



amazon
web services

AWS 101

Cloud Computing Seminar



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Solution Architect, Greater China

[Before we start]



[Who is Amazon.com?]

Consumer business



Seller business

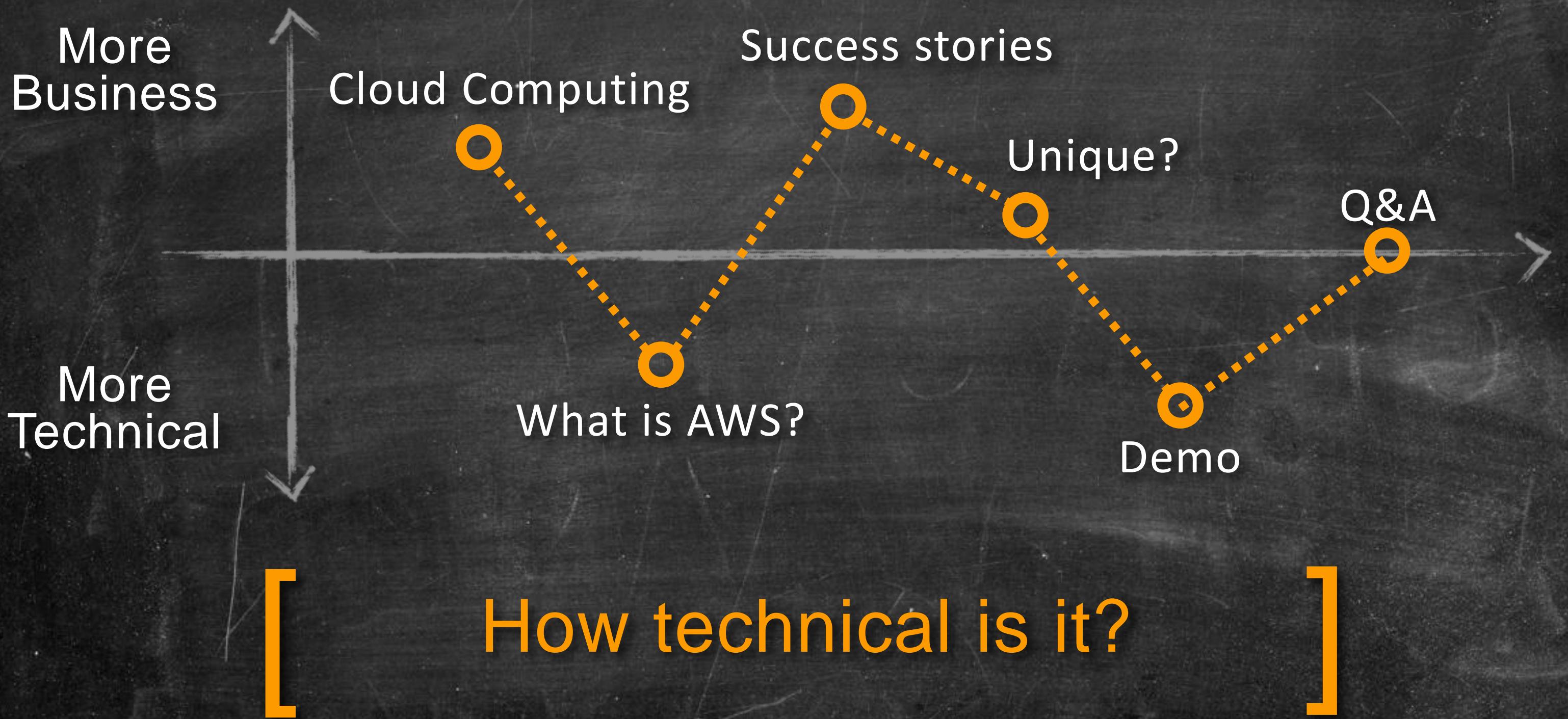
IT Infrastructure business



Amazon.com's three businesses

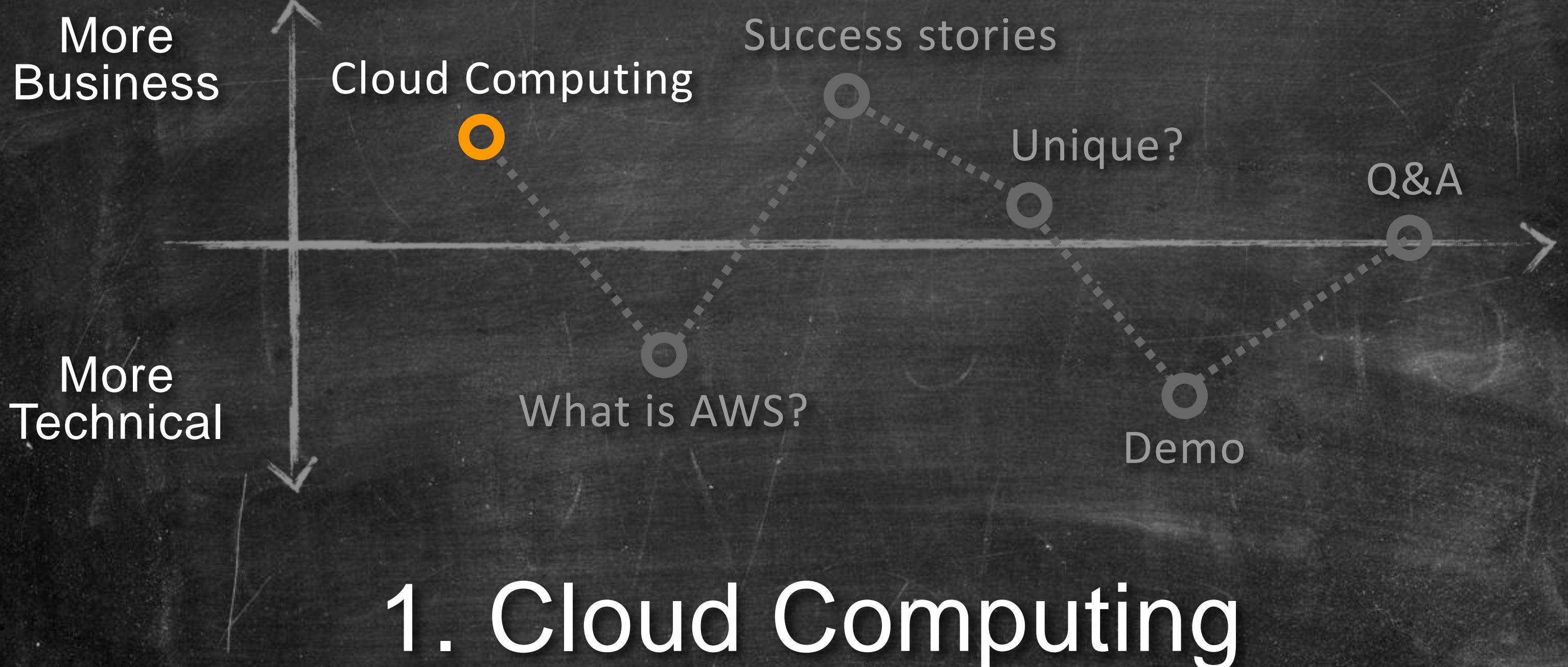
- 1) Introduction to Cloud Computing
- 2) What is Amazon Web Services?
- 3) Success stories
- 4) What is unique about AWS?
- 5) Demo
- 6) Q&A

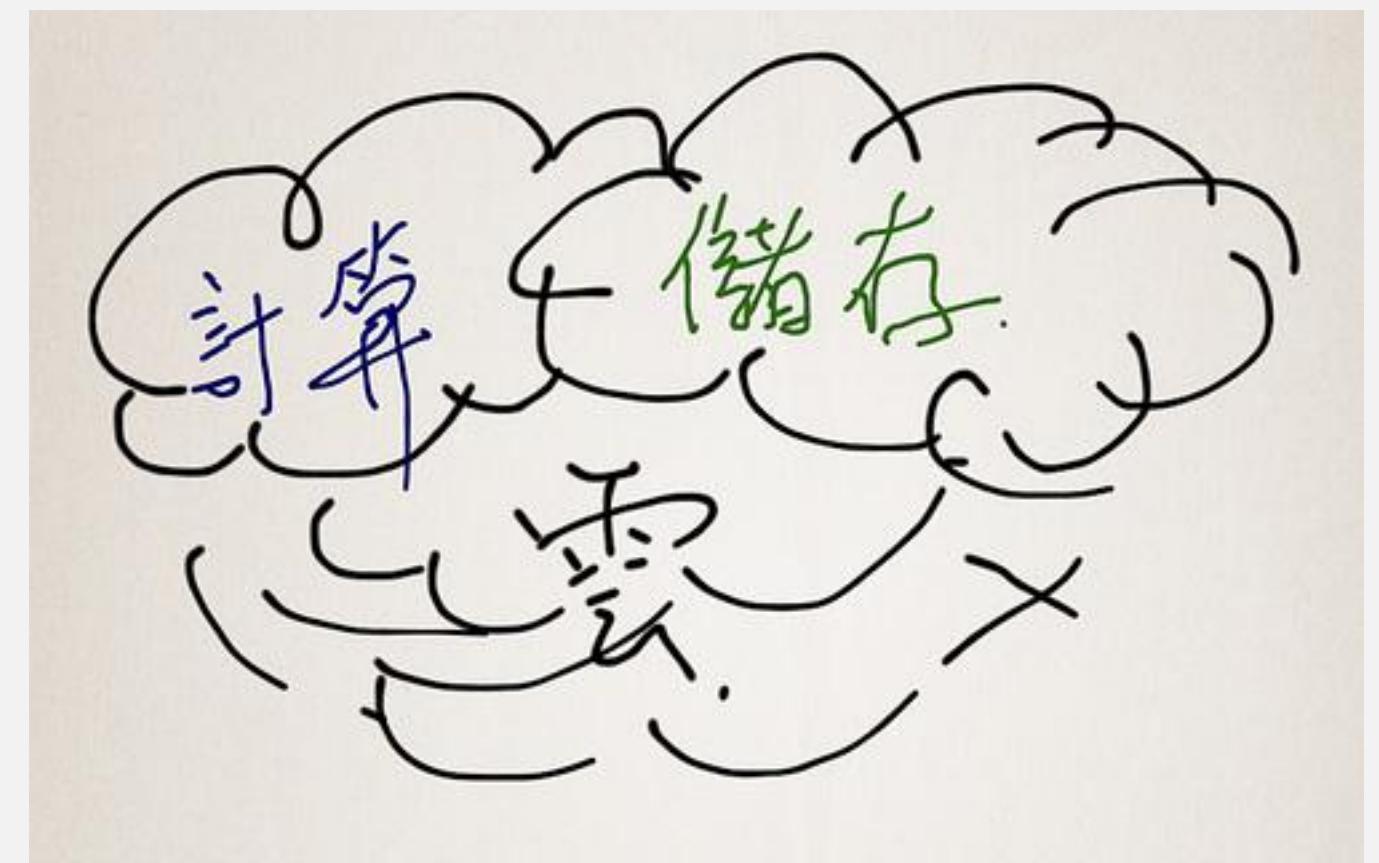
[Our plan for today]





