

# New Tools For a New World

*Cloud as the Catalyst for Change in Financial Services*

# Right Now...

...a top 10 bank in the US is moving to greatly reduce its data center footprint.

...a major insurer is performing actuarial calculations in minutes as opposed to days...  
(and is saving \$millions in the process)

...US regulator, FINRA, is loading today's 35 billion market events into Amazon storage service to run surveillance on the US capital markets tonight.

...someone is asking "Alexa, when is my next Capital One loan payment due"...  
(and for stock quotes from Fidelity.)

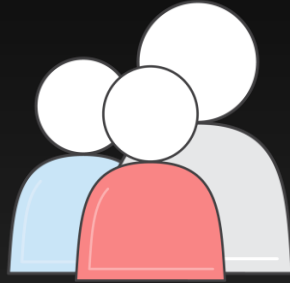
...2 of the top 10 asset managers in the world are moving "all in" to AWS.

Right Now.... The Industry is **Changing**

# What's Driving the Change



Expanding regulatory oversight; ever-increasing compliance obligations



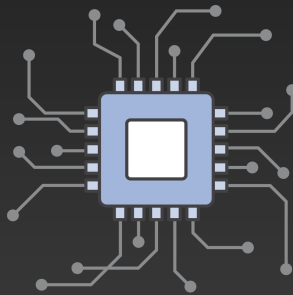
Increased competition, both from traditional peers and new non-traditional players



Information Security – due to increased public scrutiny, the frequency and ferocity of hacking attacks, and regulatory initiatives



Rising volumes of data, and the need to store and *analyze* it for compliance and competitive purposes



The rapidly changing compute paradigm: on-premise is no longer more secure or cost effective; IaaS continues to power innovation



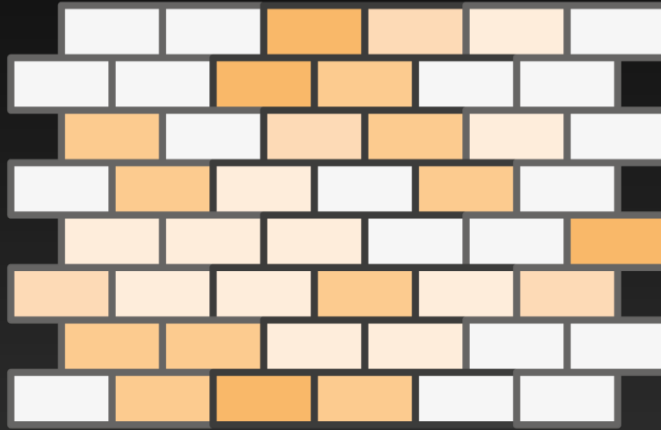
Scarce resources – in all areas including capital outlay, headcount, and skill sets.

# The Challenge of Change



Culture

*Moving to CI/CD*



Organizational Structure

*Moving to DevOps*  
*Cross-Functional Teams*  
*Realigning Incentives*



Governance

*Evolving Frameworks*  
*Re-thinking Risk*  
*Management*

# All of That to Say...



This is a great tool...



...until you encounter  
one of these

# The World Doesn't Work The Way It Used To

15yrs

The average lifespan of an S&P company dropped from 67 years in the 1920s to 15 years today

2/3

More than two-thirds of IT budgets go toward keeping the lights on

77%

of CEOs believe security risk has increased in the last few years and 65% believe their risk management capability is falling behind



## How This Affects You

You're left **without the necessary resources** to pursue critical business initiatives required to maintain a competitive advantage

