

**Keynote Remarks**  
**by**  
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**“The Future of Banking”**

**at**  
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Thank you for having me again this year. I am grateful to the St. Louis Fed, under the capable leadership of Jim Bullard; CSBS; and the dedicated FDIC staff for putting together a great conference.

When I addressed this conference last year, I had served in my role as FDIC Chairman for about four months. So this year, you get what is hopefully an improved version of a keynote speech.

Last October, I discussed the FDIC’s efforts to strengthen trust among the agency, other regulators, the public, and banks through transparency and accountability. I explained that transparency is pivotal to maintaining trust in the safety and soundness of the entire banking system.

As I pondered potential topics for this year’s conference, my thoughts kept coming back to a simple question: “Why do regulators do what we do?”

At both the state and federal level, regulatory agencies have their missions. For the FDIC, those missions include maintaining stability and public confidence in the nation’s financial system by insuring deposits, examining and supervising financial institutions for safety and soundness and

consumer protection, making large and complex financial institutions resolvable, and managing receiverships. We implement these missions through multiple regulatory, supervisory, and enforcement channels. Not to oversimplify the critical and often complex work of our regulatory agencies, but once we fulfill those missions, we should ask, “Why do we do what we do?”

The FDIC was created in 1933 to protect bank depositors and ensure a level of trust in our banking system as our nation emerged from the Great Depression. In order to ensure that public trust in our financial institutions exists, we have to make sure that banks are safe and sound.

The basic tenets of safety and soundness focus on capital, liquidity, assets, bank management, earnings, and the banks’ ability to manage risk. A safe and sound bank is able to withstand market shocks and survive. It is the ability of banks to survive and thrive that is the focus of my speech today.

### ***“Video Killed the Radio Star”***

To illustrate what I mean by survival, I will highlight the story of a company that was once a behemoth in its industry. Because I have been told by my capable staff not to mention any bank by name, this story is not about a bank. It is, in fact, about Blockbuster.

Blockbuster had thousands of retail locations, millions of customers, a sizeable marketing budget, and a successful business model. In 2000, a little start-up proposed a deal to Blockbuster: the start-up would run Blockbuster’s brand online and Blockbuster would promote the start-up’s mail-order rentals in its stores. Blockbuster declined. It also declined an opportunity to buy the start-up for \$50 million.

You know where I am going with this story. Blockbuster has since filed for bankruptcy. The one remaining store in Portland, Oregon, is a vestige of a bygone era.

Meanwhile, the little start-up helped usher in the era of online streaming, has a market cap of over \$100 billion, and serves more than 150 million subscribers, including many in this audience.

There are numerous case studies dissecting why Blockbuster failed, but the angle I would like to explore today is innovation. At the risk of oversimplifying, Blockbuster was not quick enough to adopt – perhaps even understand – emerging trends. Just like *Video Killed the Radio Star*, we could say that new, more convenient delivery channels put Blockbuster out of business. But it was not mail-order DVDs or streaming *per se* that killed Blockbuster, it was Blockbuster’s inability to recognize an emerging trend and adapt to it.

### ***Rapid Technological Developments***

In his 1996 book, “The Road Ahead,” Bill Gates wrote, “People often overestimate what will happen in the next two years and underestimate what will happen in ten.”

Technology and innovation had been transforming financial services long before smartphones and machine learning became frequent topics at banking conferences. From the development of double-entry accounting and the first stock exchange to the more recent innovations brought about by ATMs and internet banking, financial innovators have worked for centuries to improve access and better serve customer and industry needs.

The speed and breadth of technological innovation in recent years, however, marks a shift from earlier eras. Advances in payments, credit, and funding, to name a few, have tremendous potential to transform the business of banking as we know it – both in the way consumers interact with their financial institutions and the way banks do business. Now, more than ever, it is crucial that we understand the impact, scope, and consequences of what we have come to call “fintech.”

When Bill Gates made that statement in 1996, the FDIC was actively thinking about the changes that technology would bring to financial services. We were focused on electronic banking. By year-end 1997, 602 of 6,117 FDIC-supervised banks operated internet sites – that is, less than one in 10 banks. Thirty-four were “transactional” sites that provided customers the ability to pay

bills, transfer funds, and open accounts. The others were “information only” sites that described the bank’s products and services. The FDIC’s *1997 Annual Report* observed that while institutions on the internet represent a small segment of all financial institutions, acceptance of the new technology by consumers and financial institutions is increasing rapidly.