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- 1) Elastic Capacity
- 2) Quick and easy deployment
- 3) No CapEx, No initial investment
- 4) Pay as you go, for what you use
- 5) Automation and Reusable components

Cloud Computing

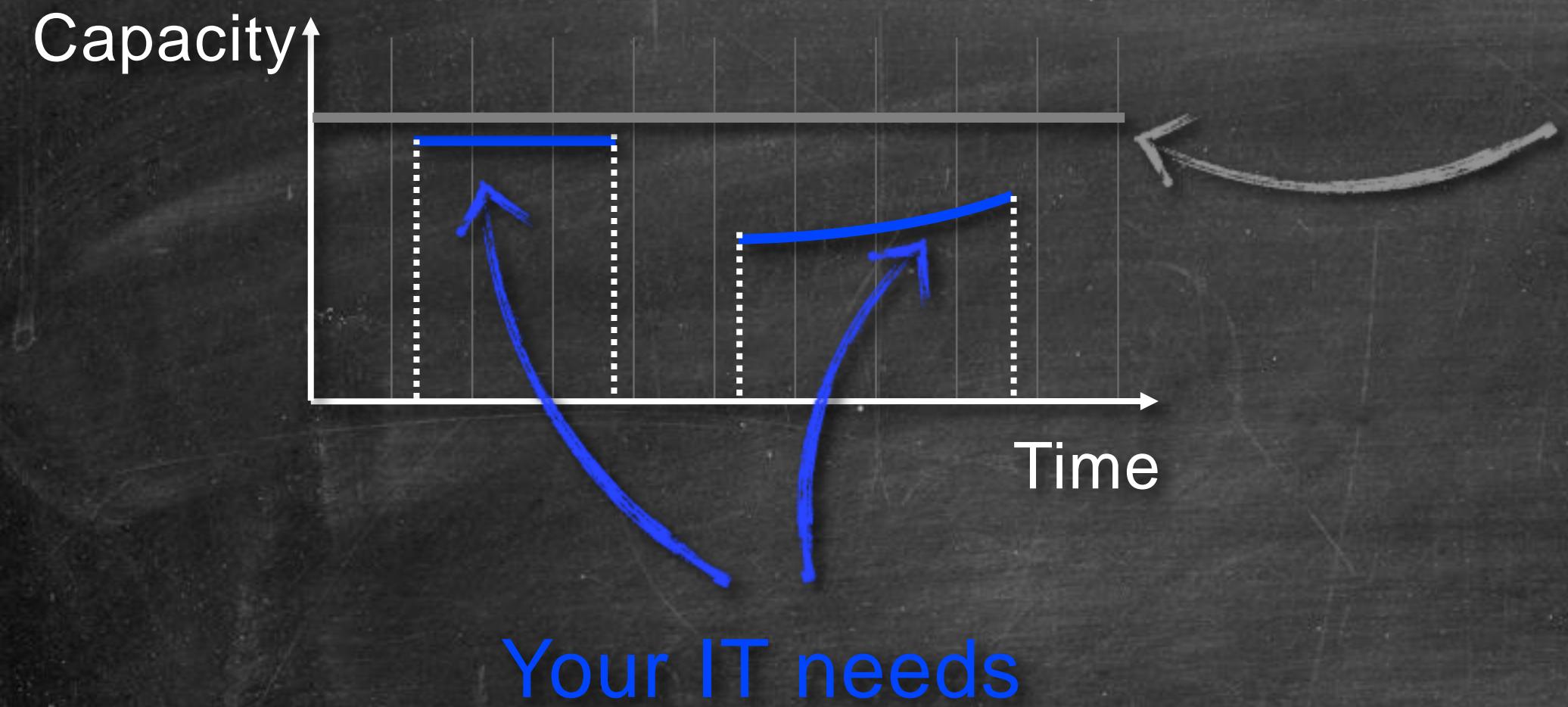


[1. Elastic Capacity]

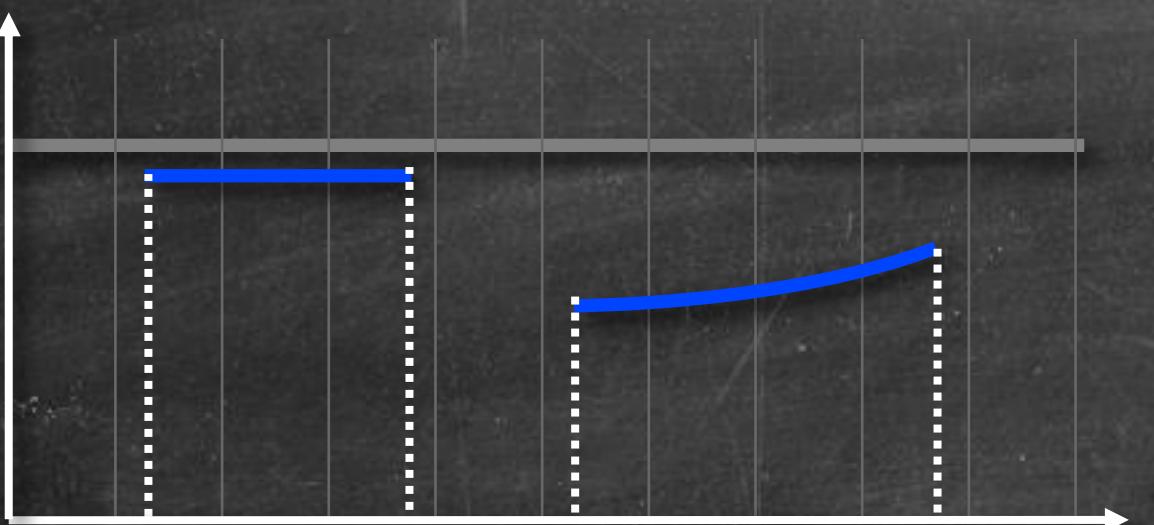


- _ Scaling up and down in minutes
- _ No need to provision
- _ Optimize resources based on your needs
- _ Can easily manage unexpected peaks

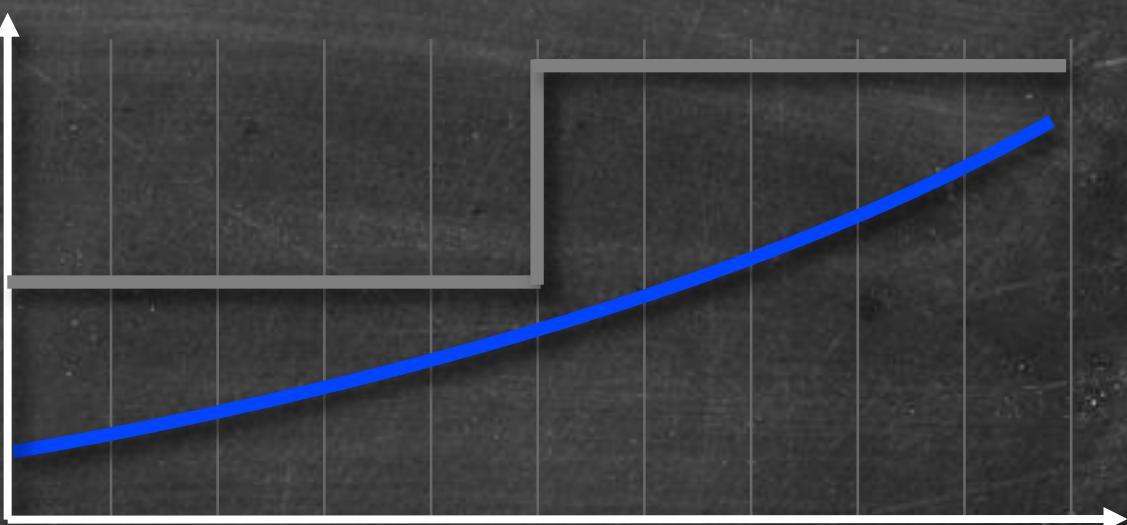
[1. Elastic Capacity]



