**Capital One Completes Migration from Data Centers to AWS**

***Introduction:***

Capital One, one of the largest banks in the United States, announced in November 2020 that it had completed the migration from all eight of its on-premises data centers to Amazon Web Services (AWS), becoming the first US bank to report that it was all in on the cloud.

Going all-in on the cloud has enabled both instant provisioning of infrastructure and rapid innovation.

The company supports its customers by providing more than 40,000 ATMs across the country as well as Capital One Cafés that offer access to Capital One products, customer support, digital and financial tools, and Money Coaching sessions and other financial workshops.

Cafés serve as community hubs where visitors can connect to free wireless internet, use the space to work or study, or just grab a cup of coffee.

With banking customers increasingly expecting customized experiences delivered in real-time the Capital One leadership team knew that for the company to continue developing better, more human ways to engage with its customers, it would need to operate more like a tech company.

Company leaders knew that this transformation would require moving to the cloud so that Capital One could manage data at a much larger scale and take advantage of machine learning for building proactive, real-time, personalized customer experiences.

***Building a Cloud-First Organization:***

Once Capital One had set its sights on the cloud, it began the long-term planning for how to exit its on-premises data centers and reimagine itself as a technology company with a completely new approach to talent management, technology development, and operations. They knew that they were embarking on a massive transformation. Success required that They have, first, a vision of where we were going; second, the courage to make a bold move; and third, the tenacity and perseverance to make it through.

In addition, Capital One also engaged AWS to participate in Capital One’s annual software engineering conference, SECON, which offers its associates keynotes, demonstrations, breakouts, and in-depth sessions with subject matter experts. This helped keep application design and operations aligned with cloud architectural best practices.

***Accelerating Innovation:***

By migrating to the cloud and changing its technology operations, Capital One has been able to scale to meet demand and move faster in a variety of ways. As a result, Capital One has cut its disaster recovery time in these testing exercises by 70 percent, and it has reduced both critical incident resolution time and the number of transaction errors by 50 percent.

Most important, though, is that AWS has provided Capital One with the flexibility, capacity, and micro services architecture it needs to create at scale the experiences that its customers want.

In addition, the Capital One mobile app combines the power of machine learning with cloud-based, multi-region infrastructure. Another example of a customer experience is Capital One Shopping—a free tool that helps shoppers save money—which was created using modern service architecture, data streaming, and cloud technology, including Amazon EC2, Amazon Simple Email Service (Amazon SES), and Amazon RDS. Technology team members could control and monitor the company’s AWS infrastructure through APIs from anywhere without having to worry about capacity constraints or data center maintenance

***Building the Bank of the Future***

Capital One’s digital transformation began with the ambition to become a modern technology company that could develop its own applications and leads the banking industry in innovating for customers.

“Capital One today is an entirely different company from what it was 8 years ago,” says Nims. “

We can now build new experiences that are powered by more data and available in real-time with algorithms and artificial intelligence. ”The key to doing so, for Capital One, was approaching the move holistically. It not only went all-in on migrating to AWS—but it also reimagined its entire organization, hiring and developing a diverse group of data scientists, developers, and experts in human-centered design who could work together to transform Capital One into a pioneering technology company.