

AWS
re:Invent



FSI205-PT3

Capital One's journey to being "all in" on the cloud

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AWS and Capital One



- Capital One started its cloud migration in 2015
- Selected AWS as a strategic partner to help in its tech transformation
- Wanted to create new and innovative customer experiences
- AWS collaborated with the Capital One cloud engineering team and LOB workload teams
- Capital One successfully migrated hundreds of workloads to AWS

Capital One at a Glance

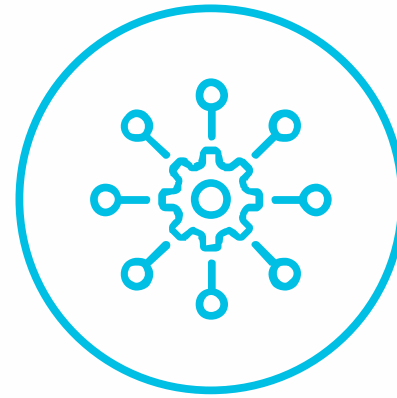
- 25-year-old, founder-led company
- Fortune 100 company (NYSE: COF)
- More than 70 million customer accounts and more than 50,000 associates
- Major operations in 15 U.S. cities, Canada, U.K.
- A leading diversified bank with:
 - \$390.4 billion in assets
 - \$266.2 billion in loans
 - \$262.6 billion in deposits



