aws

The Cloud Era of Financial Services

Delivering exceptional customer experiences through digital transformation

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How are leading financial institutions shaping the future of the industry?

With cloud.

Frank Fallon, VP Financial Services, AWS

In the financial services industry today, the utilization of cloud services is in full force. This was not the case just a few years ago, as complex regulations and security constraints within the industry often meant adherence to legacy systems. Leading institutions are now embracing cloud to both solve infrastructure needs in new ways and to create new experiences for their customers.

Across the industry, we see a remarkable array of innovation using AWS solutions—the use of cutting-edge technologies like biometric authentication, virtual assistants, predictive loan offers, virtual reality trading, AI-enabled claims processing, ML-enabled fraud detection, and much more.

While some of this was possible before the cloud era, it wasn't possible to scale. Now, cloud is making possible the scalability required by the financial services industry. As a result, the technologies enabling cloud innovations are becoming increasingly familiar in our industry: cloud-based applications, microservices, data lakes, and containers. Beyond the technology, there is an element of organizational change that cloud requires—and inspires. As financial institutions adopt cloud, and by becoming more agile, many are seeing a tremendous opportunity to refresh internal cultures to build more things that customers love.

In this piece, my colleagues from the AWS Enterprise Strategy Team—**Miriam McLemore** and **Jonathan Allen**, both former C-suite leaders from large enterprises—share insights, drawn from their work with enterprise customers, on how leaders are partnering with AWS to take advantage of the cloud and advance their businesses. They cover what's top of mind today for leaders and board members across a wide range of financial services organizations.

MAJOR OPPORTUNITIES IN FINANCIAL SERVICES ENABLED BY THE CLOUD

Driving growth in the face of low or nonexistent interest rates.

Meeting customer expectations, faster.

Modernizing legacy processes and outdated technology.

Supporting enhanced security and compliance requirements.

It's a very exciting time for business and technology leaders working in financial services. We hope that in learning about some of our customers' extraordinary cloud experiences, you'll be inspired to pursue your own.

The urgency to
adopt the cloud

Balancing urgency and trust

Numerous regulatory agencies make governance and protections within the financial services industry among the most stringent in the world. It's no surprise that, like other highly regulated areas, the financial services industry has had a more complicated, and sometimes longer path for adopting new technologies.

But that's changing. Fintech companies are on the rise, offering fresh experiences with more accessibility, and often more transparency, than their legacy counterparts like conventional banks, for which McKinsey has predicted a significant downturn in profit over the next five years. [i] As Jamie Dimon, CEO of JPMorgan Chase, has said, "…if banks don't up their game, then tech companies will take over the industry's business. There are hundreds of startups with a lot of brains and money working on various alternatives to traditional banking." [ii] Digital disruption might have started with a knock, but now it's pounding on this industry's doors.

Here's the good news. Rather than view this as an inevitable misfortune, many financial services leaders are choosing to see opportunity ahead—to improve business efficiencies and costs, while developing exceptional customer relationships. Nadeem Shaikh of Harvard Business Review perhaps puts it best: "Startups alone won't fill the vacuum: Stewards must emerge from the old guard of financial services." [iii]

i   A Brave New World for Global Banking: McKinsey global banking annual review, McKinsey, 2016
ii JPMorgan Chase Annual Letter to Shareholders, Jamie Dimon, 2016
iii The Financial Industry Needs to Start Planning for the Next 50 Years, Not the Next Five, Harvard Business Review, 2017

Data: a double-edged sword

When it comes to data, financial services organizations have cause to celebrate how much they have at any given time (more than many other industries), but must simultaneously adhere to stringent regulations to protect themselves from breaches and to preserve customer trust. Maintaining and improving that trust, an Accenture survey finds, is an essential priority for security and compliance programs in financial services, particularly in an age where privacy concerns are on the rise. [i]

At AWS, we understand these obligations and have worked with the most complex financial services organizations to meet security and compliance requirements. As it is for our customers, protecting data is our highest priority. Our global infrastructure is built to satisfy the requirements of our most security-sensitive customers, and provides all the best practices of AWS policies, architecture, and operational processes, as well as alignment to a variety of compliance standards, from SOC, to FISMA, PCI, ISO, and others.