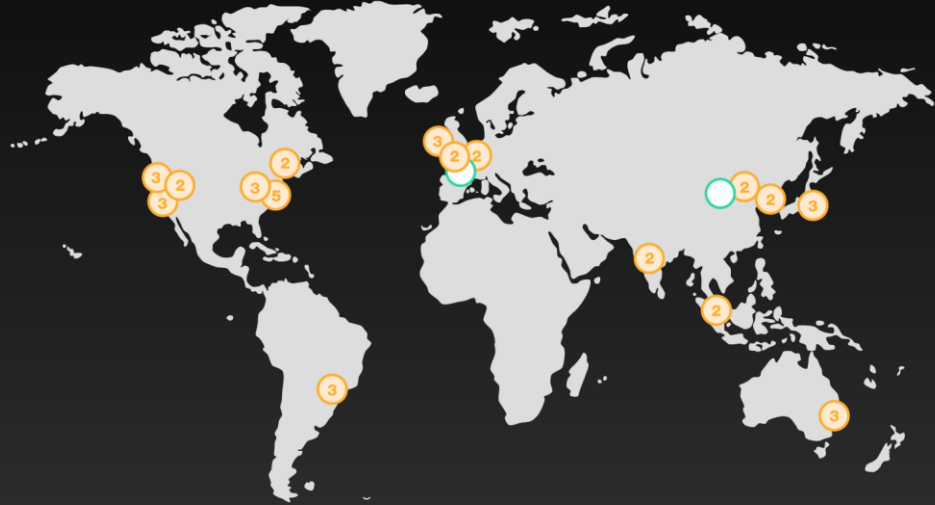


**Insufficient security, compliance and availability** can hamper your ability to compete and open the door to sophisticated, hard-to-identify attacks

Your traditional IT model **lacks the agility** you need to keep pace with innovative startups



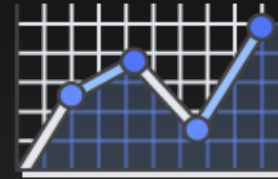
# AWS: New Tools For Today's World



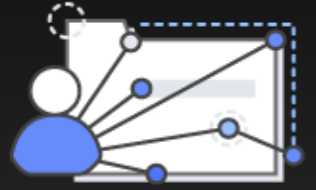
16 Regions – 42 Availability Zones – 68 Edge Locations



Fast, Consistent  
Performance



Highly Scalable



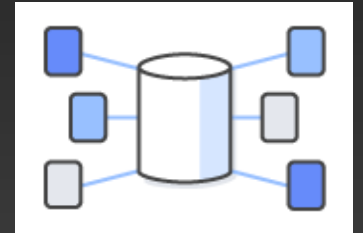
Fully Managed



Event-driven  
Programming



Fine-grained Access  
Control

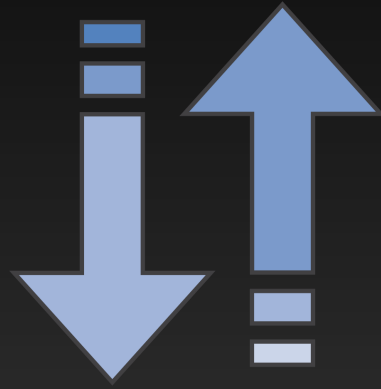


Document & Key-  
Value Structures

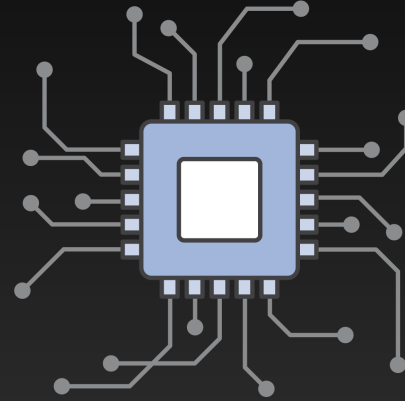
# Benefits of AWS Adoption



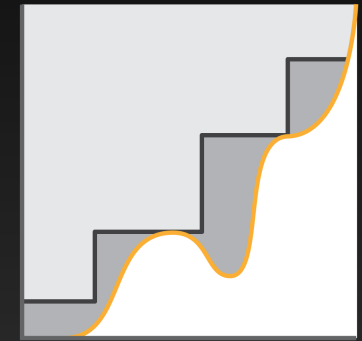
**Agility**



**Scalability**



**Leading Edge  
Technologies**

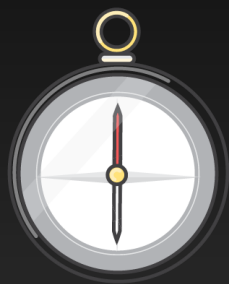


**Cost  
Optimization**

# Agility



Lower the time spent  
on infrastructure



Concentrate on  
new business  
initiatives



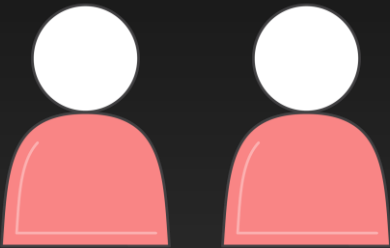
Dedicate more  
resources to  
innovation



# AWS Provides Robinhood with the Agility to Run with 2 DevOps Resources

*“We can look at real-time analytics and behaviors on our platform, that wouldn't be available at our scale if we weren't using AWS.”*

- Miles Wellesley, Head of Business Development, Robinhood



- Robinhood has **saved customers \$22 million in commissions** since launch, and transacted over \$1 billion – **all with only 2 DevOps resources**.
- Robinhood's lean staff used AWS to create a massively scalable securities trading app with strong built-in security and compliance features that **supported hundreds of thousands of users at launch**.
- Amazon Redshift has allowed the data science team to **identify fraud and fight money laundering, without needing to hire a data science infrastructure team**.