Building the Bank of the Future Requires a Comprehensive Transformation



Talent

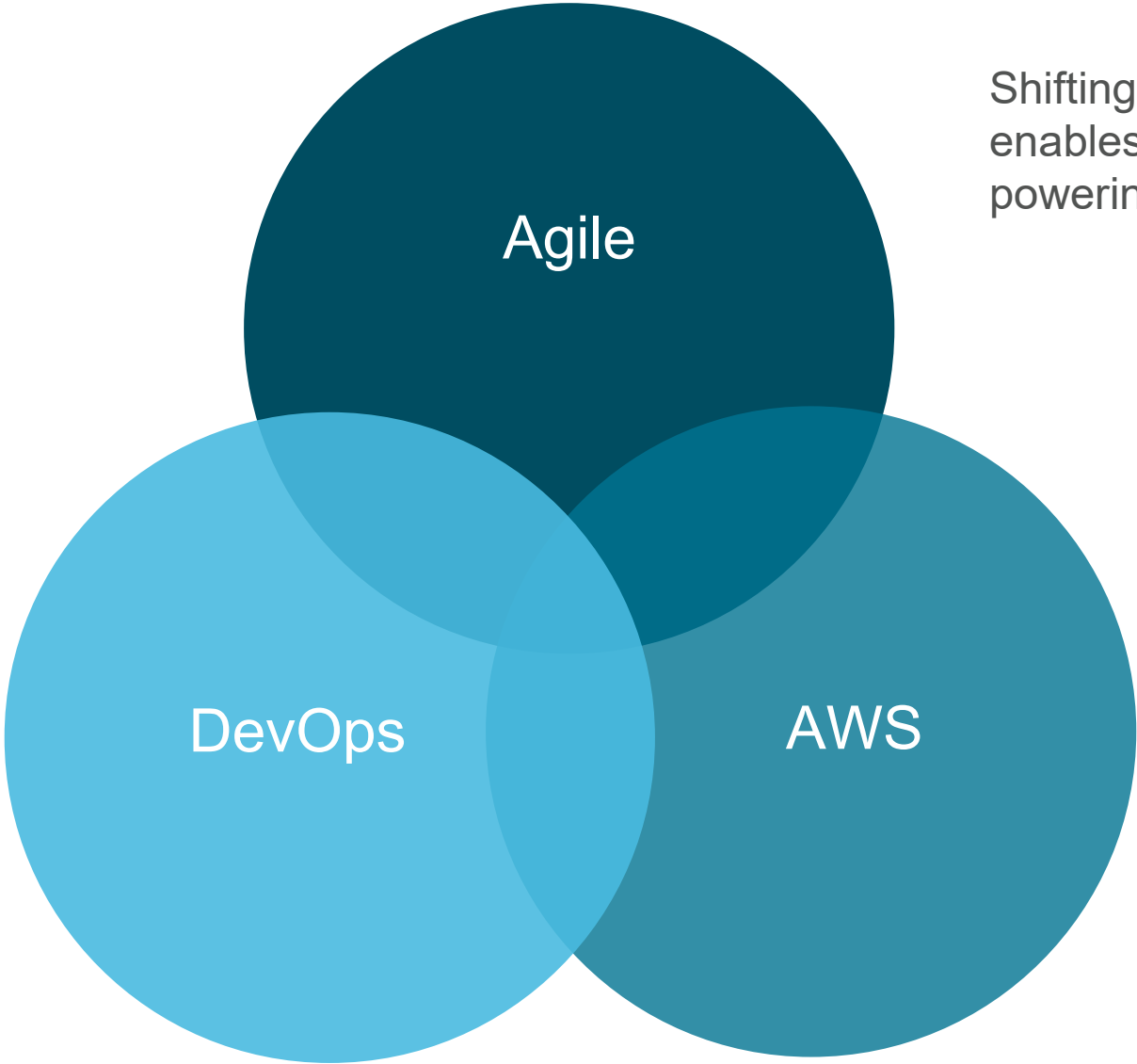


Technology



How We Work

Agile + DevOps + AWS = Cloud Adoption



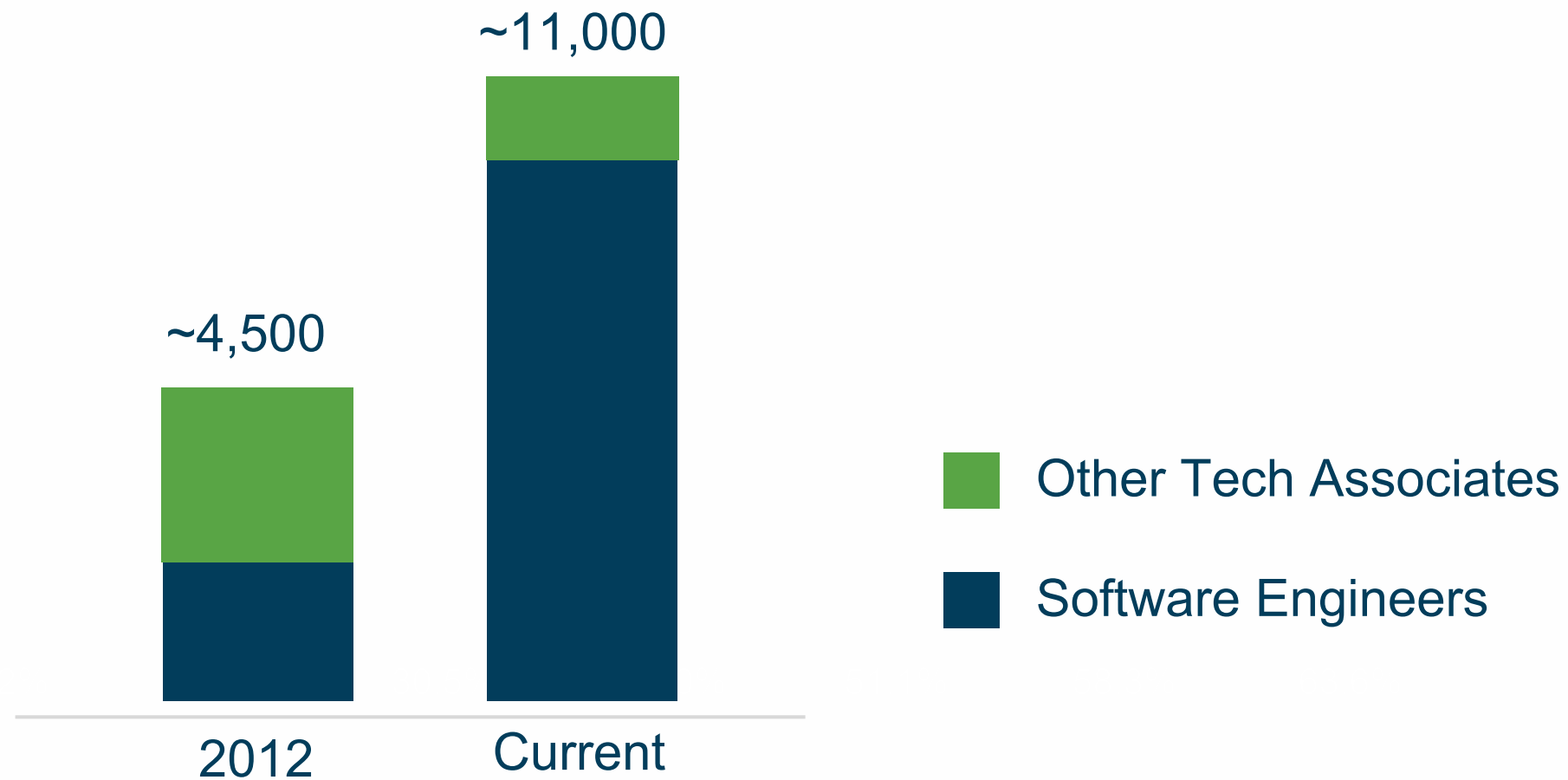
Shifting from Waterfall to Agile enables iterative development powering flexibility