AWS also offers numerous security services to manage access, analyze data for irregular activity with machine learning capabilities, mitigate DDoS attacks, encrypt data, and send alerts whenever changes are made to your AWS resources. In addition, AWS customers also have access to governance- focused, audit-friendly service features to meet security compliance regulations and audit standards. With AWS, customers are able to establish and operate in a security control environment that keeps their data safe while providing comprehensive compliance controls that build on traditional compliance programs.

From three weeks to 45 seconds

A great example of AWS partnering with a financial institution to meet security and compliance standards is National Australia Bank (NAB). At 160 years old, NAB is Australia's oldest bank, serving some nine million customers.

When making its bold transition to the cloud with AWS, NAB implemented Cloud Adoption Standards & Techniques, or CAST, where security and compliance is baked into its processes and fully automated with AWS.

NAB also put in place a Continuous Compliance Framework and has built real-time detective controls into the infrastructure. So every time something changes on AWS, there is an event that they catch. If the change is non-compliant, it either temporarily shuts down the service or automatically deploys additional controls.

"Security is a massive pain for any bank," said Yuri Misnik, Executive General Manager, NAB, while speaking at AWS re:Invent, "but right now we can deploy security controls into the environment in 45 seconds. It previously took us three weeks." This gives NAB's engineers confidence that they're doing things right, even when they're doing them fast.

Yuri Misnik
Executive General Manager
National Australia Bank

By the end of 2020, NAB expects to have 35 percent of workloads in the cloud. For a highly regulated industry, this is a fast pace.

[i] "Data Privacy: a platform for building trust-based relationships in financial services, Accenture, April, 2019.

Part 2

Navigating the shift

Cloud implications for financial services organizations

What we find with financial services leaders is that often there are still many questions about the cloud that go beyond regulations, security, and compliance. Once the book is closed on the decision to migrate, it immediately opens another around the implications of such a major shift. What will we migrate first? Everything at once or piecemeal? How do we restructure? How do we shift our teams? What about training, since new skills will be needed? How will this affect our customers and how we interact with them? Also, how will this affect the products and services we offer in the market? These are some of the questions that arise.

The reality is that moving to the cloud doesn't have to be a giant leap. Many financial institutions are already using cloud apps in everyday operations. It's more realistic to migrate apps and workloads over time as part of a careful, deliberate roadmap that has buy-in from the entire business. Given all the regulations and legacy systems, it's not atypical for a major financial services organization to require 3-5 years for the complete move to the cloud. So while the urgency might feel palpable, there is time to plan.

The most important part of the shift is one that often isn't even considered in the initial plans: company culture. Adrian Cockcroft, Vice President of Cloud Architecture Strategy, AWS, comments that "the ability of an enterprise to innovate isn't about technology adoption, it's about people." And when people are on board, organizations are able to disrupt competitors and enter new markets more quickly and efficiently. [ii]

[ii] "Cloud for CEOs: Measure innovation with one metric," Adrian Cockcroft, VP of Cloud Architecture, AWS, 2019.

Angie Ruan, Senior Vice President of Global Technology at Nasdaq, has experienced this firsthand. She observes that the cloud might change the technology, but some things— mindsets—don't change so easily. "It's well beyond the tech," she says. "When you adopt cloud, you're creating an entirely new ecosystem. The tech needs to align with your goals, your people, and your culture, not the other way around."

Like many organizations that have embraced a cloud strategy, Nasdaq has been freed from old models. "It used to be, you start with engineering, then QA, then infrastructure, then security, and so on. It took forever to get things done," Angie says. "Now everything's combined and happening concurrently. It's reduced the cycle of product development and delivery. But first, everyone has to get behind the new way of doing things."