Since 1997, the pace of technological change has continued to accelerate. In the late 1990s who among us would have imagined being able to deposit a check with a computer we carried around in our pockets? Yet that was the reality 10 years later.

A few years after, and that same computer was serving as a point-of-sale device that allowed micro-vendors to access the payments system and *voilà!* – you might have applied for your last mortgage wearing pajamas.

Technology continues to advance at a relentless pace, and we all must challenge ourselves to think about what that means for the future of the banking industry, and community banks in particular.

### ***How Technology is Transforming Banking***

Many have speculated about what the future of banking holds. Just a few years ago, some predicted that technological advancements and the rise of fintech firms would lead to the demise of the banking industry. However, the last few years have shown that fintechs and banks have learned to coexist and often prosper through partnerships. Fintechs bring new technology and speedy delivery to the table, and banks bring deep customer relationships, access to the payment system, and, of course, deposit insurance.

Current predictions about how technology could transform the banking industry fall into a handful of broad categories that will affect how fintechs and banks partner in the future: digitization, data access and open banking, machine learning/artificial intelligence, and personalization.

## *Digitization*

Consumers are increasingly demonstrating a preference and expectation for digital lending and deposit platforms. As a result, many banks are now offering these services, sometimes through a separate division and trade name.

Digitization can lead to efficiencies for banks by reducing the time needed to make lending decisions and by improving a lending department's capacity to manage and administer loan portfolios. At the same time, it can improve the loan application process for consumers, reducing the amount of application data they need to enter and often leading to faster credit decisions.

The key customer-centric features of digital banking are affordability, convenience, and instantaneous access to information. These features help consumers understand their financial standing in real time, as well as plan for long-term goals and unexpected emergencies. They also allow financial institutions to reach unbanked or underbanked customers and communities who increasingly have mobile or online access to services.<sup>1</sup>

The adoption of mobile banking is a great start, but consumer expectations for a truly digital experience continue to grow. Banks must evolve with these expectations, and their technology service providers must evolve, as well. Existing core processing systems typically provide a number of different platforms for lending and deposit-taking activities. These platforms may use differing data standards and may not interact with one another, let alone solutions from other companies.

Consider a future where next-generation core service providers offer an end-to-end digital banking experience to their partner banks. These future core providers will develop their own innovative solutions for their financial institution clients. But they will also allow institutions to

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<sup>1</sup> See Table 4.5 Mobile Phone, Smartphone, and Home Internet Access by Banking Status and Year, *2017 FDIC National Survey of Unbanked and Underbanked Household* at 28 (<https://www.fdic.gov/householdsurvey/2017/2017report.pdf>).

develop their own technology or partner with fintechs – all while providing flexible access to the data on the core provider’s systems. These shared data and software interface standards will support a marketplace of innovative technology, providing creative freedom to banks and new products and services for consumers. We are not there yet.

Beyond the products and services they offer, digitization will also change how banks operate. Taking advantage of technology will transform back-office operations, and will demand new skills from a bank’s workforce. Increased digitization also comes with important considerations related to security and resiliency. Banks must embrace these benefits and challenges to stay relevant in an ever more competitive market for customers.

### *Data Access and Open Banking*

Some consumers are increasingly interested in sharing their financial account data with third parties. These companies, including fintechs, provide personal financial management, budgeting, savings, and other services. The firms may use this customer-permissioned data to verify account information and loan applications or to evaluate creditworthiness – and these are just a few examples. This concept of customer-permissioned data sharing is often referred to as “open banking.”

Data is the new capital. Financial service providers are using data and technology to develop new services for consumers. These providers often rely on data aggregators to consolidate a customer’s financial information from one or more institutions. The data aggregator can then present the consolidated information in a user-friendly format to these service providers.

Consumers clearly benefit from the innovation and competition that “open banking” fosters. But these benefits do not come without some costs. Customer-permissioned data sharing raises a number of questions regarding data ownership, privacy, security, liability, and consumer control.