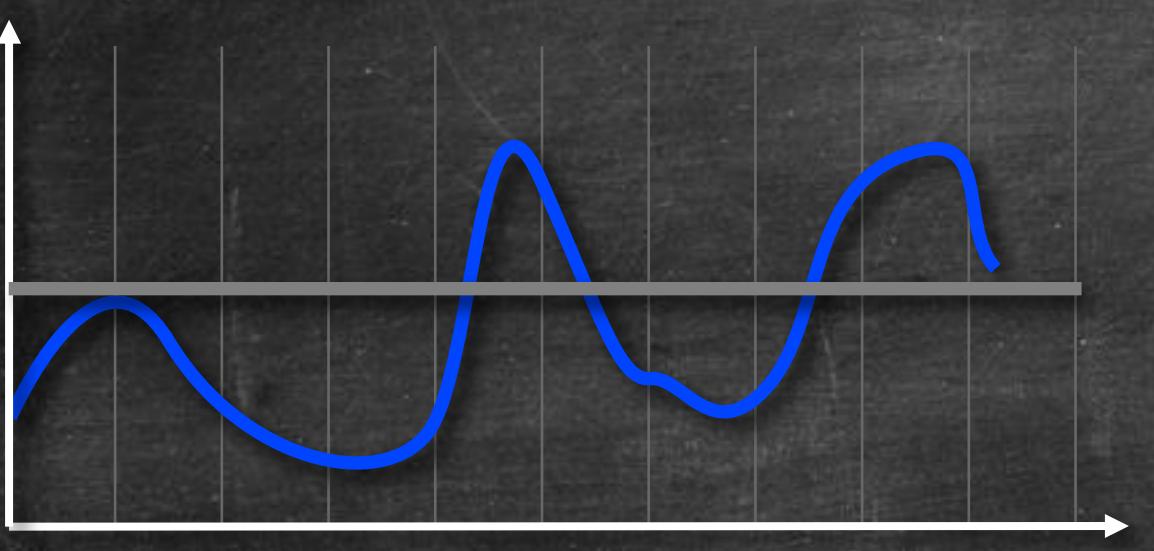
Usage Patterns: Traditional IT



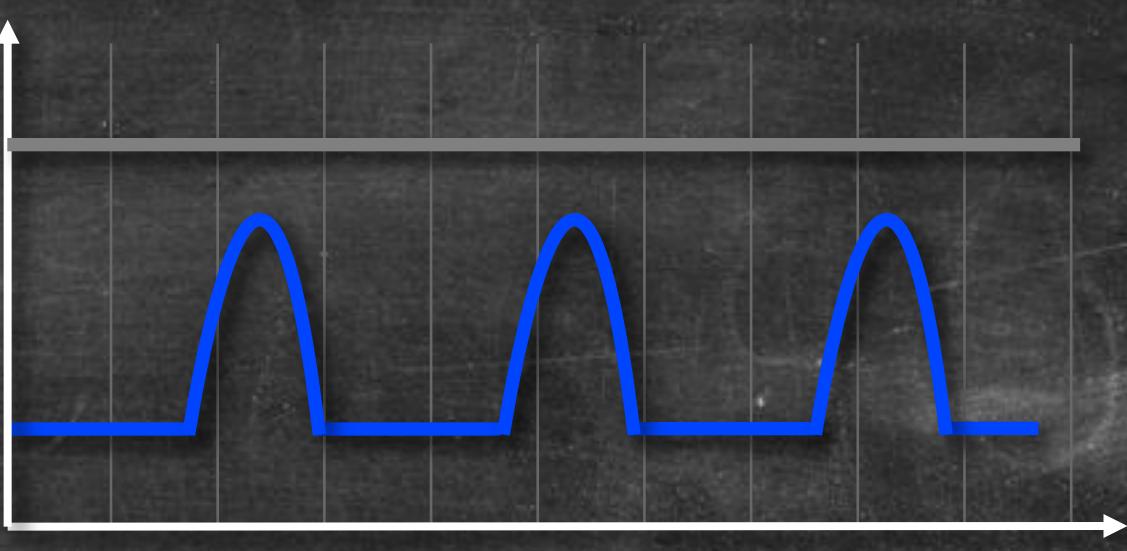
On and Off



Fast Growth

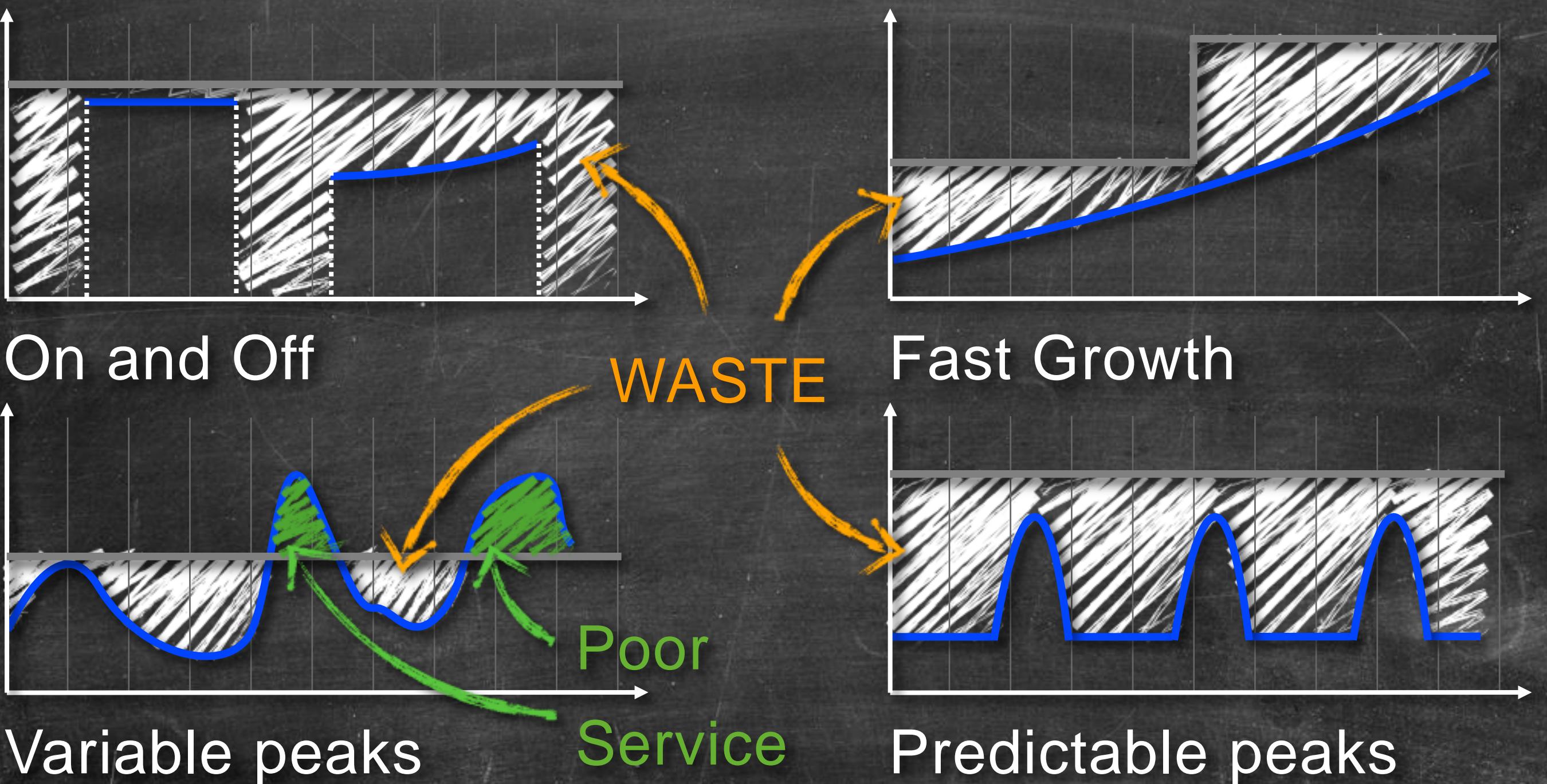


Variable peaks

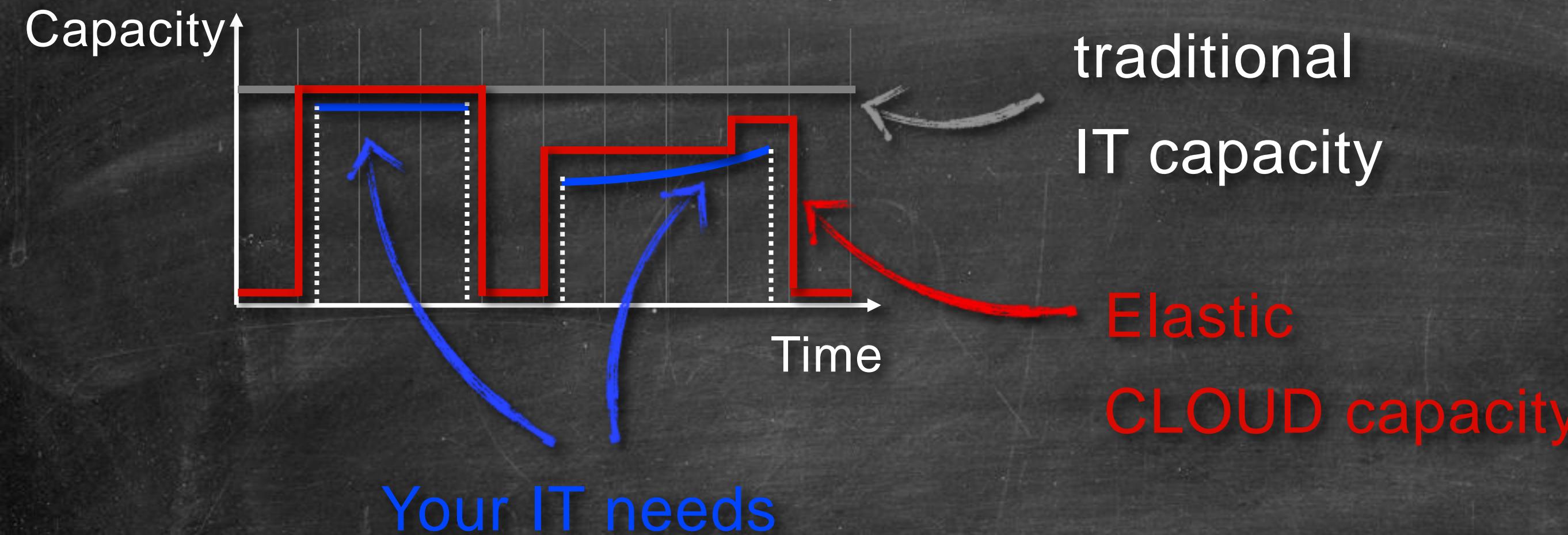


Predictable peaks

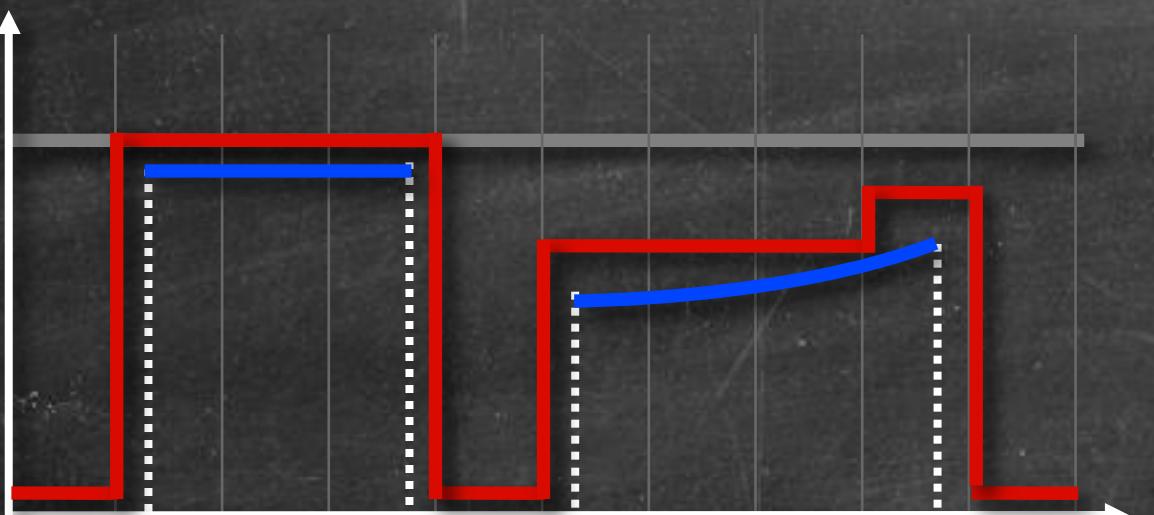
Usage Patterns: Traditional IT



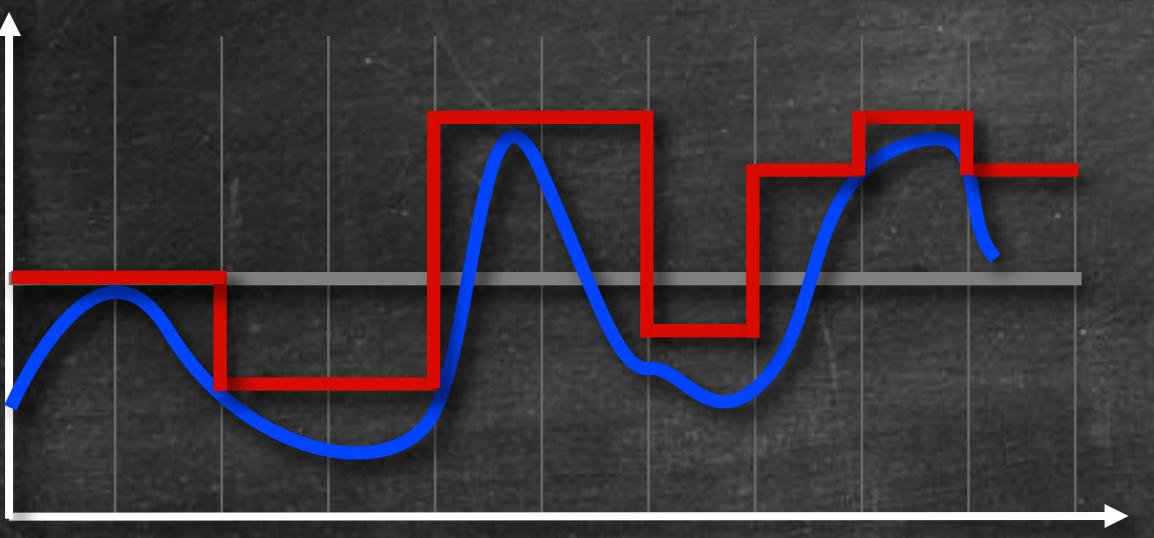
Usage Patterns: Traditional IT



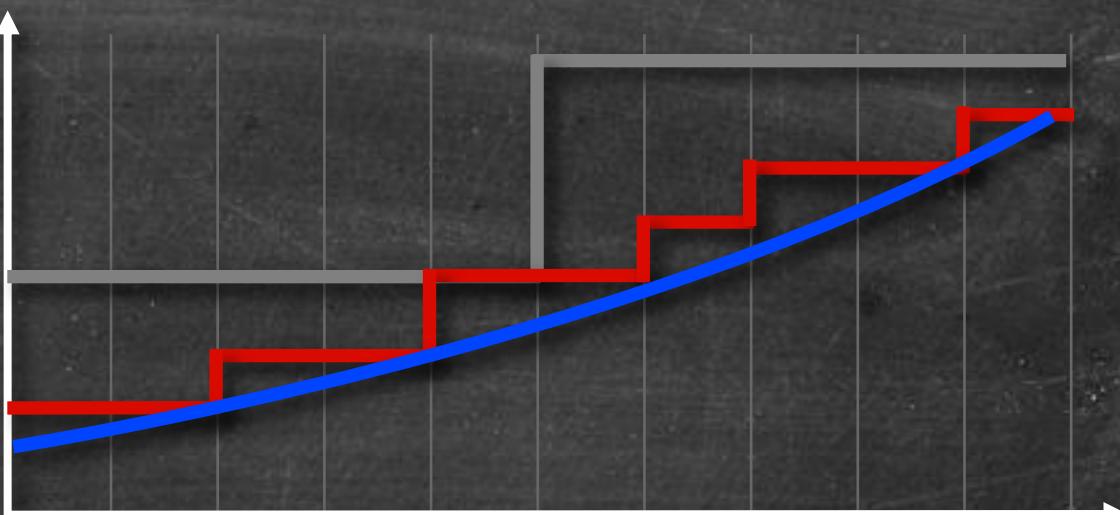
Usage Patterns: Cloud Computing



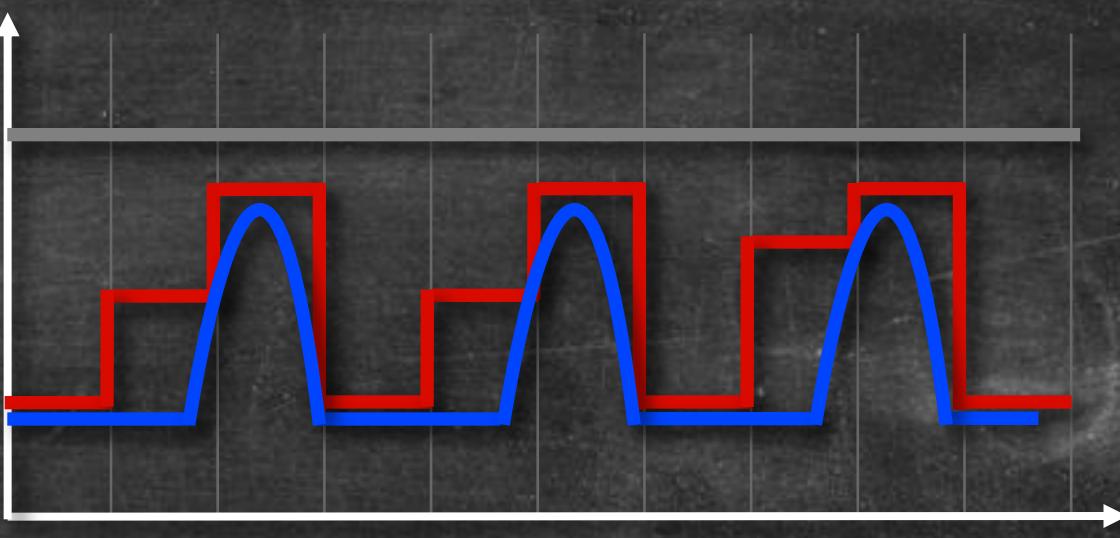
On and Off



Variable peaks



Fast Growth



Predictable peaks

Usage Patterns: Cloud Computing



[2. Quick and easy deployment]

- _ IT Infrastructure is no longer a barrier
- _ Easier to test different solutions
- _ No need to wait for provisioning
- _ Shorter development cycles

[2. Quick and easy deployment]



[3. No CapEx, no initial investment]

- _ No initial investment needed
- _ No termination fees
- _ No commitments
- _ Clear pricing model (on the website)

[3. No CapEx, no initial investment]



[4. Pay as you go, for what you use]

- _ Pay for servers “by the hour” (on-demand)
- _ Pay for storage “per Gigabyte” per month
- _ Pay for data transfer “per Gigabyte”
