



South Africa



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Innovation

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# Michael Needham

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# AWS's cloud adoption framework



Figure 1: The AWS CAF Perspectives

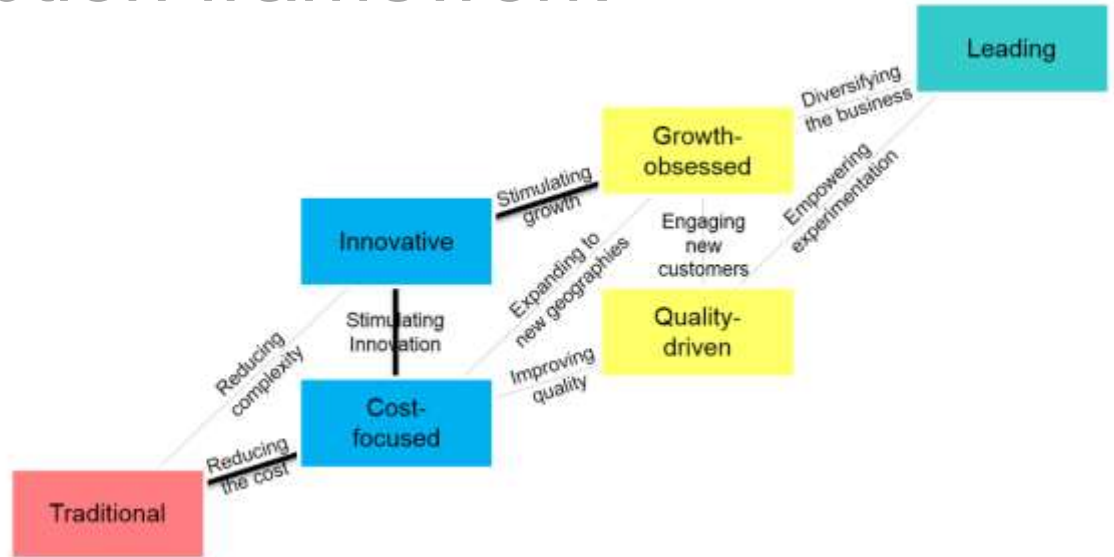


Figure 3: Mapping the Journey to the Cloud

Whitepaper

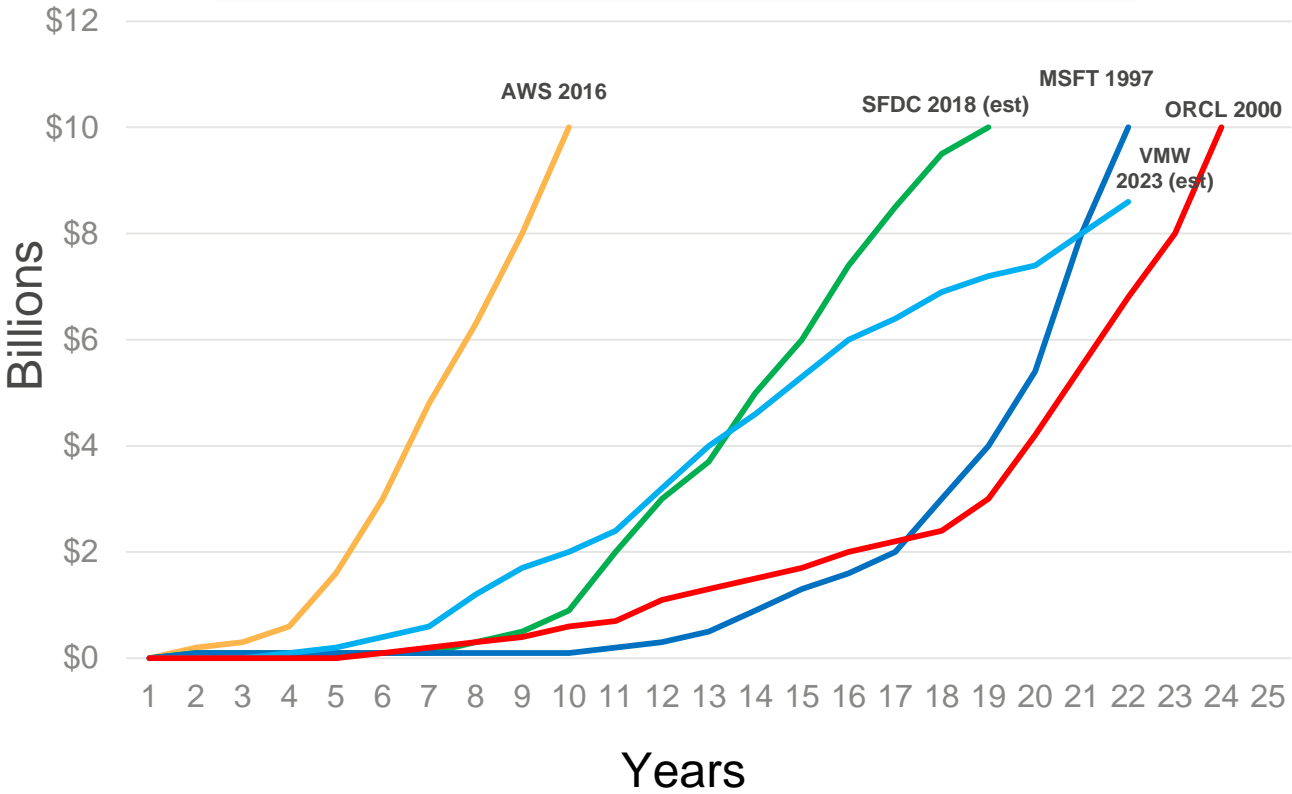
<http://bit.ly/aws-caf-wp>

# No Gatekeepers

Innovation at scale at Amazon.com

# AWS's Growth Trajectory

Yrs. to \$10B in Revenue - Fastest Growing Tech Firms in History



...has enabled the current tech boom. The only technology which might come close is the smartphone.  
The Atlantic – April '15

...arguably the greatest disruptive force in entire enterprise technology.  
Silicon Angle – Nov '15

AWS has more than 10X the computing capacity than the next 14 clouds combined.  
Fortune – May '15

# Right Now...

...a **top 10 bank** in the US is planning to own or lease no data centers by 2018.

...AirBnb is hosting **450 000 people** without owning a hotel

...and runs a **5 man operations team** across 1300 servers

...US regulator, FINRA, is loading today's **35 billion market events** into **Amazon S3** to run surveillance on the US capital markets tonight.

...**A telematics company** in Stellenbosch is tracking vehicles in 40 countries

...FCA UK moves all in to AWS, **first bank in UK all-in with core systems of record**

# AWS Sector Example – The Choice for Innovative FinTech Startups

# 100%

Percentage of the Inaugural Forbes FinTech 50 that use AWS



*“Banks aren’t being disrupted by FinTech technology, they’re being disrupted by customer expectations.”*

- McKinsey & Company



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- Robert's Love: The Novel by Christopher J. Phillips
- Delia's Big Purple Hat by Deborah M. Stambury

The Page You Made:
 

- The Fat of the Land: The Prequel by Crystal Methen
- His Year: Chris Hale - Chemical Brothers

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**2ii** items available for Prime shipping code