DevOps helped us move from silos and into full team ownership

AWS helped us with organizational and engineering best practices needed to work in the cloud

We Have Scaled Up Our Engineering Organization

Number of Technology Employees



Data Center Exit Was a Partnership Between Tech and Non-Tech



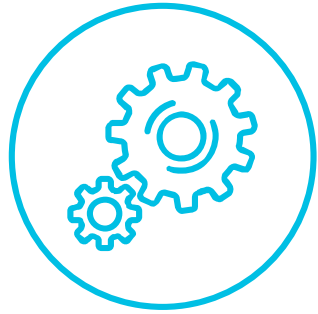
The One Big Takeaway: Do the *Hard Things First*

- Establish cloud governance to stay well managed
- Build software to accelerate AWS adoption
- Prioritize moving net new investment first
- Increase knowledge share and common tooling where possible to strengthen collaboration across app teams



Inside a Capital One data center earlier this year

Global Architecture for Highly Regulated Enterprises



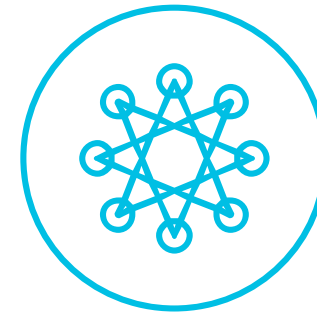
Stress both region and cross-region application resilience



Understand fleet health with real-time data and analytics



Extreme TRES
Shift to Active / Active
Automated failure recovery



Infrastructure as code
(AMI Rehydration)

Close Partnership with AWS

Cloud Architecture

- AWS and Capital One Executive Framework fosters continuous collaboration and feedback between the organizations
- Leveraged AWS best practices and incorporated them into Capital One processes to get desired outcomes