- _ Easy to turn resources on/off (running costs)

[4. Pay as you go, for what you use]



[5. Automation, reusable components]

- _ Automation, less repetitive tasks (“70/30” rule)
- _ Better management tools
- _ Focus on your business
- _ No need to build from scratch, but instead “reuse”
- _ No need to work on “Undifferentiated Heavy Lifting”

[5. Automation, reusable components]

- 1) Elastic Capacity
- 2) Quick and easy deployment
- 3) No CapEx, No initial investment
- 4) Pay as you go, for what you use
- 5) Automation and Reusable components

Cloud Computing



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2. Amazon Web Services

- _ Reliable, Scalable, Low-Cost Infrastructure
- _ Every service offers APIs
- _ You can use only the components you need
- _ All the important “building blocks” are provided

What is Amazon Web Services?



AWS is a set of infrastructure building blocks

Reference Model

Deployment & Administration

App Services

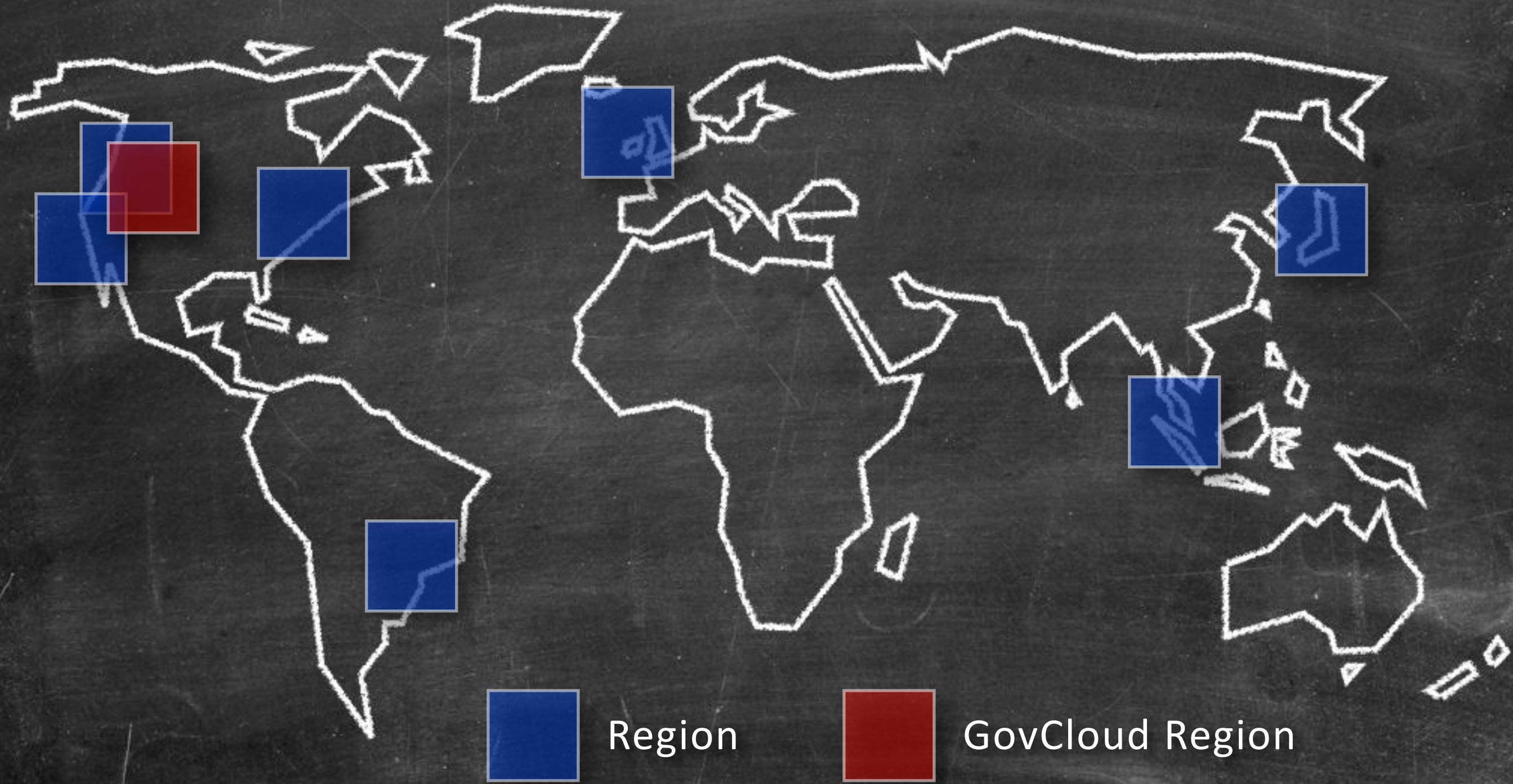
Compute

Storage

Database

Networking

AWS Global Infrastructure



[Global AWS Infrastructure]



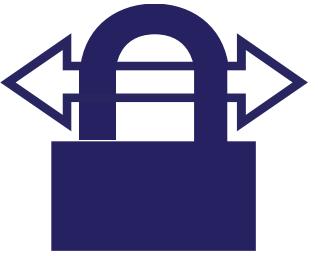
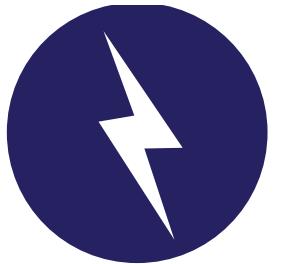
■ Availability Zone

