



Shared IT Services for Higher Education & Research

Conference 2018

Mythbusting in the Cloud

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Why Mythbusting

<http://bit.ly/whymythbusting>



What is the Cloud?

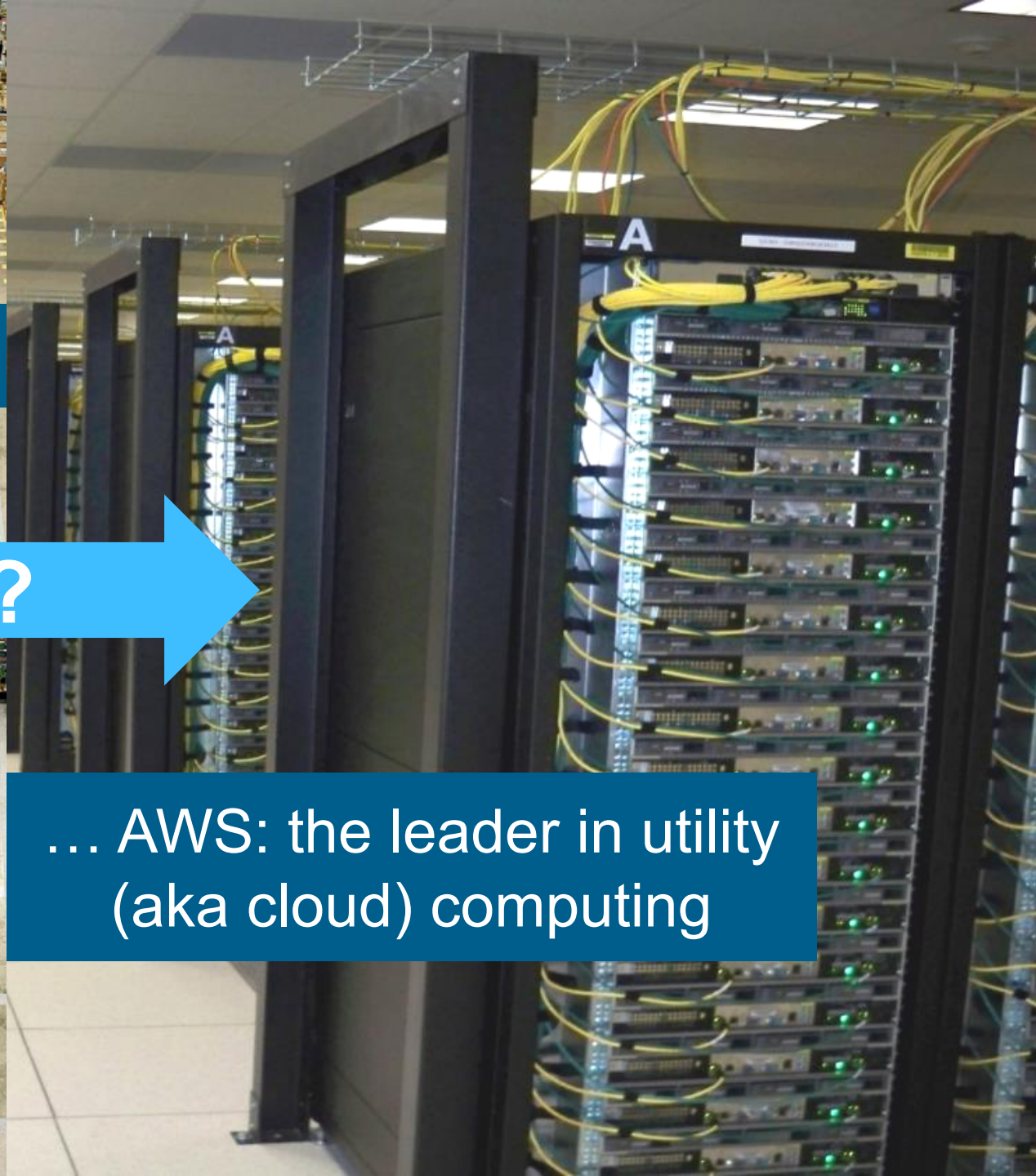
The on-demand delivery of IT resources over public or private networks with zero up-front costs, no long-term contracts, and pay-as-you-go pricing



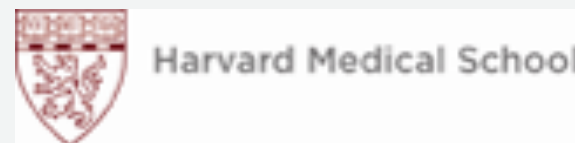
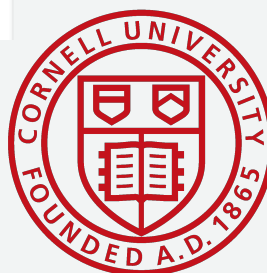
Amazon.com...