As with many emerging trends, stakeholders have expressed a preference for addressing issues such as these through industry-led efforts, rather than regulatory intervention. For example, a

popular method of data aggregation called screen scraping has raised many concerns, particularly related to information and identity security. This is because customers enable screen scraping by providing log-in credentials for their bank accounts, including user IDs and passwords. There appears to be broad consensus within the industry that APIs and tokenization are a better method to facilitate data sharing to avoid the risks associated with screen scraping.

Developments that allow data access and open banking while ensuring security, safety and soundness, and consumer protection hold a great deal of promise to enable further innovation in the financial services marketplace.

### *Machine Learning and Artificial Intelligence*

With the amount of data being created, as well as advances in computing power, data is increasingly being leveraged by fintechs and financial institutions to create new insights and monitoring tools using artificial intelligence and machine learning (AI/ML).<sup>2</sup>

The use of machine learning is growing in models used by financial institutions and technology firms. These models can help banks make credit decisions, detect fraud, and improve customer service – to name only a few. Existing, principles-based guidance, such as the Interagency Guidance on Model Risk Management and the FDIC’s Guidance on Managing Third-Party Risk,<sup>3</sup> serve as a solid foundation for managing risks associated with these models. These guidance documents do not carry the force of law, but describe a framework for institutions to manage and mitigate risks associated with the use of models and third-party vendors. The depth of risk management practices needed to mitigate model risk depends upon the materiality of the activity being modeled or services being provided.

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<sup>2</sup> Merriam-Webster defines artificial intelligence “as a branch of computer science dealing with the simulation of intelligent behavior in computers.” See <https://www.merriam-webster.com/dictionary/artificial%20intelligence>. Machine learning is defined as “the process by which a computer is able to improve its own performance (as in analyzing image files) by continuously incorporating new data into an existing statistical model.” See <https://www.merriam-webster.com/dictionary/machine%20learning>.

<sup>3</sup> Interagency Guidance on Model Risk Management (<https://www.fdic.gov/news/news/financial/2017/fil17022.html>); Guidance on Managing Third-Party Risk (<https://www.fdic.gov/news/news/financial/2008/fil08044.html>).

AI/ML has also been used to leverage alternative data for a range of purposes, including for credit decisions. This alternative data generally includes information not typically found on credit reports or customarily provided by customers. If used appropriately, alternative data has the potential to help demonstrate the creditworthiness of consumers who currently may be unable to access credit from banks, or to enable consumers to obtain more favorable products and pricing based on more accurate assessments of repayment capacity.

When deploying AI/ML tools, an institution must consider many factors, beginning with the level of workforce expertise needed to manage the capabilities. The transparency of AI/ML models and the ability to interpret and understand their results is vital to ensure compliance with regulatory obligations. Properly managed, AI/ML can help institutions better understand their consumers and their operations.

### *Personalization*

Consumer expectations are propelling this explosive growth in technology. Consumers expect convenience and a 24/7 connection to their financial services providers. Experts predict demand for increasingly personalized services.

Mobile and internet banking allow consumers to conduct banking activities at any time and from any location, and chat bots allow institutions to interact with customers and answer questions they may have about these transactions.

Through advanced data analysis, institutions can offer customers better tools to manage their financial lives. These tools can also provide banks with a better understanding of the financial products and services their customers need – a win-win for both customers and banks.

### *The FDIC and Innovation*

Now, it would be easy to just say: “Banks, if you do not innovate, you will lose in the long run.” Banks know that. Customers often demand the latest products and services that they have seen

their friends use or that may have been featured on social media. For the most part, banks would like to meet and even exceed customers' expectations. So, if that is the case, then why are more community banks not developing new technologies? For two principal reasons: cost and regulatory uncertainty.

The cost to innovate is in many cases prohibitively high for community banks. They often lack the expertise, the information technology, and research and development budgets to independently develop and deploy their own technology. That is why partnering with a fintech that has already developed, tested, and rolled out new technology is often a critical mechanism for a community.

The business case for collaboration is clear. Fintech firms are built on a digital infrastructure that can develop and offer consumer products quickly and with requisite agility as consumer demand evolves. Banks have a built-in customer base, an understanding of regulatory requirements, access to the payment system, and deposit insurance.