[Global AWS Infrastructure]



Global AWS Infrastructure

Networking



Direct Connect

Dedicated connection to AWS

VPN Connection

Secure internet connection to AWS

Deployment & Administration

App Services

Compute

Storage

Database

Networking

AWS Global Infrastructure

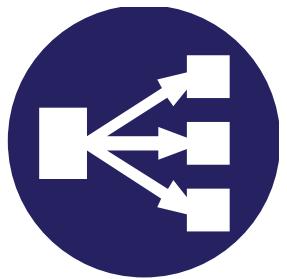
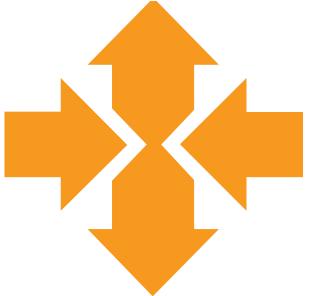
Virtual Private Cloud

Private, isolated section of the AWS Cloud

Route 53

Highly available and scalable Domain Name System

Compute



Deployment & Administration

App Services

Compute

Storage

Database

Networking

AWS Global Infrastructure

Elastic Compute Cloud (EC2)

Basic unit of compute capacity

Range of CPU, memory & local disk options

*14 Instance types available, from micro to cluster
compute*

Security Group

Auto-scaling

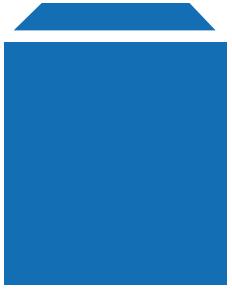
*Automatic re-sizing of compute clusters based upon
demand*

Elastic Load Balancing

Create highly scalable applications

*Distribute load across EC2 instances in multiple
availability zones*

Storage



Glacier

An extremely low-cost storage service that provides secure and durable storage for data archiving and backup

@0.01/GB

S3 - Durable storage, any object

99.99999999% durability of objects

Unlimited storage of objects of any type

Up to 5TB size per object

Elastic Block Store

High performance block storage device

1GB to 1TB in size

Mount as drives to instances

Deployment & Administration

App Services

Compute

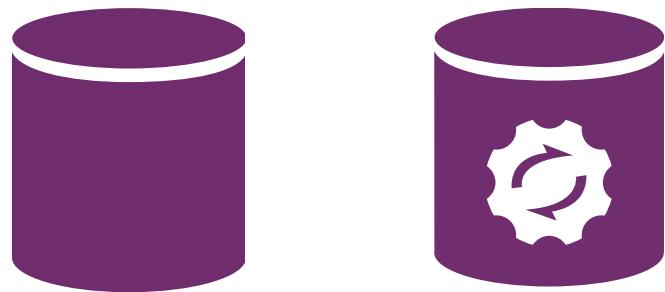
Storage

Database

Networking

AWS Global Infrastructure

Database



Relational Database Service

Database-as-a-Service

No need to install or manage database instances

Scalable and fault tolerant configurations



Deployment & Administration

App Services

Compute

Storage

Database

Networking

AWS Global Infrastructure

DynamoDB

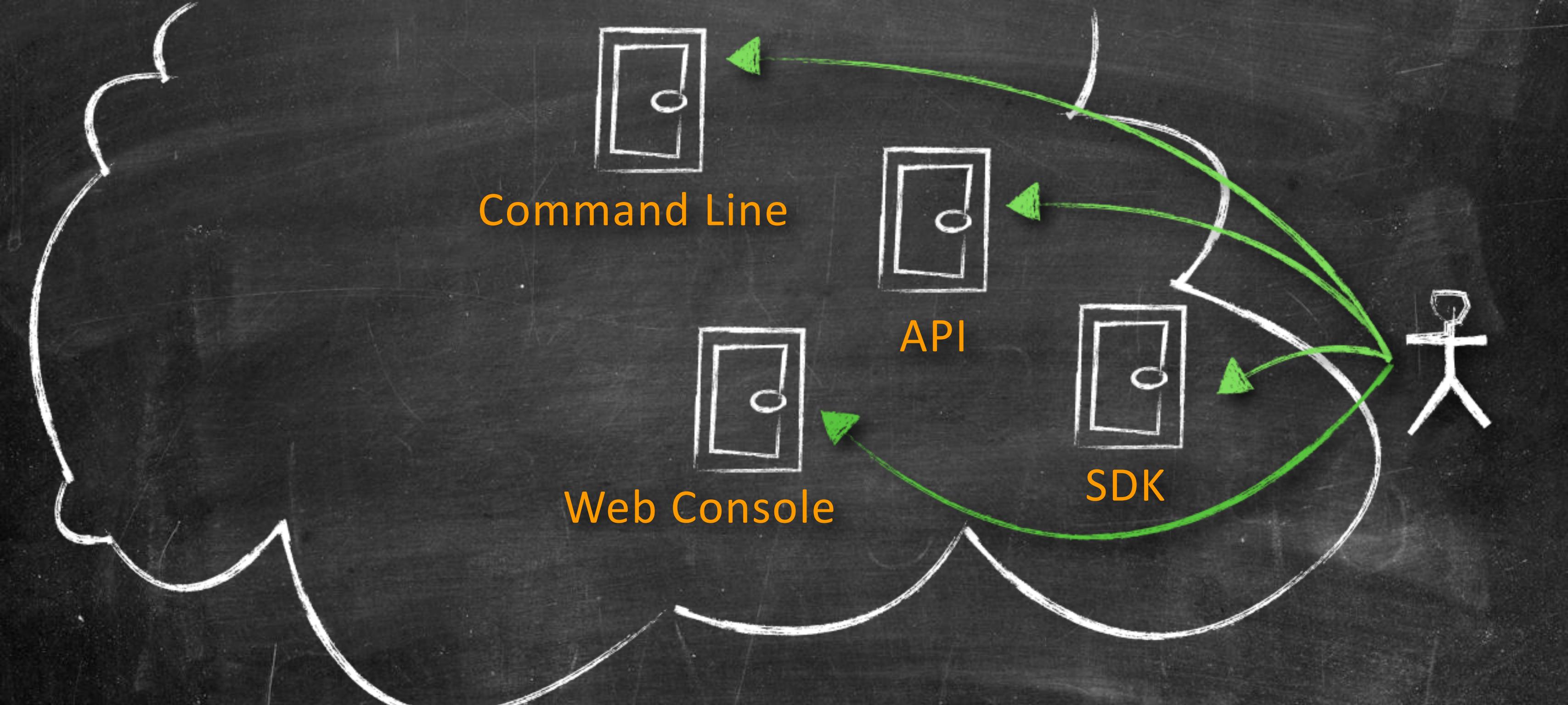
Provisioned throughput NoSQL database

Fast, predictable performance

Fully distributed, fault tolerant architecture

- _ Create an AWS Account
- _ Open the AWS Management Console
- _ Start using the services

Getting started is easy



Command Line

API

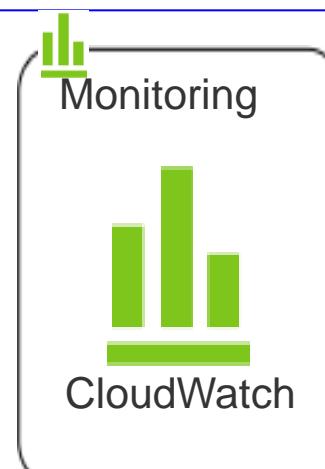
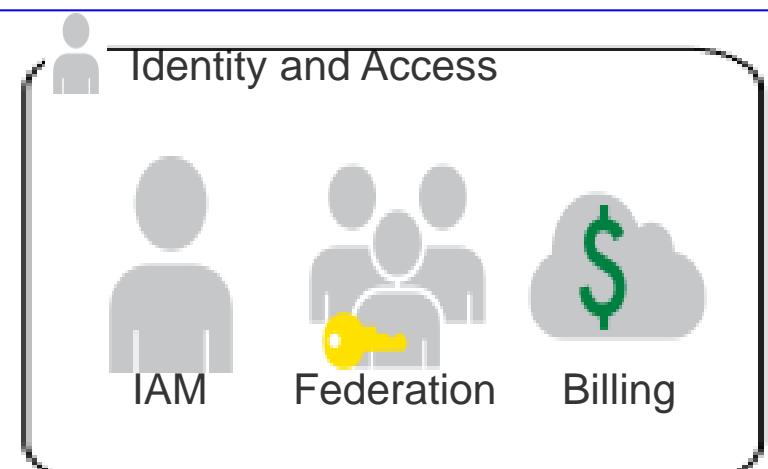
Web Console

SDK

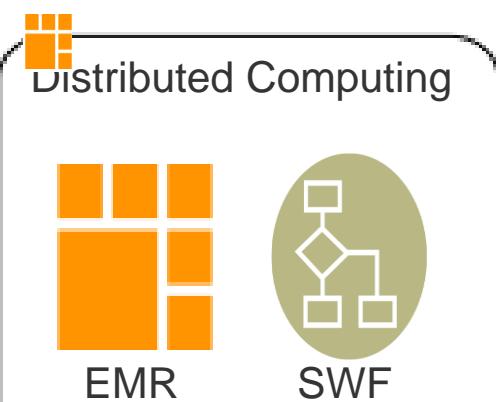
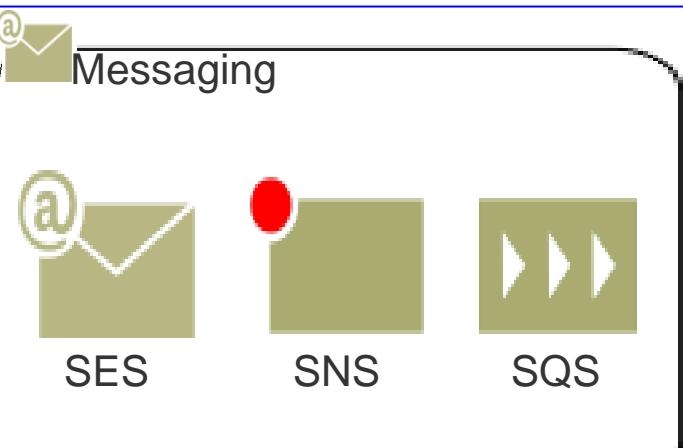
The Amazon Web Services universe