In fact, employee readiness is a great predictor for ability to innovate with cloud. In working with AWS customers, Adrian Cockcroft has seen three levels of innovation:

- Incrementally better services
- Gap-filling value creators
- Entirely new customer experiences

Taken together, these innovations provide enterprises with sustainable advantages in market share and customer loyalty. They help organizations not only expand and improve on what they offer customers today, but pursue new experiences that may not have been possible before. But to get there, organizations must address how they will help their people gain new skills, work in new ways, and become effective in their cloud adoption.
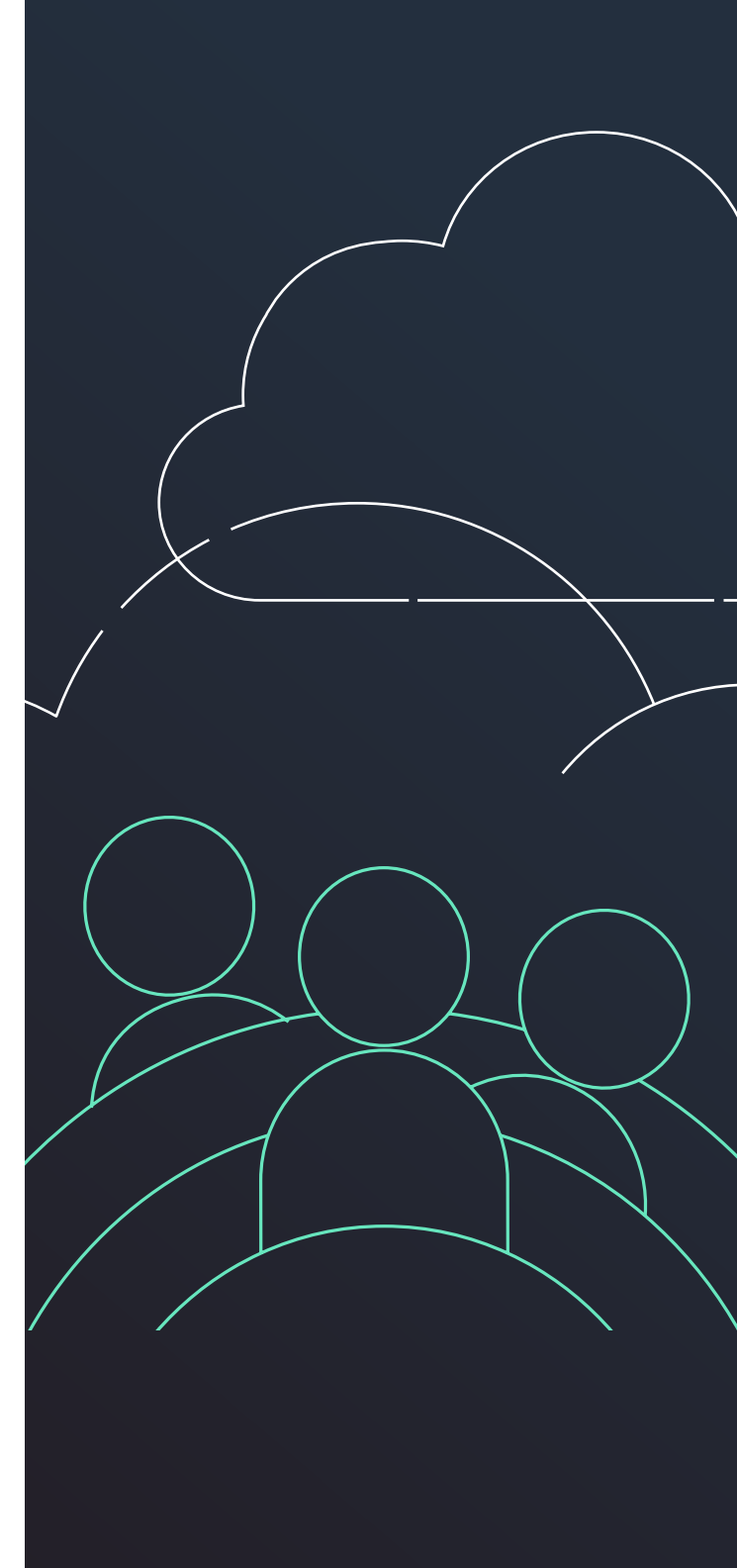
Sage advice

Claus Moldt, CIO of FICO and an AWS customer, was straight-forward about the implications of the cloud on financial services organizations when he spoke at AWS re:Invent. "It's not realistic to simply lift and shift everything," he said. "In our case, we're rewriting part or all of our code to migrate properly—you have to plan for everything."