?



... AWS: the leader in utility
(aka cloud) computing



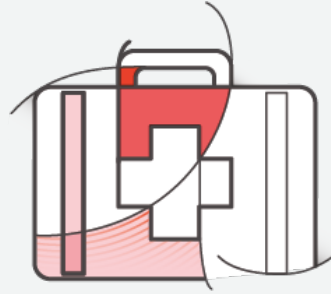


The Cloud Helps Higher Ed Do More with Less



Application Scaling

Scale up or down for peaks



Disaster Recovery

Keep running during emergencies



Reduce Time to Research

Easily add or remove capacity, no waiting in research queues



Mission-Critical Workloads

Free IT teams from undifferentiated heavy lifting



Managed Desktops

Give students access to resources they need on any supported device



Big Data

Build, deploy and operate big data for predictive analytics



Survey Results

<http://bit.ly/2qGQtRJ>

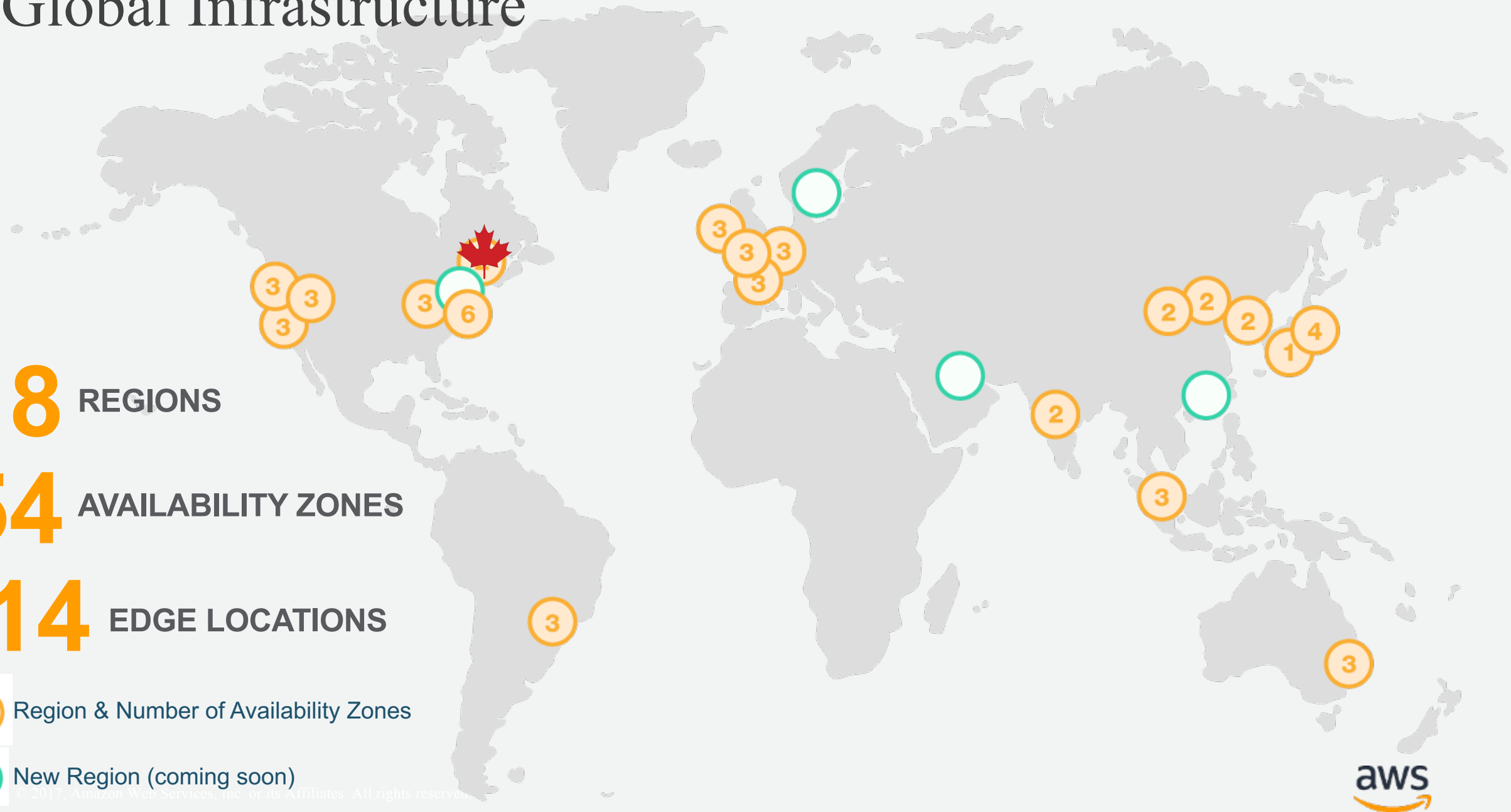
Myth #1:

**The cloud can't meet my data residency
and privacy requirements**

Global Infrastructure

18 REGIONS
54 AVAILABILITY ZONES
114 EDGE LOCATIONS

- # Region & Number of Availability Zones
- New Region (coming soon)



NEW: Direct Connect location in Vancouver

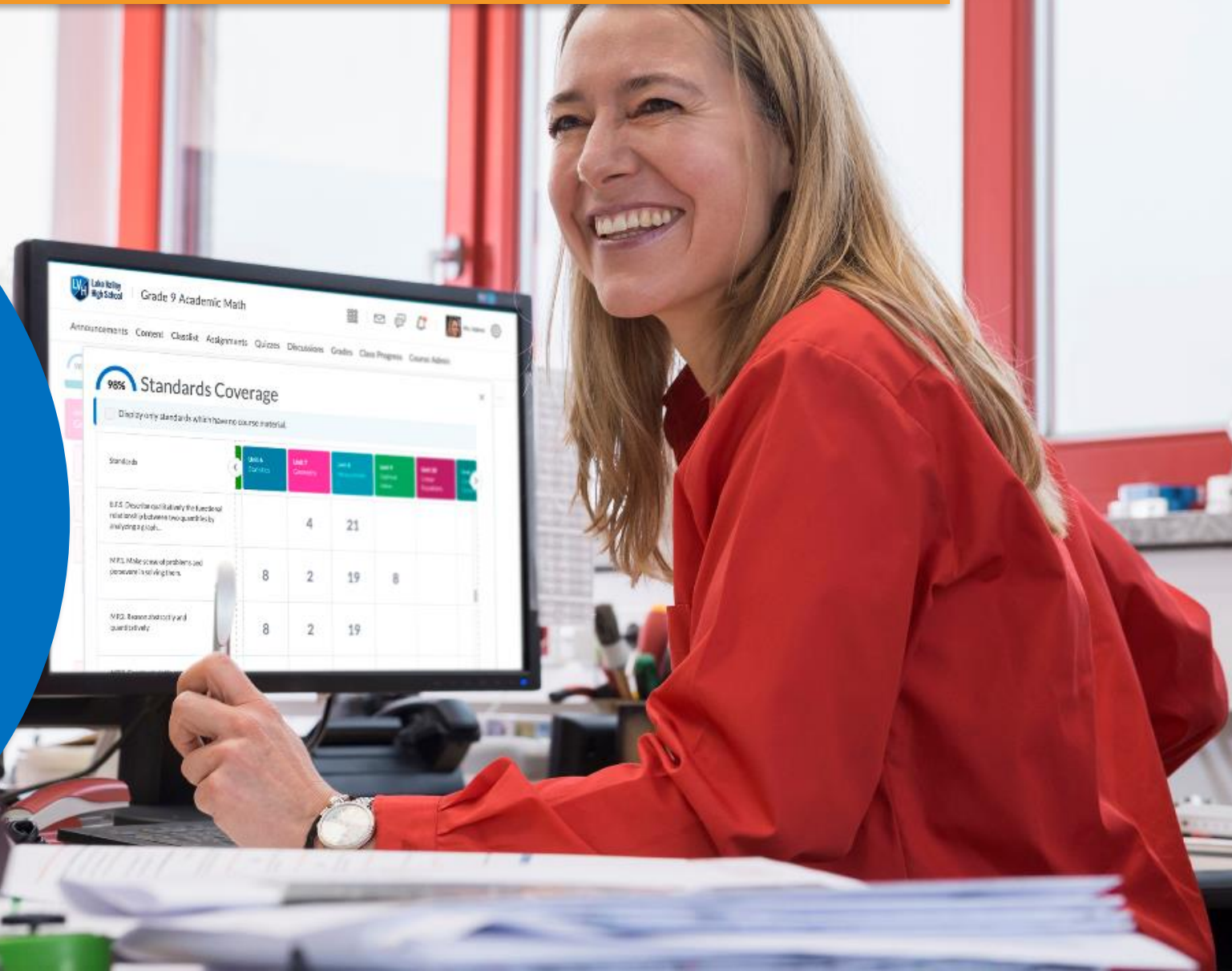
- Reduces Bandwidth Costs
- Consistent Network Performance
- Compatible with AWS Services
- Private Connectivity your Amazon VPC
- Elastic
- Simple