**Infinite** items available for Prime shipping code

**23** items available for Prime shipping code

**800,000** items available for Prime shipping code

**HAPPY BIRTHDAY!**  
**Prime**  
**10 YEARS**  
KIND OF MILLENNIUM OF MEMBERS

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**Prime Fresh One Select**

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**Easy**

**Connect**

**Just**

**Ask**

**NEW**

**rest**

**NEW**

**Echo**

**what**

**NEW**

**what**

**NEW**

**order**

**NEW – Smart home:** Control compatible WeMo, Philips Hue, SmartThings, Insteon, and Wink devices with your voice.

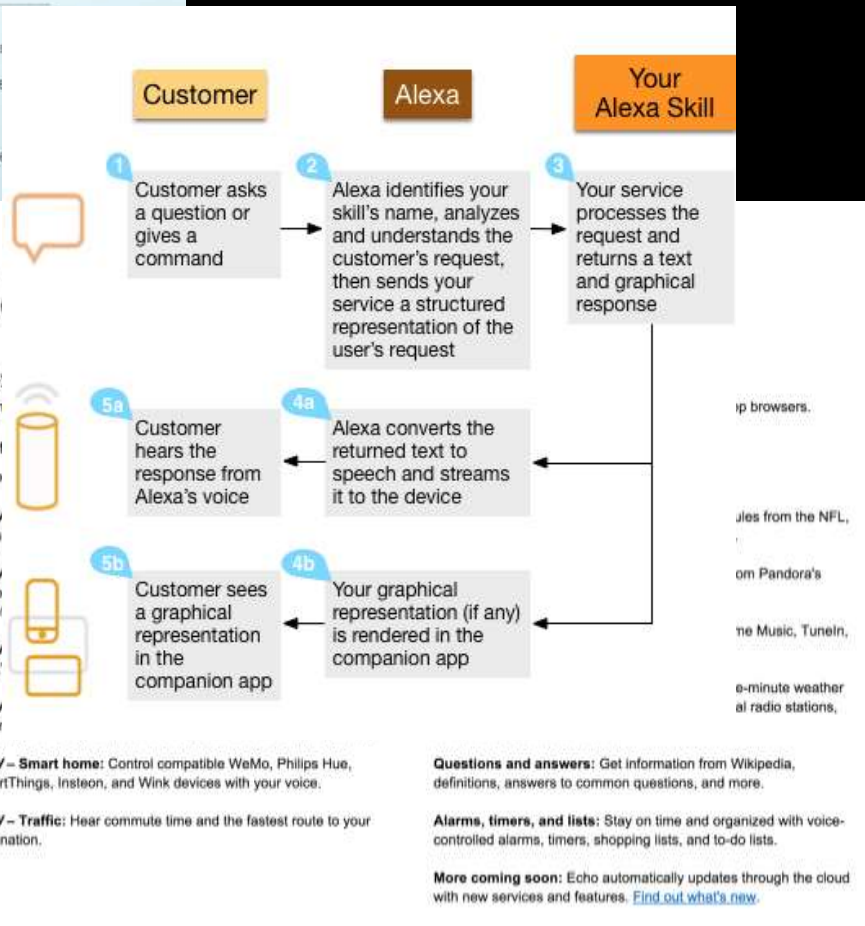
**NEW – Traffic:** Hear commute time and the fastest route to your destination.



**Developers, Meet Alexa**

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## INTRODUCING DASH REPLENISHMENT SERVICE

Dash Replenishment Service (DRS) enables connected devices to order physical goods from Amazon when supplies are running low—like a coffee maker that orders more coffee beans. By using DRS, device makers are able to leverage Amazon's authentication and payment systems, customer service, and fulfillment network—giving their customers access to Amazon's low prices, great selection, and reliable delivery.

**Interested in working with Dash Replenishment Service?**

# 1997

amazon.com

To our shareholders:

Amazon.com passed many milestones in 1997: by year-end, we had served more than 1.5 million customers, yielding 838% revenue growth to \$147.8 million, and extended our market leadership despite aggressive competitive entry.

But this is Day 1 for the Internet and, if we execute well, for Amazon.com. Today, online commerce saves customers money and precious time. Tomorrow, through personalization, online commerce will accelerate the very process of discovery. Amazon.com uses the Internet to create real value for its customers and, by doing so, hopes to create an enduring franchise, even in established and large markets.

We have a window of opportunity as larger players marshal the resources to pursue the online opportunity and as customers, new to purchasing online, are receptive to forming new relationships. The competitive landscape has continued to evolve at a fast pace. Many large players have moved online with credible offerings and have devoted substantial energy and resources to building awareness, traffic, and sales. Our goal is to move quickly to solidify and extend our current position while we begin to pursue the online commerce opportunities in other areas. We see substantial opportunity in the large markets we are targeting. This strategy is not without risk: it requires serious investment and crisp execution against established franchise leaders.