Your Applications

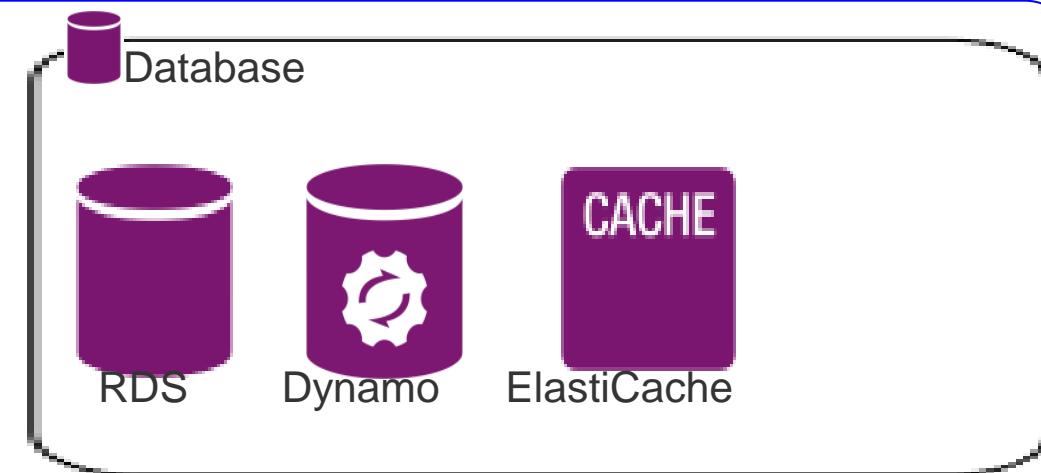
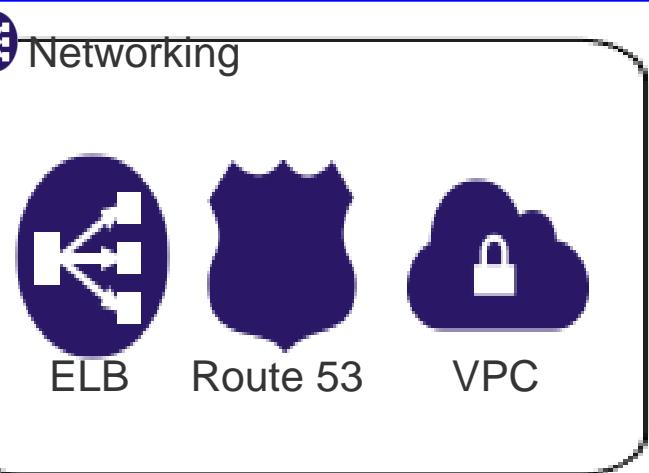
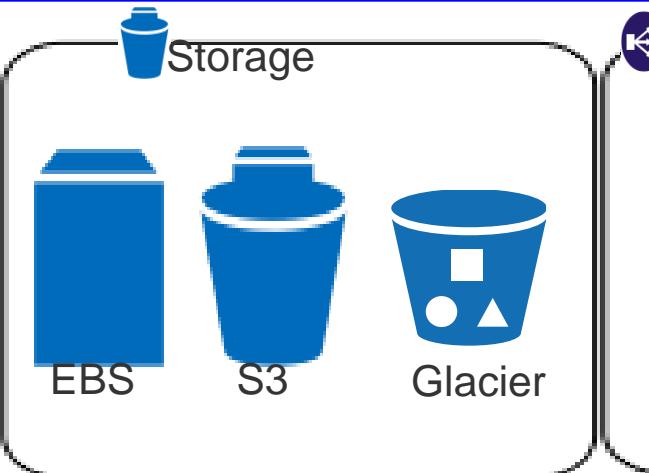
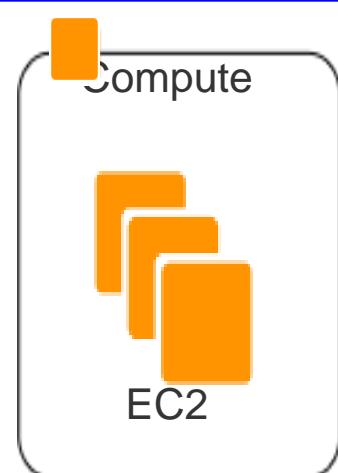
Management & Administration



Application Platform



Foundation



Regions

Availability Zones

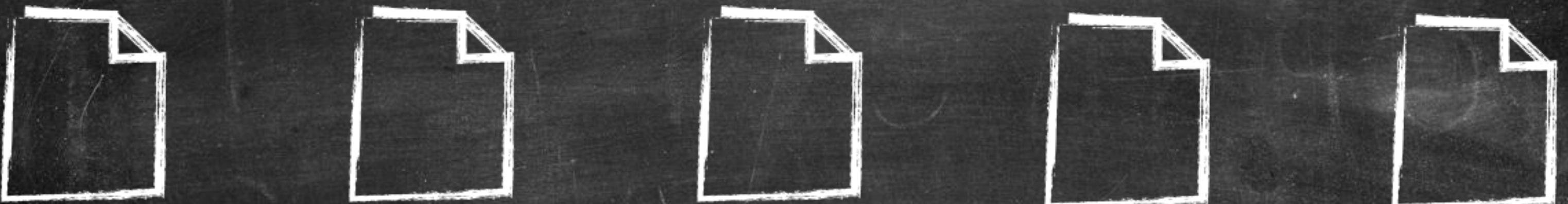
Edge Locations

AWS Global Infrastructure



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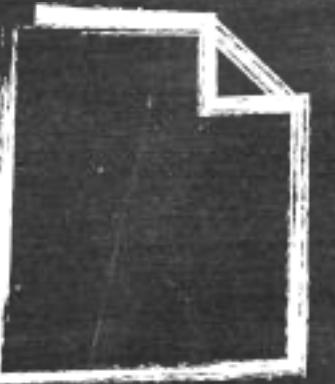
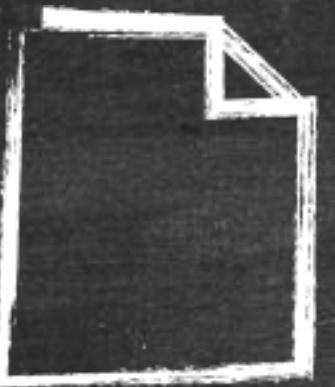




What do customers run on AWS?



SAMSUNG



[Enterprise Applications]

- _ Using AWS since April 2010
- _ Hybrid environment (AWS + traditional IT)
- _ Dev/Test is ready within Amazon VPC
- _ Foundation platforms are AWS-ready



[Shell]

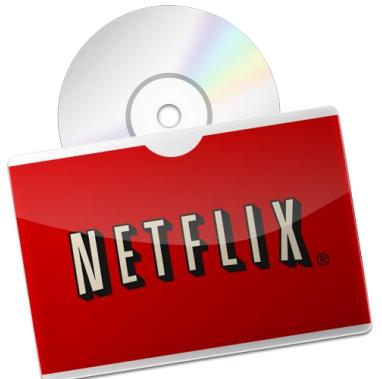


- _ Several services are on AWS
- _ Smart-TV Hubsite: Samsung TV application, is on AWS
- _ Saved CapEx by 34 Million US\$
- _ Reduced OpEx by 85%

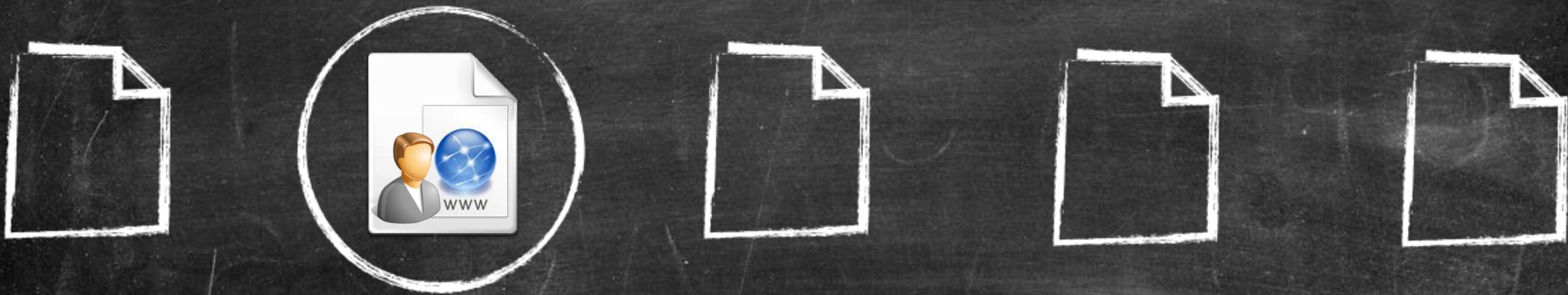


SAMSUNG

[Samsung]



animoto



[Media and Web Applications]

- _ 26 Million subscribers
- _ Netflix is ~25% of US Internet traffic
- _ They are ~100% on AWS

<http://www.slideshare.net/adrianco>

Adrian Cockcroft, Director - Cloud Architecture



[Netflix.com]

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A Year in Review



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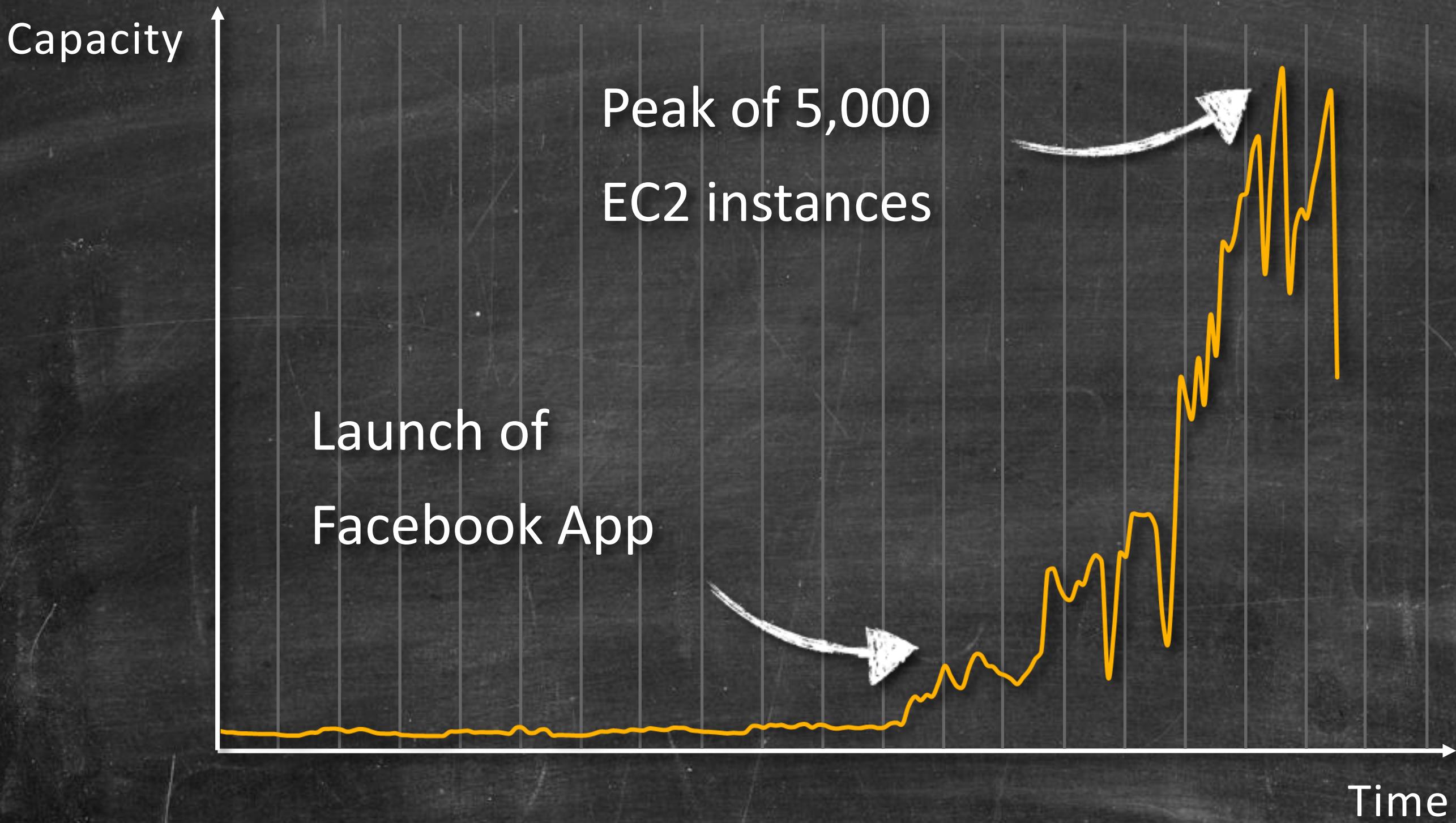
New! Grab photos from Instagram for an insta-ntly awesome video.

