers, have elevated expectations. As companies in other industries innovate to improve customer experience, consumers' expectations of service from their financial services providers are changing as well.

"The pace of convergence across traditionally distinct parts of the ecosystem is accelerating."

– EY Participant

Banks historically built their businesses around products to facilitate financial transactions. And yet, a director stated, *"People no longer value transactions."* As an EY participant noted, *"Customers are asking, 'Is my financial institution trying to make my life easier? Is my bank proactively helping me to manage my financial life?'"* Customers want an easier way to review their overall financial lives. Some want financial services integrated into their life events, seamlessly enabling them to make purchases, save money, buy insurance, or invest. As a result, an EY participant observed, *"The pace of convergence across traditionally distinct parts of the ecosystem is accelerating."*

These expectations could vary by market segment, e.g., older, wealthier customers may have different expectations than younger, digital-native customers regarding how simplified and digitized their financial services experience should be. A participant from EY noted, however, that survey data suggests those gaps are narrowing.

Depletion of trust in financial services

Finances, like health, occupy a uniquely personal space in the customer's life. As a result, trust is essential, and fickle. While the financial crisis eroded trust in financial institutions, and particularly banks, financial services saw the single largest drop in trust between 2017-2018 according to the Edelman Trust Barometer, including among the "informed public." This is, in part, because trust is now split between two aspects: *"safety, security, and privacy,"* which financial institutions are built on, but also increasingly on *"confidence in honesty, transparency … a belief that the company is making decisions geared toward the customer's best interests,"* according to an EY SMA. There was a sense, according to this participant, that *"things couldn't get worse, and then they did,"* due to persistent scandals and conduct issues in banks.

"You are essentially implementing your next legacy technologies today."

– EY SMA

At the same time, privacy and protection of personal data has moved to the forefront as a contributing factor in customer trust, and banks are still trusted more than technology companies with payments[2] and personal data.[3] Banks have not monetized customer data the way technology platform companies do. As expectations around privacy evolve, banks may have an advantage in that respect.

Rapidly advancing technology

"We are in an exponential change environment. The pace of technology advancement is increasing by two times every two years as measured by efficiency and capability maturity," observed an EY SMA, adding, *"That means you are essentially implementing your next legacy technologies today."* Ant Financial, which emerged from Chinese internet company Alibaba and is now the largest fintech company in the world, reportedly refreshes its complete systems architecture every three or four years.[4]

A variety of technological advancements are already playing major roles in the digital transformation of financial services.

Artificial intelligence, machine learning, and intelligent automation

Artificial intelligence encompasses a cluster of technologies that enable computers to achieve, or at least approximate, humanlike interactions with the external environment. AI, an EY participant clarified, *"is not a singular concept. It covers a spectrum of uses and applications,"* from basic data analysis to intelligent automation of nuanced and complex processes and decision making. As banks can improve their ability to access and organize their data, the applications of machine learning will expand, with potentially profound

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>
> – EY SMA

effects on operations, headcount, and customer service. While risk and marketing were traditionally the biggest users of data analytics, AI is increasingly important to operations, legal, and finance functions. As a result, the EY SMA said, *"We are seeing a global arms race around AI."*

AI can use traditional and sensory inputs, scanning documents and listening to telephone calls not just for keywords, but also for context and tone of voice: *"the equivalent of having five different people from five different functions listening in,"* according to the EY SMA. In addition to sifting through structured and unstructured data, machine learning applications can be used to review graphs, create informed analysis, and automate business process management through robotic process automation. Thanks to their ability to analyze enormous data collections, artificial intelligence systems can surpass human beings in finding patterns in data, often identifying counterintuitive ones that no human would be likely to find. Additionally, machine-learning algorithms now automate a variety of processes and tasks in banking, including credit management, fraud detection, trading, and advising. Intelligent automation could displace significant portions of banking functions, particularly back-office operations.