*It's All About the Long Term*

We believe that a fundamental measure of our success will be the shareholder value we create over the *long term*. This value will be a direct result of our ability to extend and solidify our current market leadership position. The stronger our market leadership, the more powerful our economic model. Market leadership can translate directly to higher revenue, higher profitability, greater capital velocity, and correspondingly stronger returns on invested capital.

Our decisions have consistently reflected this focus. We first measure ourselves in terms of the metrics most indicative of our market leadership: customer and revenue growth, the degree to which our customers continue to purchase from us on a repeat basis, and the strength of our brand. We have invested and will continue to invest aggressively to expand and leverage our customer base, brand, and infrastructure as we move to establish an enduring franchise.

- We will continue to make investment decisions in light of long-term market leadership considerations rather than short-term profitability considerations or short-term Wall Street reactions.



# Amazon Polly

Turn text into lifelike speech using deep learning

“We will make **bold rather than timid investment decisions**, where we see a sufficient probability of gaining market leadership advantages. Some of these investments will pay off, others will not, and we will have **learned another valuable lesson in either case.**”

**EXPERIMENT**  
**CONTINUOUSLY**

**MEASURE**  
**RELENTLESSLY**

**Innovation** needs  
to be part of your DNA



**Earth's**  
**most customer-centric**  
**company**

Focus on Customers gives  
**DIRECTION** to our Innovations

**Innovation requires commitment**

**Stubborn** on the vision  
but **flexible** on the details



# Amazon Rekognition

Deep learning-based image recognition

Search, verify, and organize millions of images

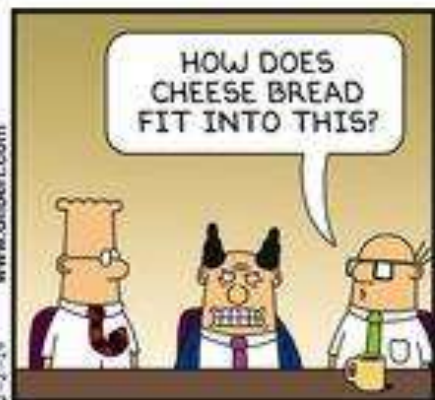
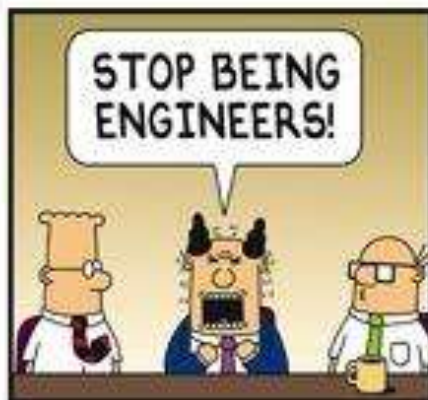
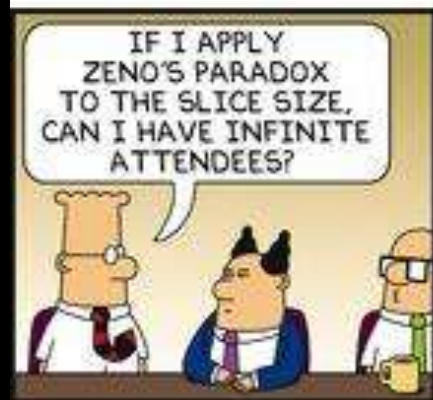


**Willingness to be misunderstood  
for long periods of time**

Culture + Organization + Technology

# The Importance of **Small Teams**





# Amazon Leadership Principles

- Customer Obsession
- Ownership
- Invent and Simplify
- Are Right, A Lot
- Hire and Develop the Best
- Insist on the Highest Standards
- Think Big

# Amazon Leadership Principles

- Bias for Action
- Frugality
- Vocally Self Critical
- Earn Trust of Others
- Dive Deep
- Have Backbone; Disagree and Commit
- Deliver Results