Operational Excellence

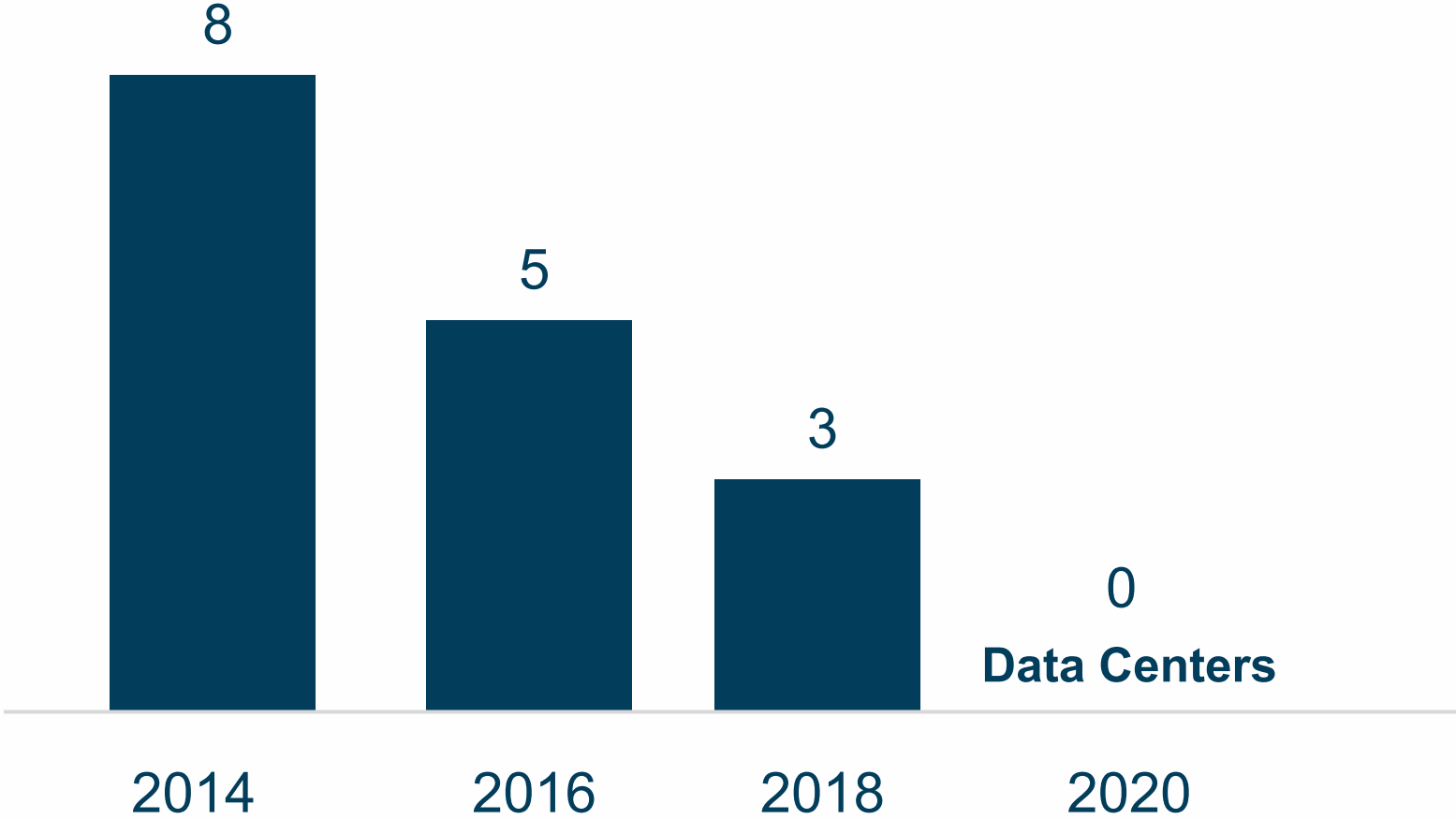
- We adopted AWS's Operational Readiness Review Framework
- We shared our learnings back with AWS, improving framework for both companies
- Expanding Shared Responsibility Model

Associate Training

- We set ambitious goals around AWS certifications
- AWS Navigator: AWS Solutions Architects lead Tech Talks and Workshops tailored to Capital One
- AWS has taken part in our internal software engineering conference by providing a keynote speaker and subject-matter experts