D2L

Education is **always on**.
Our applications need to
be there for millions of
students and teachers
whenever they need them.
AWS helps ensure high
availability and resiliency”

- Nick Oddson, CTO

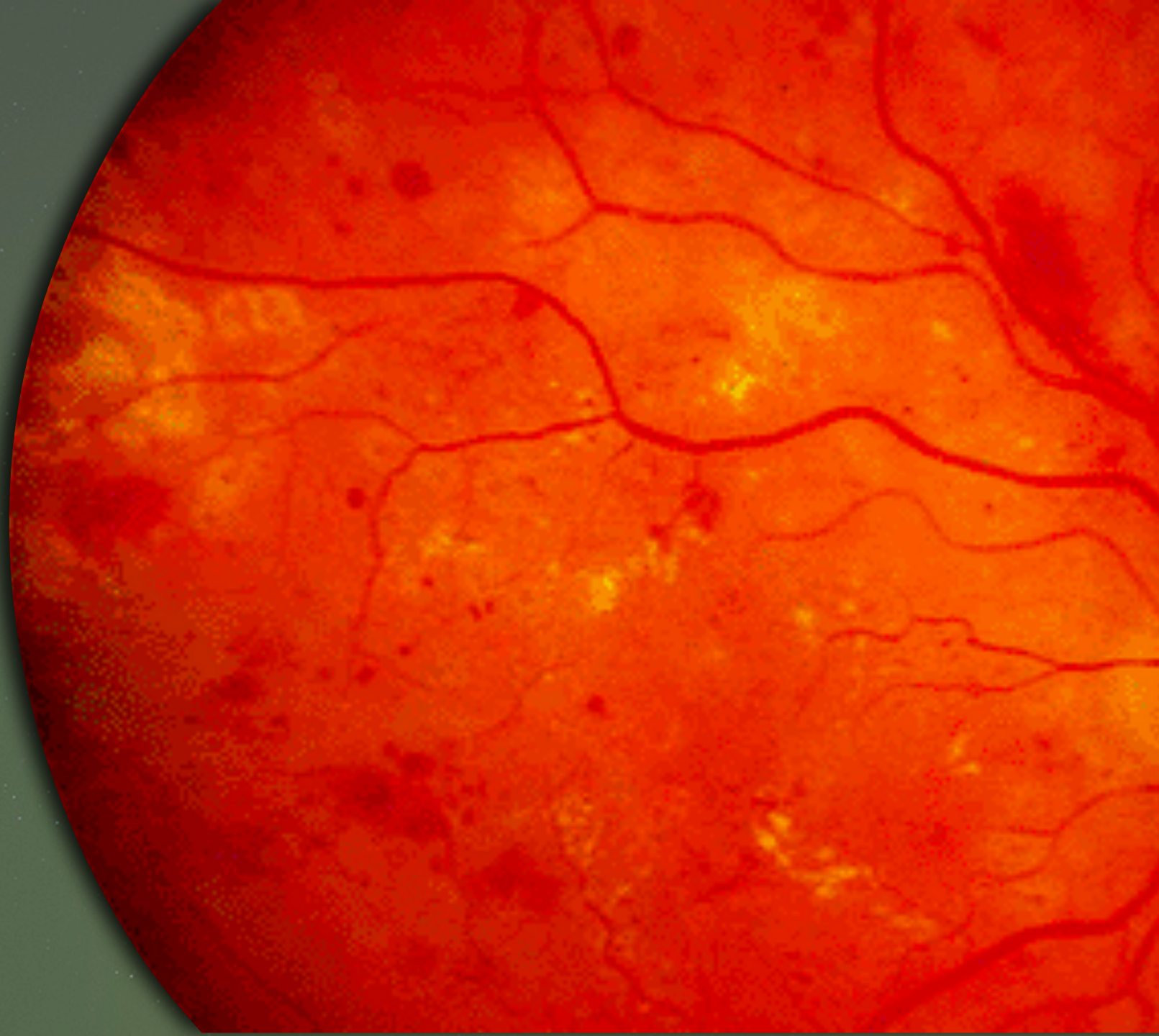


Myth #2:

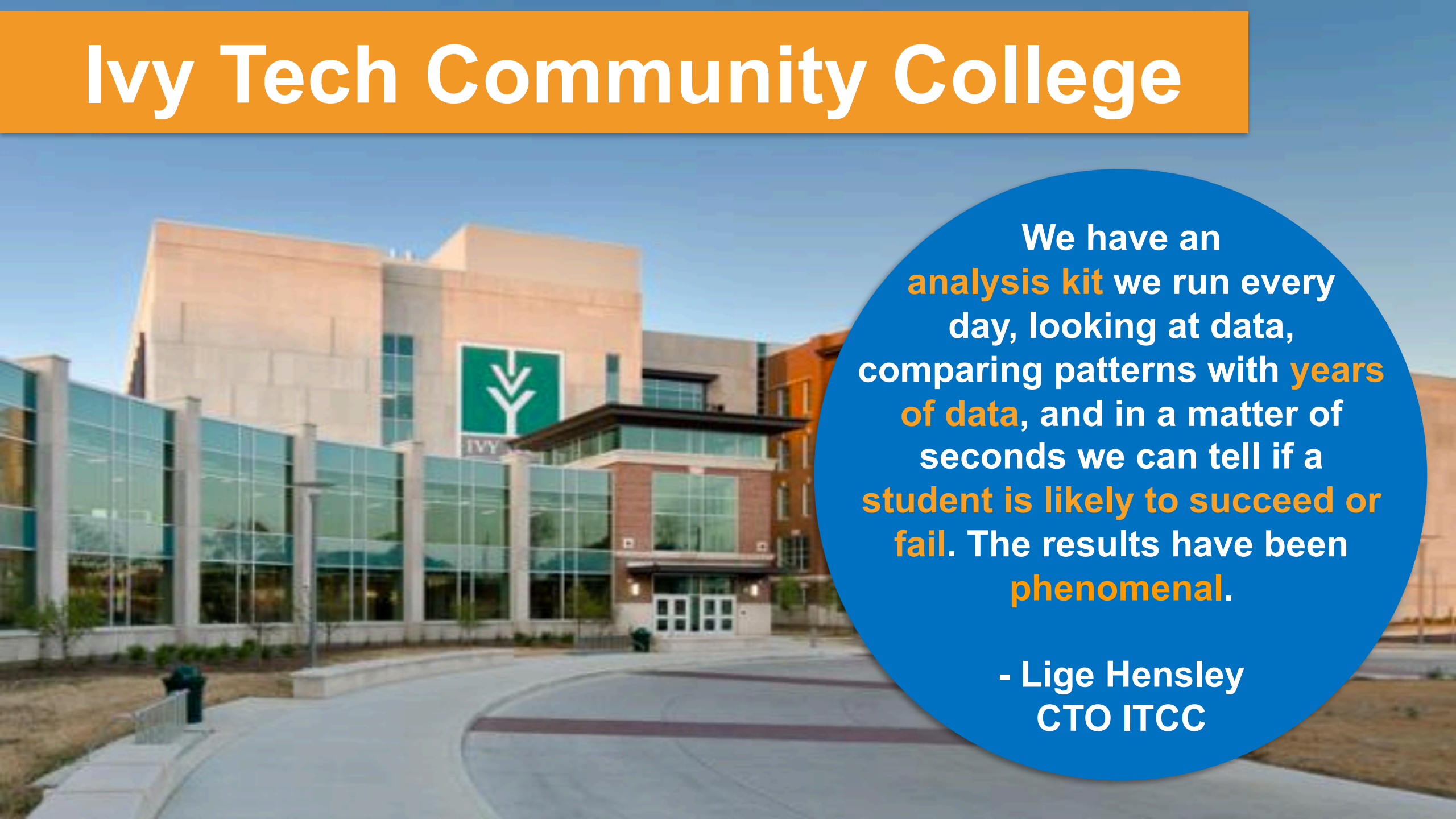
**The cloud doesn't impact the learning
experience**