FICO began its cloud journey four years ago and now employs what Claus calls a "cloud everywhere" strategy. In its former on-premises environment, it took 6-24 months to launch a product, but FICO also had solutions that could consist of more than 30 million lines of code. The cloud wouldn't be an easy move, but after learning about AWS' broad compliance services and certifications, it became a more and more attractive strategy.

Claus is a firm believer that, once the cloud decision is made, financial enterprises, due to so many unique factors like regulations, must get it right from the beginning. Leaders must determine how they will scale and how they will utilize all the great tools the cloud has to offer. "Believe me, if you use AWS cloud and tools, you will see speed almost immediately. But you still have to consider all the pieces of the automation framework you put in place."

Apart from areas like margin, high availability, disaster recovery, and many others that FICO considered, there is culture. "It's important to educate the internal team as best you can," Claus says. "Discuss openly what changes the cloud will bring and what the new standards will be. Everyone has to be on board, and it helps if people are not just willing, but excited."

Finally, Claus believes the cloud journey is not one any financial services company wants to take alone. With all the complexity, you need a partner. "Have AWS guide you," he says. "They've seen a lot of implementations and use cases. We don't know everything, and we need to learn from the best and brightest. AWS is very willing to come to you, and help you, and bring that domain expertise."

Claus Moldt,
CIO, FICO

FICO has developed a close relationship with AWS as they implement their "cloud everywhere" strategy.

Watch the full FICO case study video here.

Part 3

Delivering business value through the cloud

Realizing business value: the customer rules

If there is one major force driving financial services organizations to the cloud, it's the customer. From banking to credit cards to trading, most customers want the same things they've grown accustomed to in other areas of their lives: more control, more flexibility, and seamless, even real-time, experiences. These experiences are almost always digital and reliant on the cloud. And what we've learned at Amazon is that you give the customer what they want, or they will go elsewhere.

So, really, "digital disruption" may more aptly be called "customer disruption." Digital might be the platform, but customers and their expectations are behind it, and this is where the business value truly lives.

The good news is that access to data and how it's used is what truly defines a rich, personalized experience, and financial institutions are sitting on mountains of it. Recent research by Accenture shows that, by and large, customers are willing to share even more information with financial institutions for reciprocal benefits like personalized offers, more intuitive services, and more competitive pricing. [i]

It's challenging for this industry to meet the customer where they are while also meeting regulatory and shareholder mandates. But many financial organizations are finding success as they adopt the cloud. The cloud has proven business metrics—it allows enterprises to not only slash costs, but also to increase staff productivity, improve operational resilience, and drive business agility—all of which, together, enable financial services employees to create and deliver the best digital experiences for customers.

More importantly, cloud allows enterprises to accelerate the pace of innovation. For AWS's Adrian Cockcroft, cloud is a powerful tool for decreasing time-to-value, enabling organizations to programmatically improve how they innovate, and how quickly, and increase the pace those innovations get in front of customers.

i   Financial Services Consumer Study, Accenture, 2019.

Cloud in context

So, how is the cloud playing out in the strategies of leading global financial institutions?

Take Nasdaq. Angie Ruan says that, while Nasdaq might be a listing company, it's also become a data company. Powering hundreds of markets around the world creates incredible amounts of information—and many of its customers require access to that data, which they can leverage to build deeper relationships. There are also more practical business drivers. "Before AWS cloud, we used to run billing once a month," Angie says. "Now it's literally every night. We're able to generate real-time reports that we could never have generated on-premises." And in the old infrastructure days, Angie remembers losing a lot of sleep when systems failed. "No more," she says. "Now we have more time to focus on our customers."