**The Institutional YES!**

# The Narrative



**Read 6 pages in silence  
for 30 minutes**

**Working from  
the Customer  
backwards**

Working from **the Customer** backwards

**1. Write the Press Release**

Working from **the Customer** backwards

**2. Write the FAQ**

**2a. And the Rude FAQ**

Working from **the Customer** backwards

**3. Define the User Interaction**

Working from **the Customer** backwards

### 3. Write a **User Manual**

- *Concepts*
- *How-to*
- *Reference*



**Reduce the cost of Failure**

The most radical and transformative of inventions are often those that empower *others* to unleash *their* creativity – to pursue *their* dreams.

...

we are creating powerful self-service platforms that allow thousands of people to boldly experiment and accomplish things that would otherwise be impossible or impractical.

**Self-service platforms  
without gatekeepers**

Culture + Organisation + Technology



THE TECHNOLOGY  
PLATFORM OF CHOICE

May 25, 2016: **Salesforce** Selects **AWS** as Preferred Cloud Provider

*“There is no public cloud infrastructure provider that has more robust enterprise capabilities.”*

- Marc Benioff, Chairman & CEO, Salesforce

November 2015: **General Electric** AWS re:Invent Keynote Address

*“AWS is our trusted partner who’s going to run our company for the next 140 years. For us this is no longer an experiment, this is no longer a test...it’s inevitable.”*

- Jim Fowler, CIO, General Electric

September 2016: SAP - BW/4HANA global press announcement

*“...it’s not only what the [SAP] development folks did but it’s also a partner like Amazon who actually came forward and provided a 14 TB [Hana] system. The time it takes to provision that system is unbelievable. It’s amazing and really helps us to deliver simplicity ... We’ve got some big ideas and we’re going to go big with this company”*

- Rob Enslin, President of Global Operations. SAP



# What Sets **AWS** Apart



Experience

Building and managing cloud infrastructure since 2006

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Service breadth & depth

90+ services to support any workload

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Pace of innovation

History of rapid, customer-driven releases

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Global footprint

16 regions, 42 availability zones, 59 edge locations

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Pricing philosophy

59+ proactive price reductions to date

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Ecosystem

Thousands of partners; 2,700+ Marketplace products

# Our Global Footprint

Everyday, AWS adds enough new server capacity to support Amazon.com when it was a \$7 billion global enterprise.

16 Regions

(France and China 2<sup>nd</sup> region coming soon)

42 Availability zones

68 Edge locations

Over 1 million active customers across 190 countries

2300+ Government Agencies

7000+ Educational Institutions

1,000+ Financial Services Organizations



# Depth And Breadth of the Platform and Tools

## Enterprise Applications



Virtual Desktops



Sharing & Collaboration

## Platform Services

### Analytics



Hadoop



Real-time Streaming Data



Data warehouse



Data Pipelines

### App Services



Queuing & Notifications



Workflow



App streaming



Transcoding



Email



Search

### Deployment & Management



One-click web app deployment



Dev/ops resource management



Resource Templates



Code Deploy



Code Pipeline



Code Commit

### Mobile Services



Identity



Sync



Mobile Analytics



Push Notifications

## Administration & Security



Identity Management



Access Control



Usage & Resource Tracking



Service Catalog



Key Storage & Management



Monitoring and Logs

## Core Services



Compute (VMs, Auto-scaling and Load Balancing)



Storage (Object, Block and Archival)



CDN



Databases (Relational, NoSQL, Caching)



Networking (VPC, DX, DNS)