A few months ago, I met with two dozen fintechs in Silicon Valley and San Francisco to learn how they team up with banks. For the most part, the FDIC does not regulate these companies, but I was eager to get their feedback for a simple reason: if our regulatory framework is unable to evolve with technological advances, the United States may cease to be a place where ideas become concepts and those concepts become the products and services that improve people's lives.

The challenge for the regulators is to create an environment in which fintechs and banks can collaborate. It is my goal that the FDIC lays the foundation for the next chapter of banking by encouraging innovation that meets consumer demand, promotes community banking, reduces compliance burdens, and modernizes our supervision.

This is not optional for the FDIC. We must lay this foundation because the survival of our community banks depends on it. These small banks face challenges from industry consolidation,

economies of scale, and competition from their community bank peers, larger banks, credit unions, fintechs, and a plethora of other non-banks lenders.

While the FDIC has limited ability to address the direct cost of developing and deploying technology at any one institution, there are things that we can do to foster innovation across all community banks and to reduce the regulatory cost of innovation. We cannot sit on that proverbial regulatory perch and observe the change from above. We have to get on the ground, roll up our sleeves, and get to work on supporting and advancing scalable technological change that works for community banks.

The FDIC is a link in the community bank ecosystem, just like banks' customers and their communities. As the primary regulator of most community banks in America, we have a responsibility to ensure that our regulatory framework supports innovation in a manner that is accessible to community banks and responsive to ever-changing technological demands.

FDiTech will do just that.

Broad adoption of technology – both at the FDIC and within the banking system – was one of the driving factors behind our decision to establish a new office of innovation within the FDIC. The FDIC Tech Lab (FDiTech) will collaborate with community banks on how to deploy technology in delivery channels and back office operations to better serve customers. Many of the institutions we supervise are already innovating, but a broader adoption of new technologies across this sector will allow community banks to stay relevant in the increasingly competitive marketplace.

First, we can reduce the regulatory cost to banks of developing and implementing new technology. It is our job as a regulatory agency to understand technology by engaging with innovators in banks and at fintechs and to provide sound guidance and technical assistance to banks that choose to deploy new technology. My goal is not to replace the business judgement of banks, but to identify and eliminate unnecessary regulatory burdens that discourage innovation. Whether banks choose to develop technology on their own or partner with a fintech,

the FDIC will work with them to identify and address unnecessary regulatory impediments. Through engagement and technical assistance we can help eliminate the regulatory uncertainty that prevents some banks from adopting new technologies.

Second, through tech sprints and other innovative approaches, the FDIC can help encourage the market to develop technology that improves the operations of financial institutions and how the FDIC functions as a regulatory agency. Tech sprints are designed to challenge innovators, technologists, coders, engineers, developers, and subject matter experts to develop technological solutions to address specific industry or regulatory challenges, in a competitive team environment. Tech sprints are not a new tool, but the FDIC can use these events to motivate the development of technologies that address challenges beyond the capacity of any one institution to solve. These public/private partnerships can also help promote market-based solutions that may not have been obvious to any one participant.

We are also considering other tools – such as prize competitions and rapid prototyping – to help promote private sector development of innovative solutions to supervisory challenges. These strategies for developing new “reg-tech” and “sup-tech” solutions will encourage innovation and problem solving more quickly and at less cost than traditional government contracting. They will incentivize the private sector to produce market-driven solutions that will help transform the FDIC. These tools may also help institutions that voluntarily adopt them to become more efficient in their operations. These efforts will encourage non-traditional partners to engage in the development of cutting-edge technology for the financial services industry, and will help avoid the limitations of monolithic, government-imposed technological mandates that are too expensive and out-of-date by the time they are developed.

Third, the FDIC can work with developers to pilot products and services for truly innovative technologies. Working with our partner regulators at the state and federal level and with the institutions themselves, our goal will be to build compliance into the pilot, considering regulatory questions or impediments as they arise and then working to address them. Once a pilot is completed, we will work with the institution and its partners to understand and publish

the results: what worked, what did not work, and how to make any necessary adjustments to make the product or service better once it is scaled and deployed.