[Get started →](#)

- _ Simple way to create videos with your pictures
- _ Facebook App: From 50 to 5,000 servers in 3 days
- _ Later optimization with Cluster GPU Instances (EC2)
- _ Freemium model



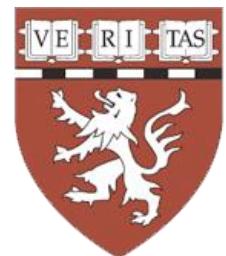
[Animoto.com]



[Animoto.com]



razorfish™



HARVARD
MEDICAL SCHOOL



Big Data, HPC, Analytics

- _ Processing of Cassini probe images (200,000+)
- _ All-Terrain Hex-Limbed Extra-Terrestrial Explorer robot
- _ Live broadcast of Mars rover Curiosity
- _ Many other systems on AWS

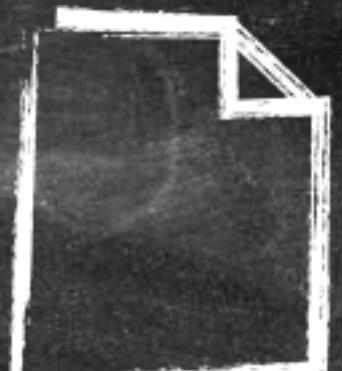
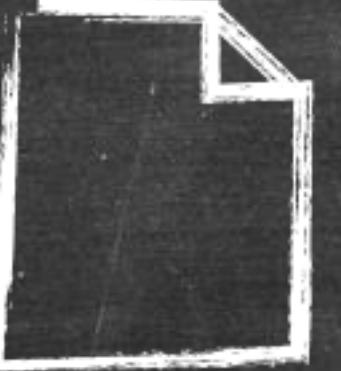
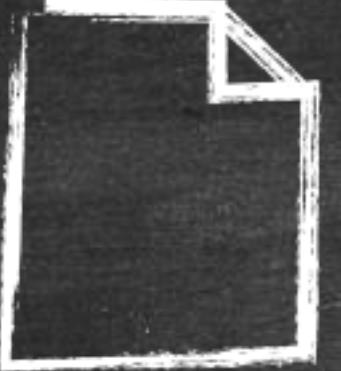


[NASA JPL]

HITACHI

NASDAQ®

SmugMug ö



[Archive, Disaster Recovery]

- _ Replay and analysis of the activity in the stock market
- _ Interface built with Adobe FLEX + AIR
- _ The Infrastructure is purely Amazon S3

NASDAQ

[Nasdaq]

NASDAQ

QQQQ on 01/22/2008 @ 09:40:22.010

Request New Replay

Symbol **QQQQ**

Date **01/28/2008**

Time **12:00:00.000**

Timespan

Run



Replays

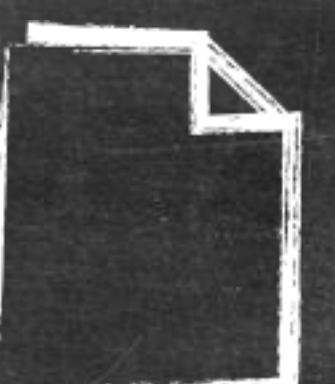
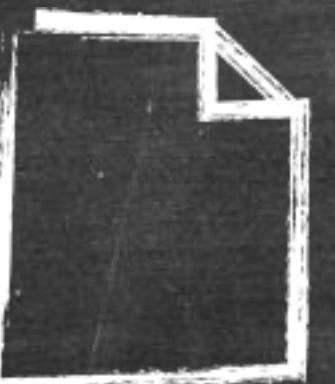
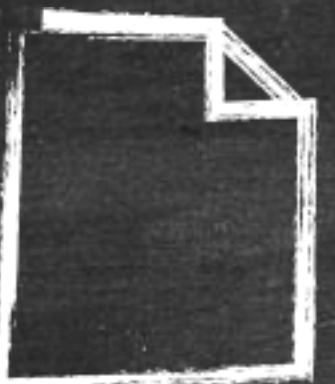
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QQQQ	01/10/2008	10:00:00.000
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NDAQ	01/22/2008	09:30:00.000
QQQQ	01/22/2008	09:30:00.000
NDAQ	01/22/2008	12:00:00.000
NDAQ	01/22/2008	12:00:00.000
NDAQ	01/22/2008	15:50:00.000
QQQQ	01/22/2008	15:50:00.000
NDAQ	01/23/2008	10:00:01.030
QQQQ	01/23/2008	09:40:00.000
QQQQ	01/22/2008	09:31:00.000
QQQQ	01/22/2008	09:40:00.000
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NBBO	Best Bid		Best Ask		Timespan Analysis			
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ARCX	4900	43.54	43.54	6800	NSDQ	NBBO	43.07	43.87
NSDQ	15000	43.53	43.55	21600	CINN	ADFN	43.04	43.86
CINN	12000	43.53	43.56	7900	ARCX	AMEX	1.00	43.74
ADFN	4000	43.51	43.56	6000	ADFN	ARCX	43.06	43.87
AMEX	5000	43.32	43.78	5000	AMEX	CBOE	34.39	51.77
CBOE	200	34.84	52.21	200	CBOE	CINN	43.06	49.00
					NSDQ		43.07	43.88

Send **Screenshot** **Delete**

← 09:40:22.010 →

◀ □ ▶



Mobile and games

- _ Based in Beijing
- _ Among the top 7 game developers on Facebook
- _ 3 Million daily active users globally



[FunPlus Game]

“With our social game growing from 1 million to 3 million in 3 months, we can spin out more than 300 servers quickly, only managed by ONE engineer.”

Chen Qi, COO, Fun+ Game



[FunPlus Game]

“Before using the Amazon AWS, we need at least 7-10 days to deploy our program applications overseas. And now, we deploy program applications and can provide service in as quickly as 30 minutes.”