> *"Data scientist is the hottest job in banking now."*
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> – EY SMA

Directors said the discussion among boards has generally been about individual AI applications as opposed to a more strategic discussion about the technology's broader potential. Yet banks are investing heavily. An EY SMA said, "*Data scientist is the hottest job in banking now. The traditional chief data officer role is, in some cases, becoming the chief data and analytics officer and [its] stature is increasing quickly."*

Application programing interfaces (APIs)

APIs that enable third parties to access bank systems and data are providing opportunities for banks to develop new product and service offerings. Financial institutions can use APIs for reporting, giving clients better access to product processors, and offer additional services by partnering with third-party providers. Third-party applications typically layer on top of a provider's internal applications.

Open banking, as this third-party access is often called, raises important questions, however, about strategy and risk, including questions about liability, competitive risks, and potential for disintermediation as third parties, including fintechs and other tech companies, gain access to bank data and systems. This access is now required by the Payments Services Directive in Europe (PSD2) and the Open Banking Initiative in the United Kingdom. Open Banking is founded on the principle that data belongs to customers and not financial institutions, and that standards must be implemented to allow customers to take control of their data.

Markets are moving at different speeds to implement open banking. The UK approach has the explicit support of the UK regulators who view Open Banking as a means to introduce more competition into the banking system. The US approach features a less active regulatory role with institutions entering into bilateral agreements around the use of APIs to provide third party access. But even in the United Kingdom, where there has been a systemic approach to implementation, adoption has been relatively slow. Customer sentiment regarding Open Banking is evolving and the ultimate level of adoption may only be determined as changes are rolled out. In some markets, consumers may be less willing to share their personal information with third parties. In the United States, the relatively "hands off" approach from regulators has eliminated a key catalyst in other financial hubs.

Cloud services

> *"More and more companies are saying, 'This is the year of moving to the cloud.'"*
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> – Participant

Many financial institutions are moving data to cloud systems to reduce costs, enable better access, and support analysis. The cloud offers relatively inexpensive access to tremendous computing power. A recent study predicted that by 2021, banks will spend more than $12 billion on public cloud infrastructure and data services, up from $4 billion in 2017.[5] In a discussion with Tapestry Networks, a fintech venture capitalist noted how moving to the cloud can transform operations: *"The financial services firms that adopt cloud computing faster than their competitors will be the ones that will innovate and digitalize faster than their competitors."* Despite the benefits, some bankers caution that getting regulators comfortable with wholesale moves to the public cloud will take time, as concerns about concentration risk among a few providers persist.

Banks are in various stages of moving to the cloud to enable greater adaptability and agility, particularly with regards to their use of data, with many using a mix of public and private clouds. Some are *"going as fast as we can to get rid of the legacy environment,"* according to one director. Others say they are *"operating almost entirely within the cloud to get better controls"* or are *"experimenting, but are not quite there."* One participant said, *"The ones that have moved all-in on the cloud are those who self-identify as innovators. But more and more companies are saying, 'This is the year of moving to the cloud.'"*

While participants all expressed interest in continuing to explore system migration to the cloud, they cited several concerns as key issues for directors to consider. For example, would moving to the cloud make the bank more or less secure? What are the implications for resilience? Ultimately, one director said their conclusion was that *"the hybrid cloud is really essential to the way forward."*

Blockchain

An investor in financial technology who participated in a related discussion on innovation in banking predicted, *"Blockchain is about trust and transparency. The time will come when it is vital. It might seem like it's all hype right now and that's because we're not there yet, but it is coming."* Blockchain refers to a form of distributed-ledger technology. A blockchain is a secure, distributed database that allows for the verification and validation of information without relying on a central authority like a bank. Each new transaction depends on data from preceding transactions, verified by mathematical tests that, in theory, make the ledger indisputable and immutable.

The technology has often been cited as something that may enable banks to use data for exciting new purposes. Though stories of blockchain applications garner media headlines, current examples of distributed ledger technology applications at scale remain limited. However, many remain encouraged about the potential uses of distributed ledger technology to increase efficiency in specific processes or businesses. A director said, *"There are clear examples of labor-intensive processes that could be improved with blockchain."* Some institutions have found success in applying the technology to areas such as trade settlement, international payments, know-your-customer processes, customer document storage and exchange, and asset and liability management.