Stanford

Early detection of diabetic
complications using Deep
Learning



Ivy Tech Community College



We have an **analysis kit** we run every day, looking at data, comparing patterns with **years of data**, and in a matter of seconds we can tell if a **student is likely to succeed or fail**. The results have been **phenomenal**.

- Lige Hensley
CTO ITCC

Natural Language Processing at Clemson University



The researches broke the record for creating the largest **high-performance cluster in the cloud** by using more than **1,100,000 vCPUs** on Amazon EC2 Spot Instances running in a single AWS region.

The researchers conducted nearly **half a million** topic modeling experiments



Myth #3:

**The Cloud isn't secure and I lose control
of my environment**

Security of the Cloud: Our #1 Priority

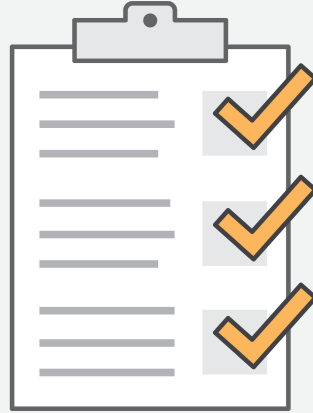
PEOPLE & PROCESS

SYSTEM

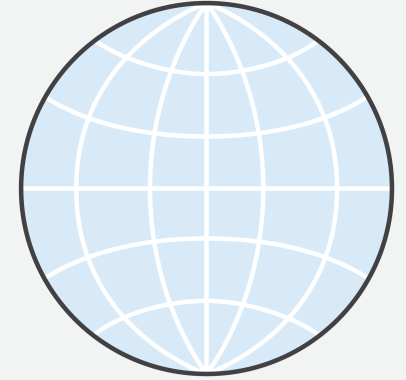
NETWORK

PHYSICAL

Familiar security model, but far better at keeping people away from data



Security measures are validated and driven by security experts across our customer base



Superset of security controls and advanced security features that benefit all customers

Strengthen your security posture



Over 50 global
compliance
certifications and
accreditations



Benefit from AWS
industry leading
security teams 24/7,
365 days a year



Security infrastructure
built to satisfy military, global
banks, and other high-
sensitivity organizations



Leverage security
enhancements from 1M+
customer experiences

Architected for Government Security Requirements



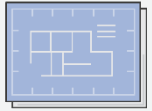
And many more...

Security in the Cloud: Deep & Rich Toolsets

Visibility and Control



CloudTrail
Track user activity and API usage



Config
Track resource inventory and changes



CloudWatch
Monitor resources and applications



GuardDuty
Intrusion detection and analysis

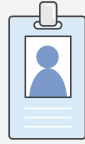


Amazon Macie
Data access protection through machine learning



Trusted Advisor
Warning and reports on proper configuration

Identity & Access Mgmt



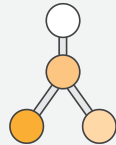
Authorization
Manage user access with rich policy language