## Infrastructure



Regions

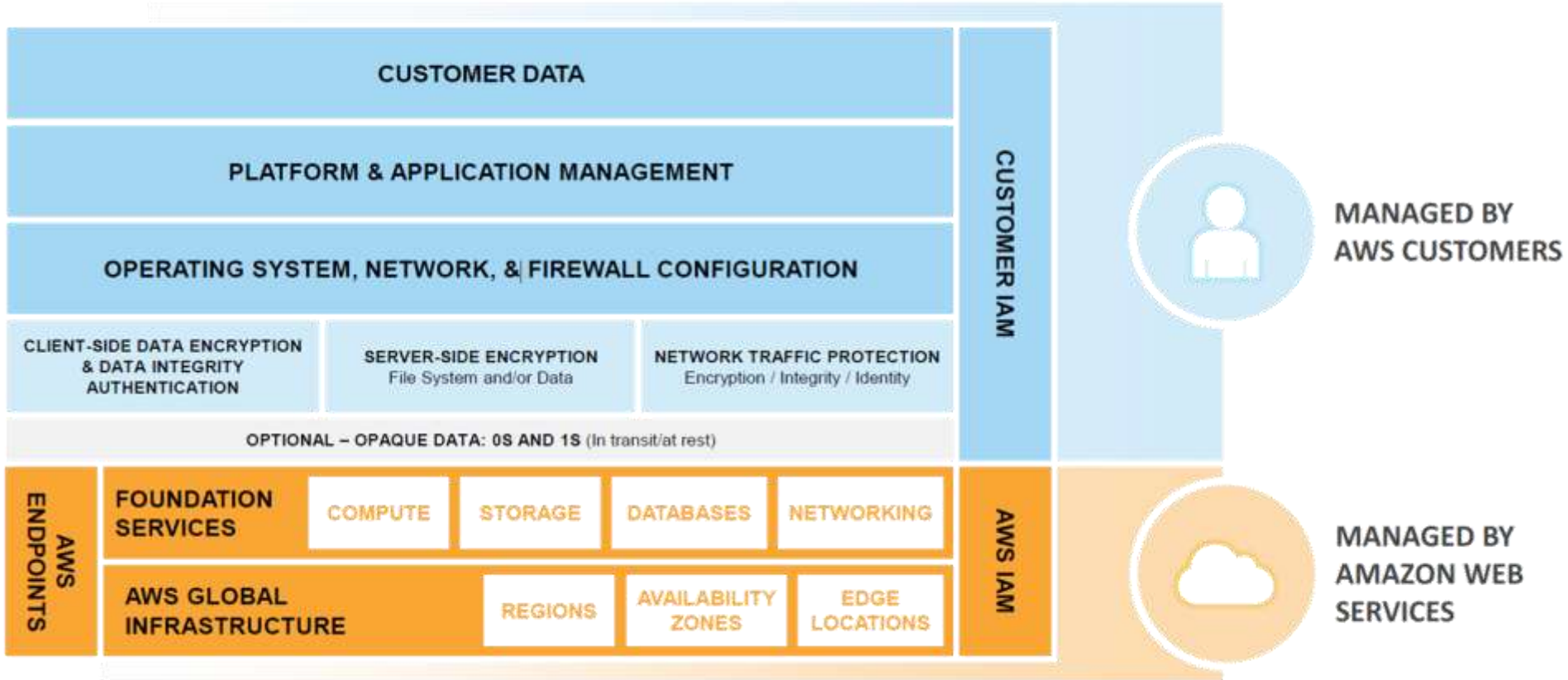


Availability Zones

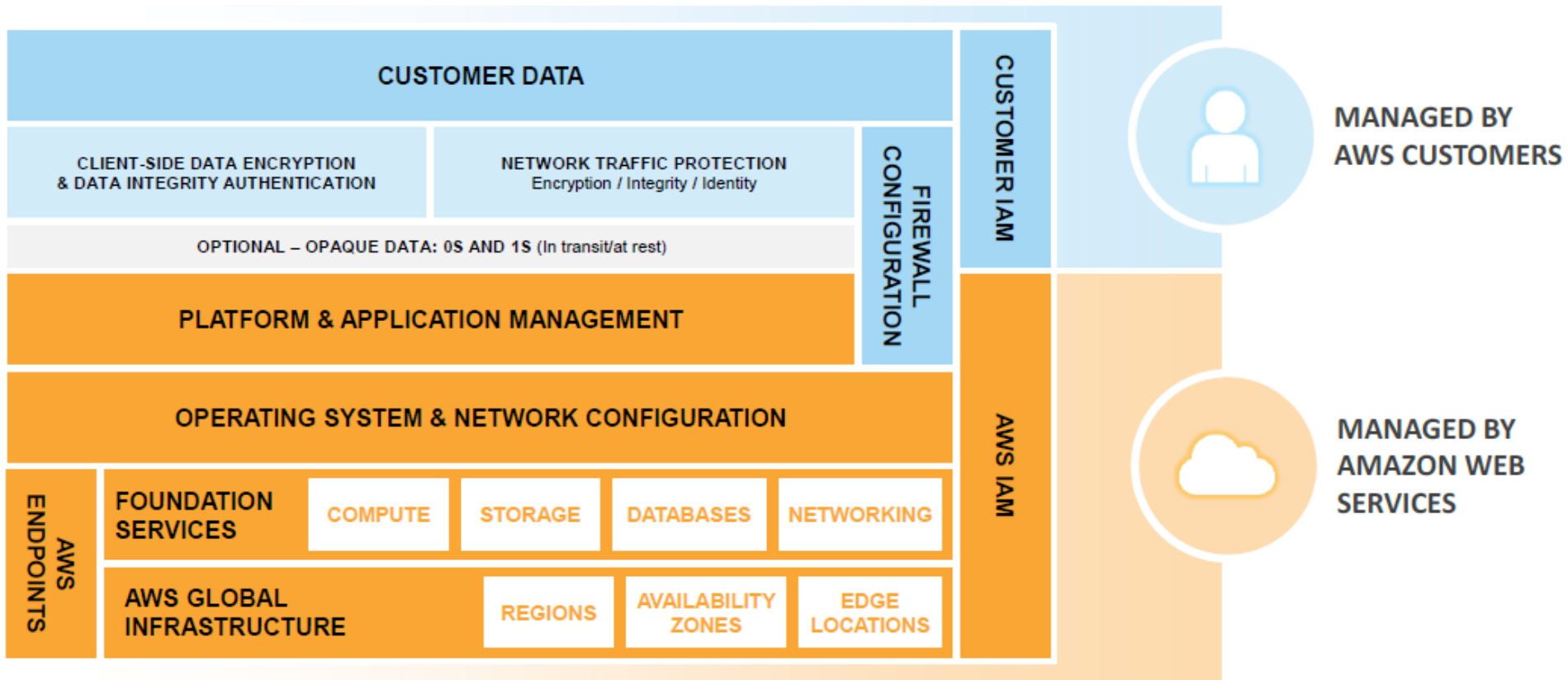


Points of Presence

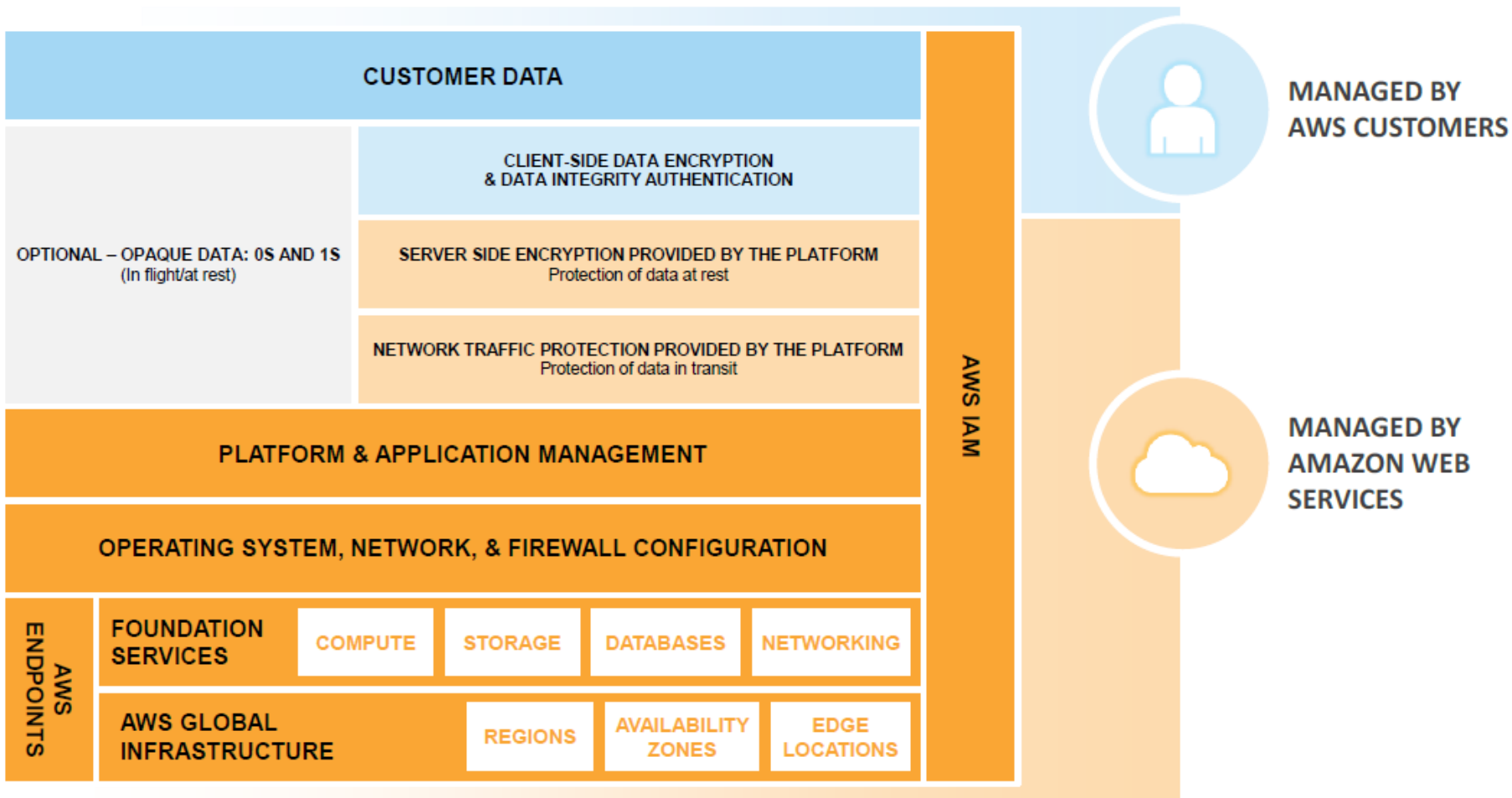
# Shared Responsibility | IaaS



# Shared Responsibility | PaaS



# Shared Responsibility | Abstracted Services



# AWS in South Africa



We are pleased to announce that AWS has opened a new office in Johannesburg!

[Learn more »](#)

[aws.amazon.com/aws-africa](https://aws.amazon.com/aws-africa)



The screenshot shows the mybroadband website interface. At the top left is the mybroadband logo. To its right is a Telkom advertisement for 'Connected Office' with a price of R548. Below the logo is a navigation menu with categories like Tech News, Company News, Events, Breaking News, Forums, What's New, Classifieds, Photos, and IT Jobs. A search bar with the Google logo is visible. A prominent green banner advertises 'webafriqa' with the text 'CONTRACT-FREE, RELIABLE INTERNET'. Below this is a news article titled 'High-speed access to Amazon Web Services in South Africa' with a sub-headline 'While it's not a local node, Teraco now provides better connectivity to locally developed Amazon Web Services'. The article includes social media sharing options for Facebook and Twitter.



# Challenge to you as architects of the future

- **Blend seamlessly into the digital world**
- **Use catalysts for real-time business models**
- **Mobilize business operations by computing everywhere**
- **Parse real time information to generate visibility**
- **Extract valuable insights with machine learning**
- **Develop the next-generation software application that is capable of action**

<http://www.allthingsdistributed.com/>



**Thank you!**

@smneedham

linkedin/in/smneedham