We Have Become an Entirely Cloud-Native Company

Number of Data Centers



Our Ability to Quickly Respond to COVID-19 Was Enabled by the Cloud



Ability to monitor infrastructure through AWS using APIs outside data centers



Access to digital banking tools through our Mobile App, allowing customers to bank from home

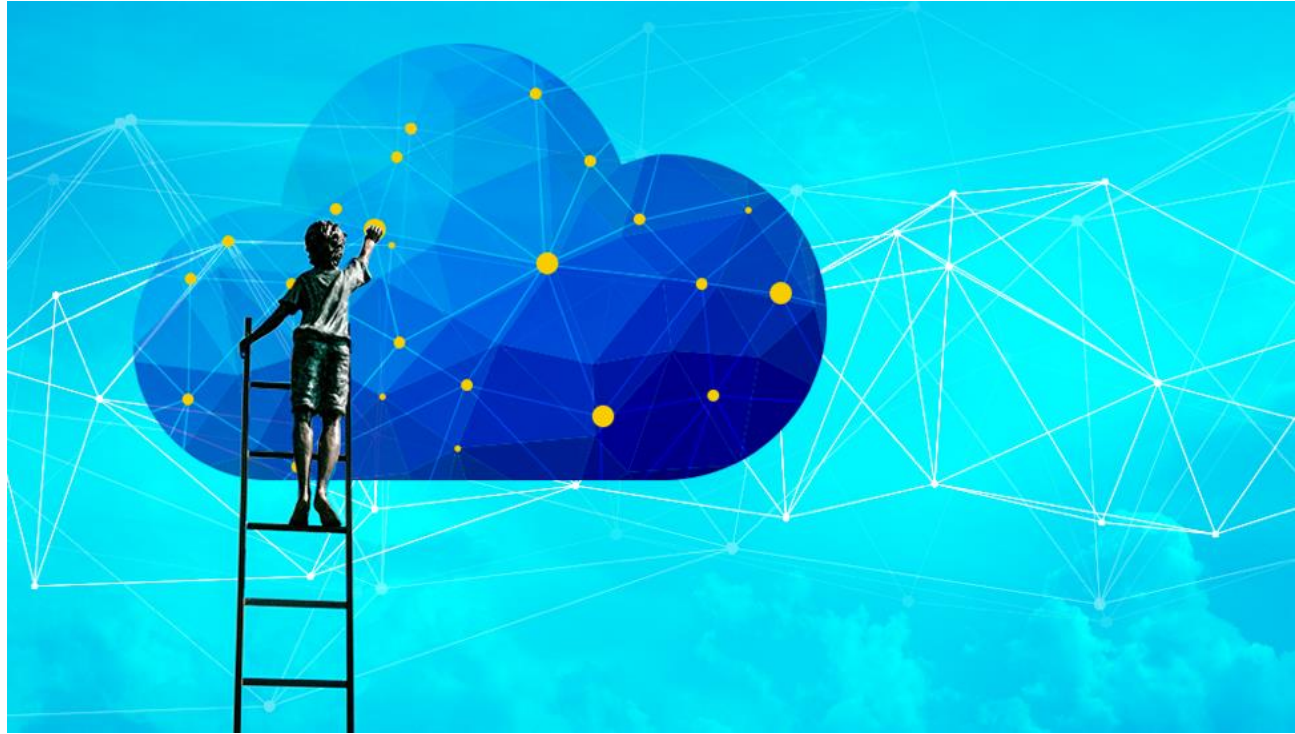


Using Amazon Connect, 4,000 Capital One call center agents are working from home



Digital workspaces to enable associates to WFH using cloud-based Zoom, GSuite, and Slack

Takeaways



- Own our digital transformation
- Empower our 50,000 associates
- Serve 70 million customer accounts
- Contribute to the open source community
- Develop software to drive cloud acceleration

Thank you!





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