Project Manager, Larry Yue, NQ Mobile

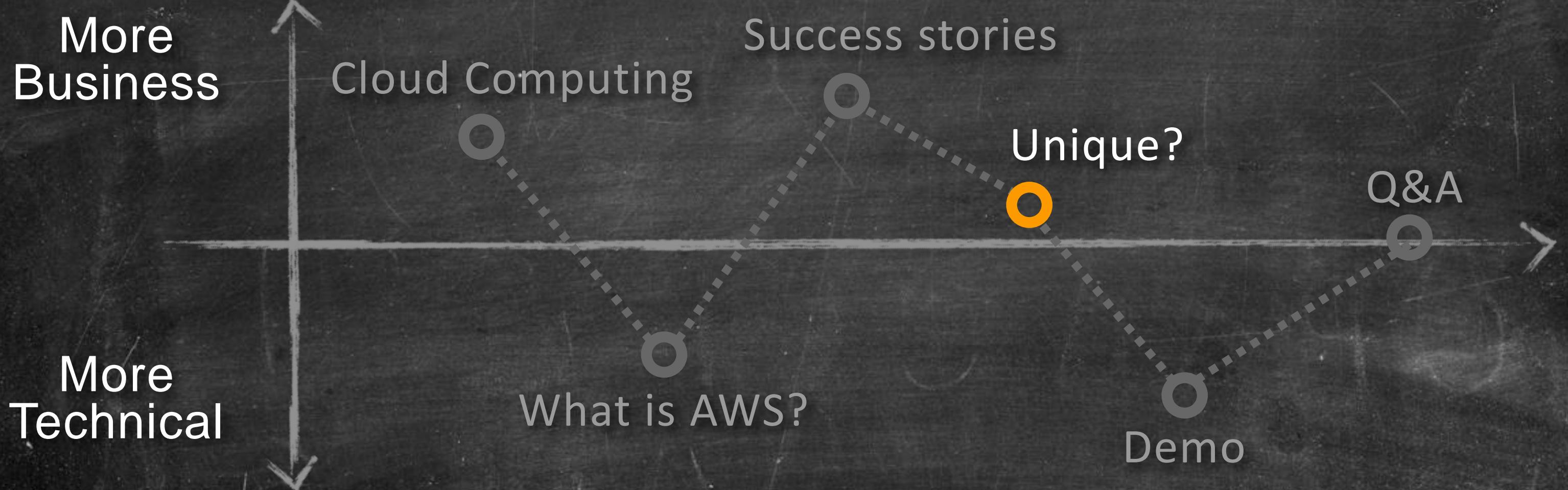


**NQ Mobile
(Beijing)**





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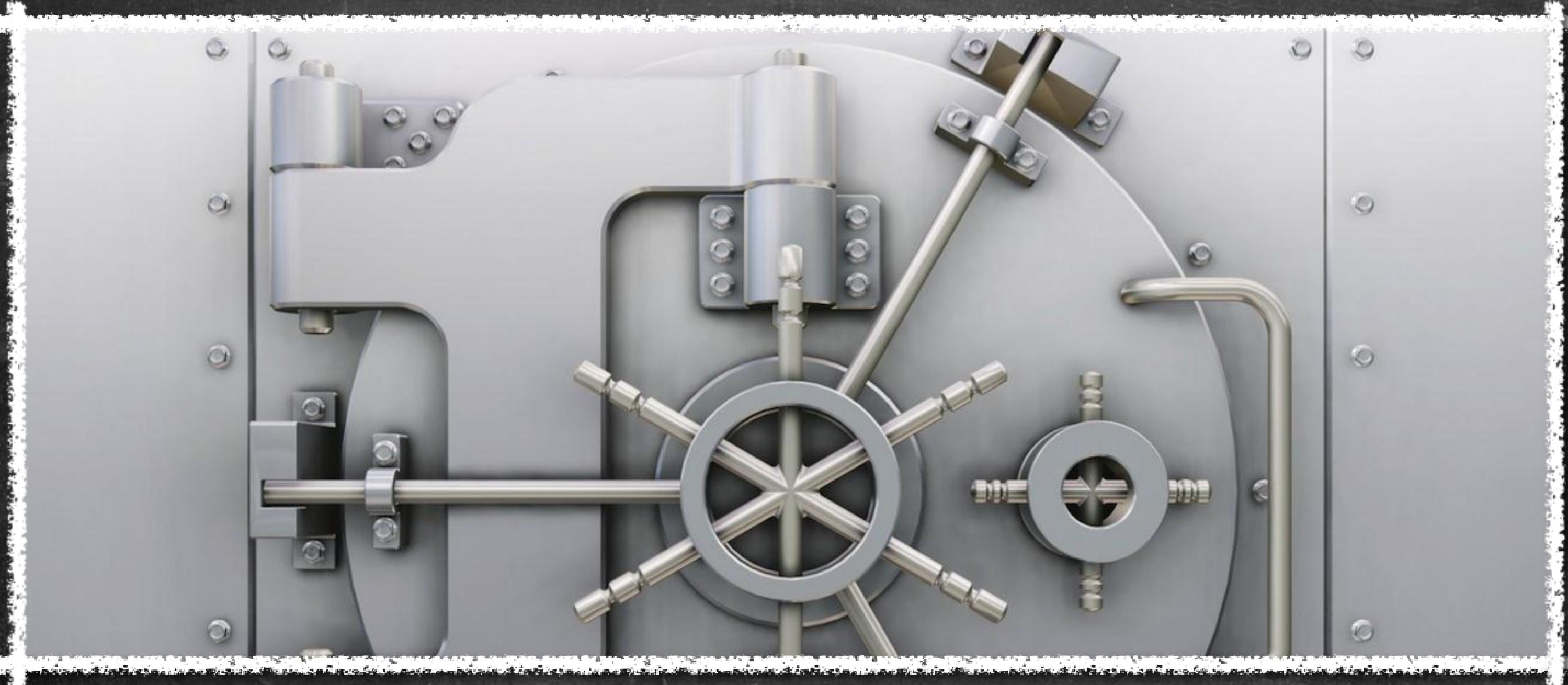
4. What's unique about AWS?



Flexibility, Freedom of choice

- _ Multiple Operating Systems (Linux, Windows...)
- _ Multiple Software Platforms (SAP, IBM...)
- _ Multiple Databases (Oracle, MS SQL, MySQL...)
- _ Many licensing options

Flexibility, Freedom of choice



[Security]

- _ “Security is our number one priority”
- _ Many Security certifications (ISO 27001, PCI-DSS-1, etc)
- _ Data privacy through encryption
- _ <http://aws.amazon.com/security>
- _ White Papers: Security Processes, Risk and Compliance

[Security]



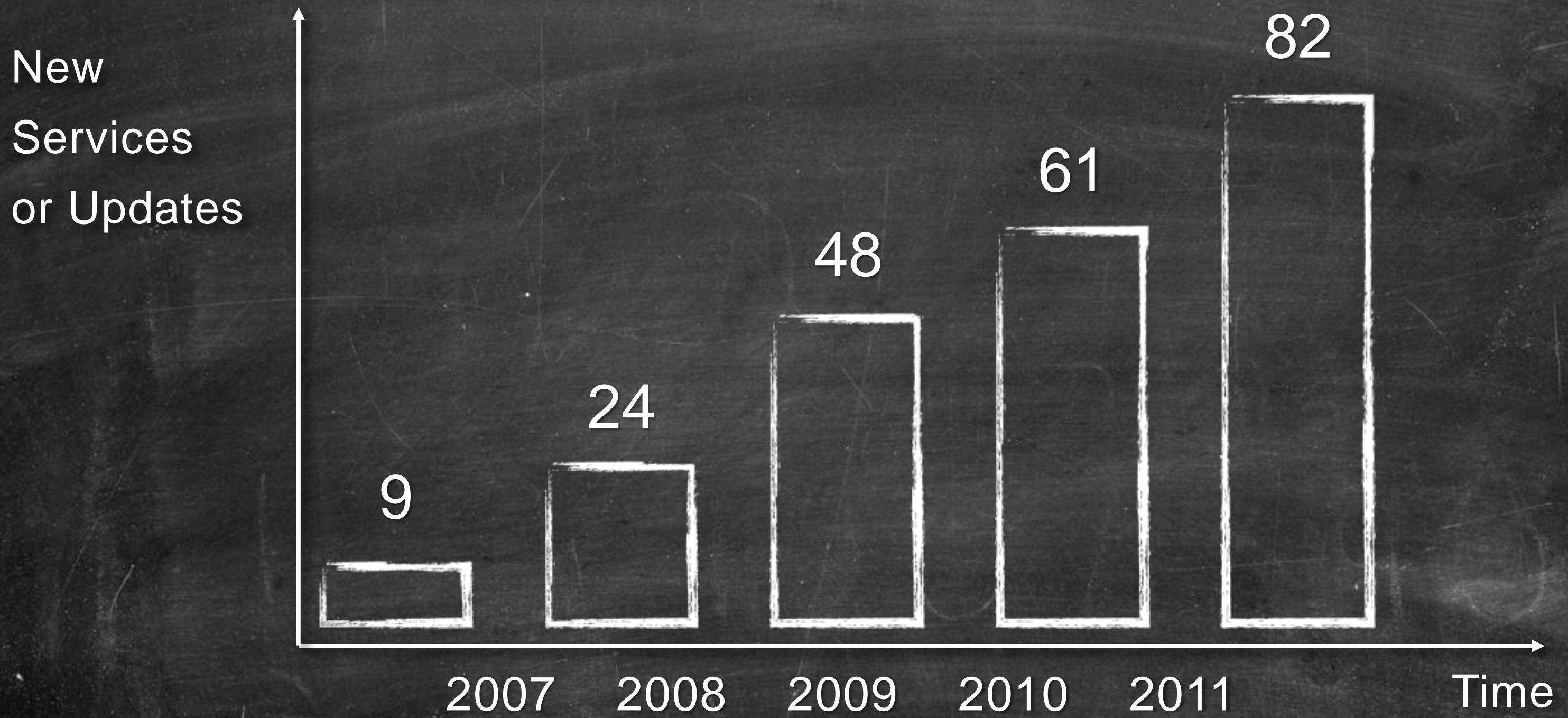
[Support]

- _ Free support (Forum, email...)
- _ Premium support: Developer, Business, Enterprise
- _ Service Health Dashboard
- _ Health Status for AWS components (EC2, EBS...)

[Support]



Pace of innovation



Pace of innovation



[Global Partner Ecosystem]



Infosys®

Mahindra Satyam

Dedalus
simplificando a tecnologia

Cloud Concept

razorfish.



Capgemini
CONSULTING TECHNOLOGY OUTSOURCING

m model
metrics

Blue Gecko®

bluwolf™

Hitachi Solutions

Deloitte.

lifeline

CTE
CAMBRIDGE
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THE CONTENT EXPERTS

bmcsoftware

DS
DASSAULT
SYSTEMES

TIBCO®
The Power of Now®

CYCLE COMPUTING

MicroStrategy

PROGRESS
SOFTWARE

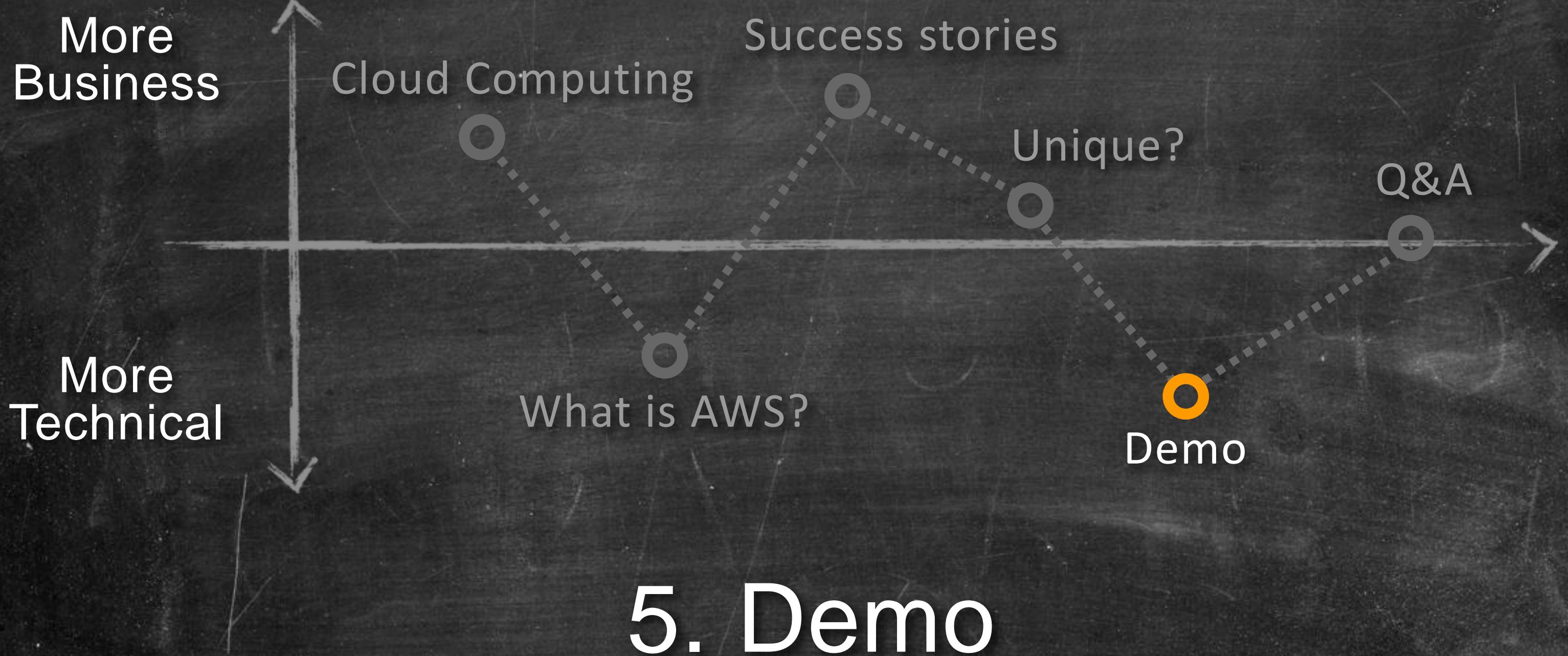
ESRI®

RIGHT SCALE

Global Partner Ecosystem



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Thank you