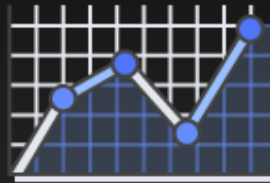


Robinhood is an investment platform that offers free trades for everyone through its iPhone and Android apps.

# Scalability



Fast, Consistent Performance



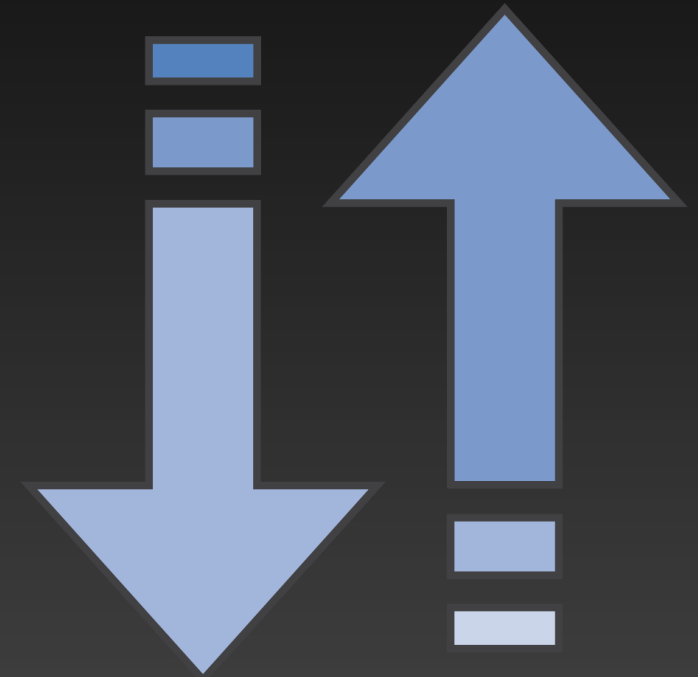
Auto-Scaling



Fully Managed



Fine-grained Access Control

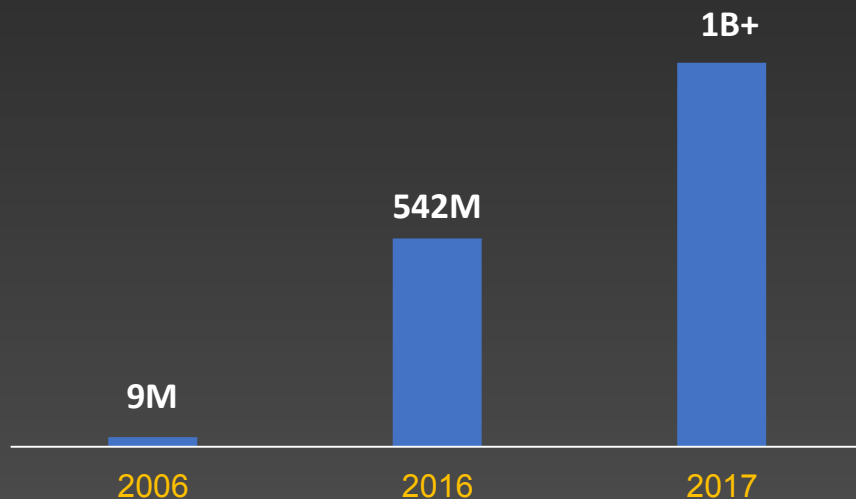


## BBVA is Using AWS to Scale Transaction Processing

*“The digital transformation of our business means that our technology platforms must be prepared to face an exponential transactions growth....working with AWS and having them accompany us on this journey not just with their products but also with their expertise, will accelerate our transformation.”*