Technology-driven competitors are growing

For years, fintech's disruptive potential has been debated among industry leaders. Initially, leaders of incumbent institutions were primarily interested in getting the measure of their new competitors. In his annual letter to shareholders in 2014, JPMorgan Chase CEO Jamie Dimon said of fintechs, "They all want to eat our lunch … Every single one of them is going to try."[6] As time went on and as many start-ups struggled to achieve scale, some financial services leaders became less worried about the potential for major disruption. They recognized that large customer bases, strong balance sheets, and capital to invest in technology made it possible for them to respond from a position of strength. But with those advantages came the handicap of legacy infrastructure and outdated technology. Fintech firms, unencumbered by old systems, have continued to grow, and now some suggest we are on the cusp of the "golden age of fintech."[7]

Today, the number of "unicorn" fintechs (valued at over $1 billion) is growing; fintechs now make up 12% of unicorns globally.[8] As noted, the largest in the world is Ant Financial, which emerged from Chinese internet company Alibaba. Ant Financial had $10 billion in revenue in 2017 and was recently valued at $150 billion, a higher valuation than Goldman Sachs.[9] Their 620 million online payment users completed more than $8 trillion in transactions in 2017, more than were handled by Mastercard.[10] While payments and lending have seen significant growth in the United States, different regulatory regimes and strategies have meant that the largest tech companies in the United States have not moved into financial services as directly as Alibaba has with Ant Financial. One commentator said, "Alibaba and Tencent are like integrating PayPal, Amazon, and Facebook all in one. They are very different. And their ambitions are different too."[11]

"Who has trust? In every industry where there is a dominant platform player, they have achieved it."

– EY SMA

The big tech companies could represent a major source of competition or collaboration. They have the customers and the platforms to enable them to roll out financial services products quickly. Piyush Gupta, CEO of Singapore's largest bank, DBS, observed, "Their cost of customer acquisition is zero. And if your cost of customer acquisition is zero, then your capacity to be able to improve the customer experience is just dramatically different than for any other kind of fintech."[12] A 2017 survey found that 31% of banking customers globally would consider switching their accounts to big tech companies if they offered financial services.[13] An EY SMA observed, *"Who has trust? In every industry where there is a dominant platform player, they have achieved it. How? Because customers perceive value from the level of engagement with those platforms."*

Some big tech companies are already actively involved in financial services. However, in some areas they have so far chosen to partner with banks and other providers rather than attempt to compete with them directly.

Banks are in the early stages of exploring new models

Financial services firms, generally, are not creating alpha or delivering returns that beat the market. And that has been the case for over a decade since the financial crisis. Banks may be faced, in the extreme, with a stark choice: become a commodity, potentially disintermediated from customers, as the pipelines or product manufacturers for more innovative and agile firms that own the customer relationship, or adapt business models to retain customer engagement. The advances in technology and their ability to transform banks mean that *"what was an IT management level discussion is now a strategic discussion. Technology is only the enabler, however, of new approaches to serving customers."* As an EY SMA noted, *"The choice is no longer whether you innovate; it is how you are going to stay relevant as market dynamics and consumer preferences shift."*

New operating and business models

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An EY participant observed, *"The lines between financial services are blurring because it is about engagement with customers, not consumer banking."* This shift may require banks to consider new business and operating models to retain the customer relationship. Historically, banks have been designed around products and services, not a holistic customer experience.

As financial services are provided in new ways, banks will be required to think differently about how they can distinguish themselves. One participant asserted that banks must ask, *"'How can I make your life easier?'"*

EY SMAs described five potential models for financial services:

- **New entrants.** These will be bundlers of financial services from outside of traditional financial services providers.
- **Digital natives.** These will be offshoots of financial services firms that are set up under their own brand and operations.
- **Financial utilities.** These already exist. For example, the large asset servicers are utilities.
- **Product manufacturers.** Banks could manufacture products, like mortgages, that are then sold through brokers, technology companies, or other customer-facing providers.
- **Ecosystem integrators.** They may offer their own financial products, but they will also bring the ecosystem together. They will bring the customer access to products from multiple providers.

A platform for customers' financial lives

An EY SMA predicted, *"Value will begin to shift from the monetization of products and transactions to the productization of user experiences. In short, the industry will move to a new subscription-based model, and in doing so, we will witness the disintermediation of the financial service from the financial product."* Financial institutions have an opportunity to aggregate across financial solutions, to become the platform where customers interact with a variety of financial services and products, including third parties. EY SMAs suggested that banks and other consumer-facing financial services providers would be expected to provide more proactive and predictive advice and analysis, and to become more integrated into the everyday lives and interactions of customers. Finding ways for customers to easily, intuitively, and regularly interact with financial services will be a key objective for banking apps in the future.