Dean Del Vecchio
EVP, CIO, and Head of Enterprise Shared Services, Guardian

Guardian is retiring all data centers in favor of the AWS Cloud, lowering costs and driving greater agility.

Read the full announcement.

"AWS has helped Guardian get ahead of insurance industry disruption driven by new technology and changing customer expectations, and enabled us to innovate and provide services how, when, and where our customers prefer," says Dean Del Vecchio, Executive Vice President, Chief Information Officer, and Head of Enterprise Shared Services at Guardian. "AWS' reliable, secure, and proven infrastructure lets us scale quickly and access industry-leading services to test and deploy new technologies that delight our customers while protecting our assets in the cloud."

At Fidelity, Head of Technology & Global Services Roger Stiles is enthusiastic about their progress with AWS. Fidelity leverages AWS and innovative technologies to digitize service calls, integrate interaction data, and apply machine learning models to determine customer intent and deliver highly personalized experiences.

Roger Stiles
Head of Technology & Global Services, Fidelity

Fidelity relies on AWS for customer call transcription and to analyze billions of records.

Watch more from Roger at AWS re:Invent 2018 here.

Leading financial services organizations want the very best for their customers, and are transforming to help them deliver on that vision. At AWS, there is also a shared sense of responsibility for our customers, and for their customers. The cloud has a flattening effect in financial organizations that gives IT and business a more natural harmony so they can make great customer experiences possible.

We're excited to continue partnering with an industry on the brink of great change, and continue to learn as much from our financial services customers as they might learn from us.

Frank Fallon

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Learn more

AWS Financial Services

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AWS Enterprise Strategy blog

Author bios

Miriam McLemore

Miriam is an Enterprise Strategist and Evangelist at Amazon Web Services (AWS), a division of Amazon.com, Inc. Here, she has been given the mission to make the case to senior leadership teams, board members, and regulators that transitioning to the cloud, specifically AWS, is a sound, secure, fiduciary-based strategy to positively transform their business with high shareholder ROI. Before joining Amazon, Miriam was the Chief Information Officer, Corporate and Consumer Technologies, of the Coca-Cola Company. In this role, she provided global leadership across the enterprise on all technology matters in support of global marketing, consumer/commercial leadership, product R&D, human resources, legal, sustainability, public affairs, and strategic security. Specific accomplishments include creating solution and information management strategy, defining a global marketing technology ecosystem, simplifying and cloud-enabling the consumer-facing and legacy application portfolio, and shaping new companies/products through the startup and venture capital community. Miriam's outside advisory affiliations include the Georgia CIO Council and leadership team, TechBridge, CIO Advisory Board for Box, Georgia Southern University School of Engineering and Information Technology Advisory Board, and member of The Bridge Community—a technology startup incubator in Atlanta. She received her B.S., Business Administration with a concentration in Accounting/MIS, from the University of North Carolina, Chapel Hill.

Jonathan Allen

Jonathan joined AWS as an Enterprise Strategist and Evangelist in May 2017. In this role, he works with enterprise technology executives around the globe to share experiences and strategies for how the cloud can help them increase speed and agility while devoting more of their resources to their customers. Prior to joining AWS, Jonathan was Chief Technology Officer and Senior Director in Capital One Banks UK division. He was part of the bank's Global Technology Leadership team that selected AWS as their predominant cloud partner in 2014, and was accountable for architecting, engineering, and execution of the technical buildout and system migrations of the bank's AWS cloud strategy in partnership with the US divisions until 2017, by which time all development had moved cloud first. Jonathan managed a global team and held all budgetary responsibility for the technology operations and strategy execution, adoption of agile only, technical talent transformation, and recruitment and creation of the bank's cloud governance framework. During Jonathan's 17 years at Capital One, he also led large-scale transformations including the roll out of regulatory compliance, move from outsourcing to out-tasking, engagement with AWS Cloud Partners, adoption of DevOps at scale, and the focus of an engineering-led culture. In 2012, he was awarded IT Manager of the Year by The Chartered Institute for IT. He holds a diploma in Computer Studies from Loughborough College and a CIO MBA from Boston University.