Over the coming months, the FDIC will play a convening role to encourage community bank consideration of how technological developments could impact their businesses and to ensure community bank perspectives are considered in industry-led efforts to establish standards.

The FDIC will host a series of community bank-focused stakeholder roundtables on digitization, data access and ownership, machine learning and artificial intelligence, and personalization of the banking experience. We will invite a mix of community banks, technologists, and technology service providers to these discussions.

This task will not be easy, and people will be the key to its execution. We are currently searching for a Chief Innovation Officer (CINO) to lead our Tech Lab. The CINO will work across the FDIC and with our U.S. and international partners to create a regulatory environment that increases the velocity of transformation and removes unnecessary impediments to innovation. We are also looking for staff with the technical expertise to can help us better understand technology already deployed at our banks, develop new supervisory tools to be more efficient and effective as a regulator, and secure our networks and ensure that our supervised institutions' networks are secure.

By promoting these developments and encouraging our FDIC-supervised institutions to voluntarily adopt a more advanced technological footing, we can help foster the transformation of the community banking sector. In turn, the institutions we supervise can reach greater efficiency with products and services that are more attractive to consumers. Ultimately, these advances will allow the FDIC to use a new regulatory approach to supervision, powered by the same technology that is revolutionizing the banks we supervise. We have already begun to make progress.

For example, we have been exploring ways to leverage technology in our examination program. In 2019, technology enabled us to conduct an average of 64 percent of our consumer compliance

examinations and 44 percent of our prudential examinations off-site. And, as we train our examiners more on the use of these techniques and incorporate more new technology, we will further cut the costs of our exams on institutions without compromising on quality.

To build on these efforts, earlier this year, we established a Subcommittee on Supervision Modernization to consider how the FDIC can further leverage technology and refine processes to improve our examination program. Subcommittee members include representatives from banks – large and small – technology companies, and other thought leaders in the private sector and academia. They have met three times this year, and I am very excited to see the Subcommittee’s recommendations to make our supervision even more efficient, transparent, and accountable.

### ***Conclusion***

Shortly after becoming FDIC Chairman, I went to a small community bank to open a checking account. I wanted to experience firsthand what consumers across the country experience when they visit a community bank. I drove away from Washington and entered a branch of a small bank.

Community banks are characterized by their customer relationships. And my visit was no exception. I was greeted with a smile and an offer of candy. While the patient branch manager went through the requisite paperwork to open my account, a customer walked in with his three-year-old daughter. Mary ran up to the teller to give her a hug. The father said that Mary insisted on stopping by the bank to say “hi.” The bank manager smiled and told me, “She has been coming here since she was born.” It felt just like a Norman Rockwell painting.

Then, the branch manager went to an IBM typewriter, removed the dust cover, typed up my new account card, and laminated it. As she handed me the fresh-from-the-laminator card, she said “Be careful, it is hot.” And with that, Norman Rockwell left the room, and I could not help but remember that last time I held a laminated card with my name and account number on it. I was renting a movie at Blockbuster.

Small banks like that one are slowly disappearing from America's landscape. Based on 2018 Summary of Deposit data, 627 counties are only served by community banking offices, 122 counties have only one banking office, and 33 counties have no banking offices at all.

I have noted on many occasions how vital community banks are to their communities. They support the small businesses, farms, libraries, and other entrepreneurs that help small towns, rural communities, and inner-city locations stay economically relevant and even thrive. If our community banks are unable to adapt to innovation that is sweeping their industry and which their customers have grown to expect, small banks will simply not survive.

I do not profess to know what the right number of banks in the U.S. is, but I recognize that community banks have to be competitive in order to survive. And as I ponder "why we do what we do," I inevitably reach the same conclusion over and over again: we do what we do to make sure that small banks across this great land can survive – in the soybean fields of Missouri and the cornfields of Iowa, next to the cattle ranches of Texas and the potato farms of Idaho, up and down the San Joaquin Valley in California and in the fishing towns of Maine, and everywhere in between.

The FDIC stands ready to take on the challenge of innovation and to create a regulatory environment that will make it easier for small banks to adopt new technologies and thrive. Together, we can ensure that Mary's future daughter can still work with a local banker that knows her community – even if the "hug" is virtual.

Thank you.