- Ricardo Moreno, Global Head of Engineering, BBVA

Daily Transaction Volumes

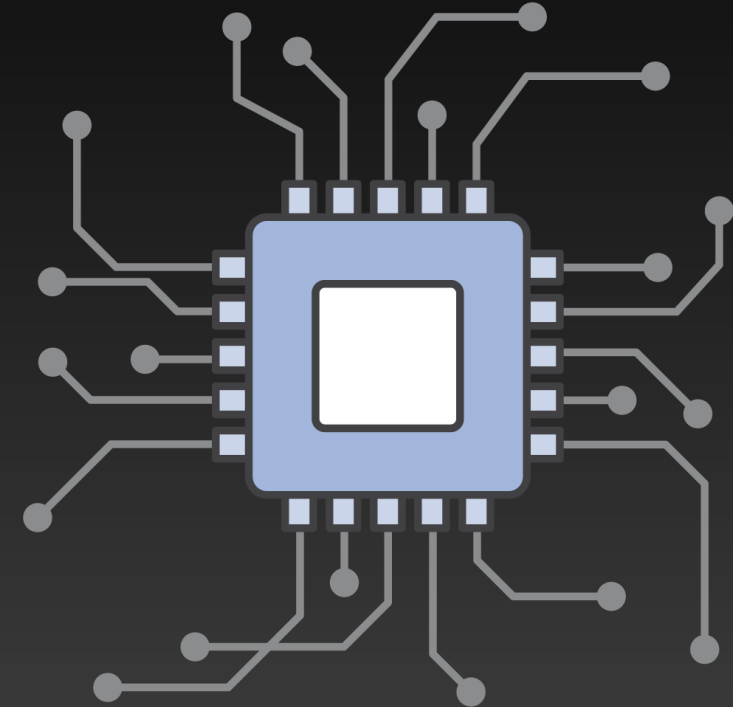
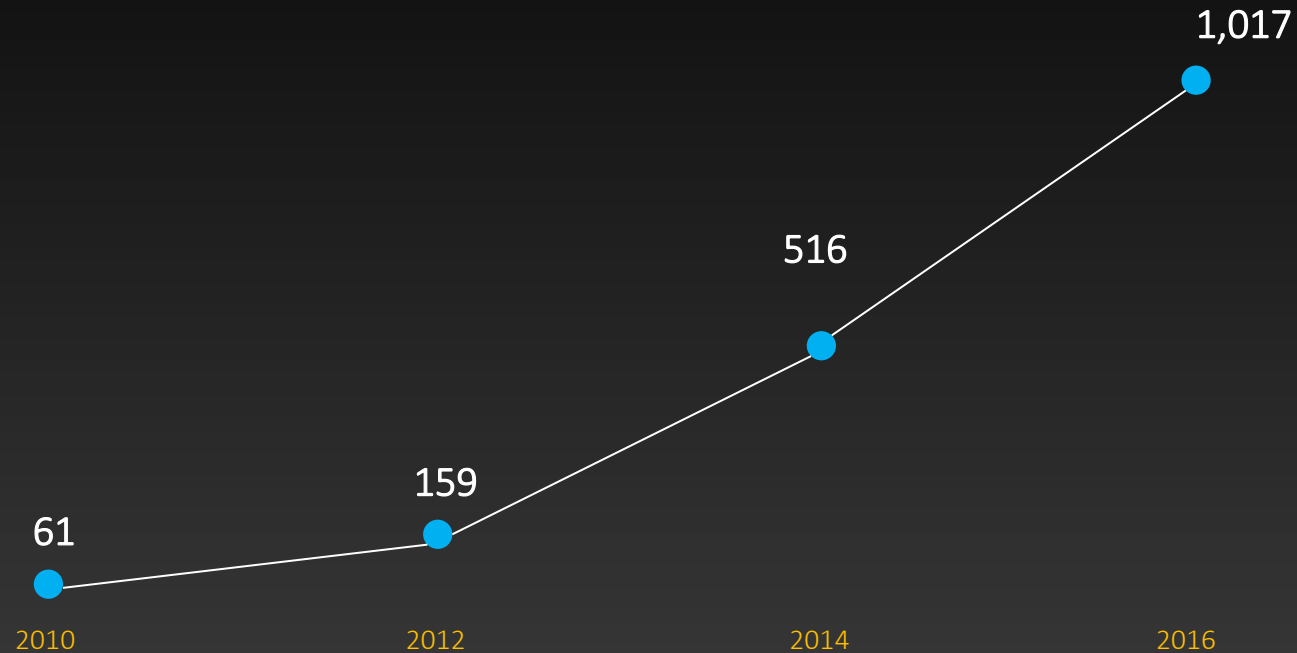


BBVA has been working with AWS to build a secure, flexible and **scalable** cloud-based solution that will help meet the **exponential growth** in transactions that the digital age brings.

# BBVA

Banco Bilbao Vizcaya Argentaria (BBVA) is a multimantional Spanish banking group, and the second largest bank in Spain.