> *"There is a paradigm shift whereby customers are willing to share personal information; in return, they expect value."*
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An EY SMA said, *"So, what will the future look like? People today go around all by themselves within the financial ecosystem. It's left for the consumer to figure all this out. Banks need to reframe away from a focus on products to value proposition … They need to provide a suite of products that serves needs aligned with key events in a person's life."* In the same way that technology platform companies *"build an ecosystem of value around the customer, requiring them to come back to the platform to consume"* not just the products or services manufactured by the platform provider, but a range of products and services from third parties, banks can become the platform for customer's financial lives. The EY SMA predicted this could involve a bundling and unbundling of financial products, provided through a subscription model. This participant predicted, *"Consumers will no longer want to own—they will just want to use. Automobile manufacturers for example are planning for a world in five years where no one owns a car."*

Making better use of customer data

Financial institutions have mass quantities of valuable customer data, yet are still in the early stages of determining how best to leverage that data without violating customers' privacy expectations. An EY SMA suggested they could do more: *"As a financial institution, you have the most sacred information out there. How are you helping a customer to view and manage through all of this?"* The answer could be to provide *"a financial health monitor that gives me insight into every aspect of my daily financial life. If that platform existed, wouldn't that be best for the consumer?"* The question, according to this participant, is, *"'How are you using data to establish value and trust?' There is a paradigm shift whereby customers are willing to share personal information; in return, they expect value. So, for example, 'Can you prompt me when I am about to make a bad financial decision?'"* Equally, concerns about privacy and data security could represent an opportunity for banks. *"Privacy can be harnessed as a competitive strategy,"* said one EY participant, *"The paradigm of trust has fundamentally shifted. In addition to security and privacy,* *customers will trust institutions that use their data to truly personalized services and solutions. The daily email from your bank with the irrelevant offer is eroding trust and institutions are not understanding that."*

"Democratizing" financial advice and management?

"Bundling is the democratization of wealth management."

– Director

A director described the effect of such an aggregated approach to consumer financial services: *"Bundling is the democratization of wealth management. When I think of segmenting the market … many of our banks are built on the backs of deposits from middle-income customers. The value proposition that you are describing may only apply to the top of that group."* This director expressed concern however, that those in lower income brackets would benefit less, remaining focused on a more transactional approach to financial services: *"I worry that this approach will appeal to the top 10%, but that we are going to lose the 90% who will not differentiate among providers or care who provides them with financial services. They will trade us in for Amazon. For something small, people will take an offer from whoever can provide a convenient solution."*

The future of risk management

The risk function should enable businesses and operations to effectively transform for the future by providing assurance that digitization, automation, and new operating and business models—and change management processes—are well controlled, and the risks understood and managed. For example, an EY SMA asked, *"How do you make sure the first line of defense is baking in the right controls, the right risks, for example, as you move to the cloud?"*

Equally, risk is going through its own transformation, including automating some controls and some risk reviews, such as using AI for things like predictive analytics and real-time monitoring, which can speed approval processes and may reduce costs and headcount in the function over time. Eventually, some key aspects of risk will be automated themselves.

As a result, an EY SMA suggested that the risk function should be increasingly focused on four main objectives:

1. Enabling the business through transformation
2. Digitizing itself
3. Governing emerging risks
4. Implementing physical transformation

Boards and management teams face difficult choices

> *"We spend a lot of time talking about these things. We need to stop talking about it and get started."*
>
> – Director

Boards are faced with challenging decisions on how to prioritize investments in the near term to ensure longer-term competitiveness in an environment where technology is rapidly advancing. One director who spent a career in banking said the things happening now and the models being considered would never even have occurred to him when an executive. Bank leaders also face some fundamental strategic questions around how they can retain customer relationships. One director said, *"There are not a lot of things distinguishing consumer banks from one another. The unique thing we all bring is that relationship with the customer."* Those relationships, however, are increasingly at play. As new competitors emerge, and business models evolve, boards may need to consider the risk that their institutions become the product manufacturers and/or the rails for fintechs and tech companies who deliver services to customers.