# Leading Edge Technology



AWS has been continually expanding its services to support virtually any cloud workload, and it now has more than 90 services that range from compute, storage, networking, database, analytics, application services, deployment, management, developer, mobile, Internet of Things (IoT), Artificial Intelligence (AI), security, hybrid and enterprise applications. AWS has launched a total of 1,017 new features and/or services year to date\* - for a total of 2,913 new features and/or services since inception in 2006.

# IHS Markit is Bringing Innovation to the Industry Using AWS

*“With AWS we are extending our capabilities across divisions. Markit is taking a leadership role in how the financial services industry can leverage cloud to create a step change in innovation.”*

- Andrew Eisen, Managing Director, Head of Cloud Strategy, IHS Markit

Markit is actively deploying these solutions for clients on AWS:

- Markit Enterprise Data Management (EDM)
- Markit Analytics
- Markit WSO
- Markit Thinkfolio

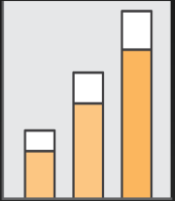
Markit is using AWS to develop new client-facing solutions in areas including blockchain, portfolio valuations, TCA, regulatory reporting, and pricing and liquidity



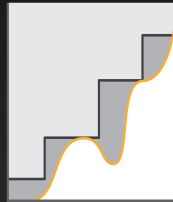
IHS Markit analyzes and distributes information on Aerospace, Defense and Security; Automotive; Chemical; Economics & Country Risk; Energy; Finance; Maritime & Trade, Technology, Healthcare & Pharmaceuticals, to customers in more than 150 countries.



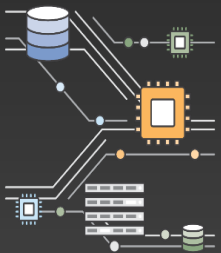
# Cost Optimization



Move from risk-laden up-front expense to flexible variable expense



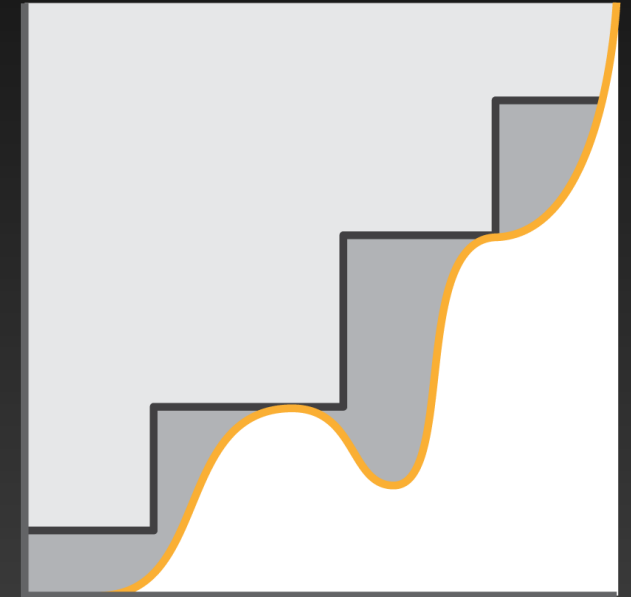
Stop guessing at capacity planning



Remove complicated infrastructure management that adds little business value



Go global in minutes



# FINRA uses AWS to Optimize Costs for Market Surveillance

*“For our market surveillance systems, we are looking at about 40% [savings with AWS], but the real benefits are the business benefits: We can do things that we physically weren’t able to do before, and that is priceless”.*

- Steve Randich, CIO, FINRA



## What FINRA needed:

- Analysis and storage of approximately 35 billion market events every day
- Cost-optimized infrastructure for interactively querying multi-petabyte data sets

## FINRA Realized:

- Increased agility, speed, and cost savings
- Estimated **savings of \$20M annually** by using AWS



FINRA is the largest independent regulator for all securities firms doing business in the US. FINRA oversees about 4,250 brokerage firms, about 162,155 branch offices and approximately 629,525 registered securities representatives.

# The AWS Cloud



**Innovate faster** and solidify your competitive advantage by merging startup agility with enterprise experience and resources.



**Eliminate costly technical debt** and reallocate resources so you can deliver high-value, revenue-generating projects faster.



**Reduce risk** by focusing resources dedicated to security, compliance and availability to the most important areas of your business.



Financial  
Services

**Worldwide** | N. America | LATAM | UK/IR | EMEA | APAC | Japan | China

**Frank Fallon**

*Vice President*

Worldwide Financial Services