Directors identified a number of challenging questions facing their boards:

- **How quickly can we invest in transformation?** A director said, *"It's urgent … For us, it's how do we get down this digitization path."* Given the pace of change and the scale of investment needed to truly transform their institutions, boards are questioning how quickly they should be investing and determining management's ability to execute in a controlled way. Another director said, *"Change is happening at a great rate … You have the risk of going too slow,"* and another stated, *"We spend a lot of time talking about these things. We need to stop talking about it and get started."*
- **Are deeper upgrades to core systems needed**? An attractive front-end interface will not suffice to fully leverage some of the advances in technology and to deliver distinctive customer experiences. Many banks are just beginning to replace legacy systems and build new platforms to digitize end-to-end. One director said of the mess of interconnected legacy systems, *"I couldn't explain how the spaghetti is getting untangled. We don't understand how it's happening. We need to ask more questions."*
- **When should we partner with third parties?** One area that banks are considering is when to partner with third-party technology providers and fintechs and when to build something themselves. One noted that while banks typically focused on proprietary approaches, increasingly, they are

saying, *"If it exists out there, use it, don't recreate it. Focus on that small piece that only banks can do."*

> *"If it exists out there, use it, don't recreate it. Focus on that small piece that only banks can do."*
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> – Director

- **What is our talent strategy?** A director said, *"I have a question that runs across everything that we have been talking about: what is the talent strategy to support all of these changes?"* A participant responded, *"We see more and more developers working for non-technology companies. Banks are credible bidders for tech talent now."* Those that have been successful attracting technology talent are those where *"the CIO has a seat at the table, the board has prioritized technology investment and innovation as a strategic issue,"* according to this participant. Some banks are also experimenting with new organizational structures and approaches common in start-ups, including agile development, and using sprints and inceptions to replace steering committees and other bureaucratic approaches commonly used in banking, which can be slow and unappealing to tech talent.

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The pace and scale of disruptive change underway in banking and financial services more broadly challenges non-executive directors. One director said, *"I heard several of the director attendees say they felt 'underinformed' on the subjects we discussed. We are all drinking from a firehose to try and grasp as much as we can, but it is a challenge. Events like this help."*

Endnotes

[1] *ViewPoints* reflects the meeting's use of a modified version of the Chatham House Rule whereby comments are not attributed to individuals, corporations, or institutions. Participants' comments appear in italics.

[2] "ABA Survey: Six in Ten Consumers Trust Banks Most to Safeguard Payments," *ABA Banking Journal*, October 9, 2017.

[3] Mary Wisniewski, "Facebook's Data Problems Have an Upside for Banks," *American Banker*, April 10, 2018.

[4] Chris Skinner, "The 10-Year Ticking Time Bomb—the Timeframe for Banks' Death," *BankNXT*, November 9, 2017.

[5] Telis Demos, "Why Amazon and Google Haven't Attacked Banks," *Wall Street Journal*, April 26, 2018.

[6] Seth Fiegerman, "The CEO of America's Biggest Bank Is Worried about Silicon Valley and Bitcoin Stealing His Business," *Mashable*, April 10, 2015.

[7] Tapestry Networks, *ViewPoints*, "Reinventing financial services," December 2018.

[8] "$1B+ Market Map: The World's 260 Unicorn Companies in One Infographic," CNB Insights, August 14, 2018.

[9] Stella Yifan Xie, "Jack Ma's Giant Financial Startup Is Shaking the Chinese Banking System," *Wall Street Journal,* July 29, 2018.

[10] Yifan Xie, "Jack Ma's Giant Financial Startup Is Shaking the Chinese Banking System."

[11] Chris Skinner, "The Difference Between Fintech and Techfin," *Finanser* (blog), June 18, 2018.

[12] Piyush Gupta, "Platforms and Regulations: a Shift in the FinTech Regulatory Landscape," interview with James Lloyd at Money 20/20 Asia, July 25, 2018.

[13] Reuters, "Turns Out Many Consumers Are Interested in Banking with Google, Amazon, and Facebook," *Fortune*, January 11, 2017.