AWS Single Sign-On
SAML 2 & Oauth extend reach of existing identities



Directory Service
Host and manage Microsoft Active Directory



Organizations
Manage settings for multiple accounts

Networking



Virtual Private Cloud
Network-isolated cloud resources



VPC Endpoints & PrivateLink
Private x-VPC networking



VPC Flow Logs
Comprehensive netflow data with click of button



Amazon WAF
Filter/control potentially malicious web traffic

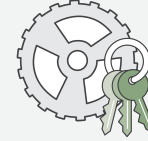


AWS Shield
DDoS protection

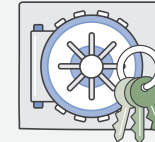


Certificate Manager
Provision, manage, deploy, rotate SSL/TSL certificates

Encryption



Key Management Service
Manage creation and control of encryption keys



CloudHSM
Hardware-based key storage



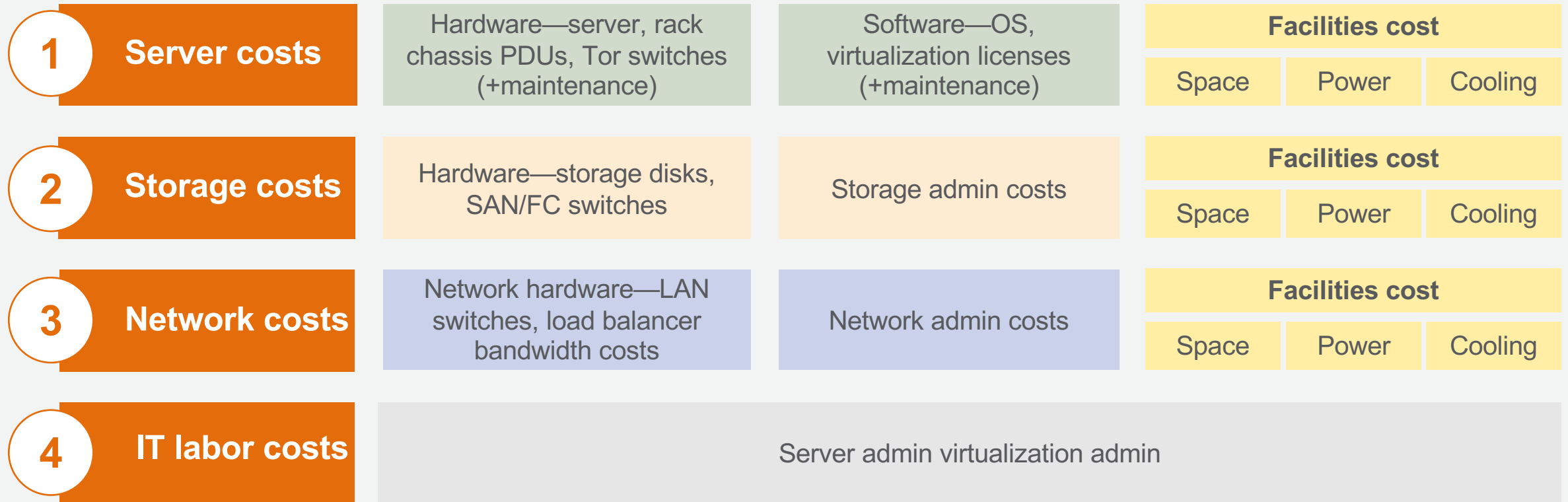
Server-Side Encryption
Flexible data encryption options

Myth #4:

The cloud is more expensive

TCO = acquisition costs + operations costs

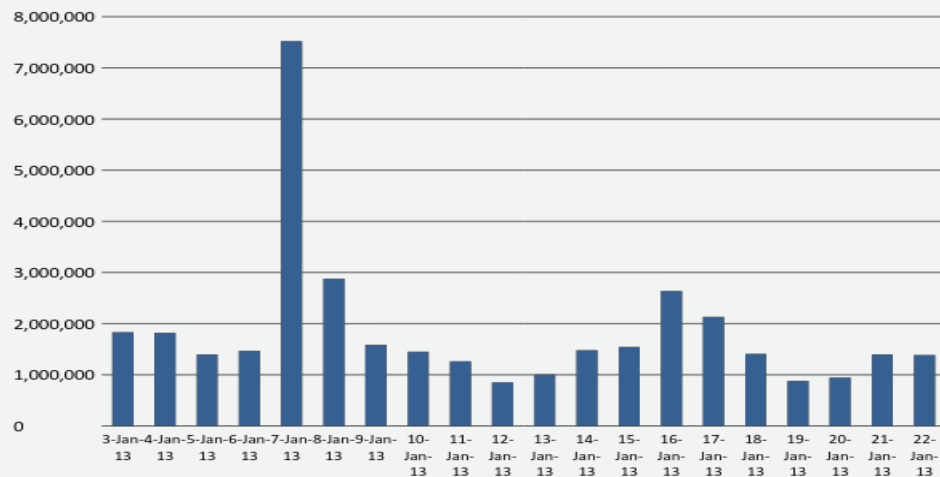
illustrative



The diagram doesn't include every cost item. For example, software costs can include database, management, and middle-tier software costs. Facilities cost can include costs associated with upgrades, maintenance, building security, taxes, and so on. IT labor costs can include security admin and application admin costs.



University of Notre Dame Saves **+\$1M** on AWS

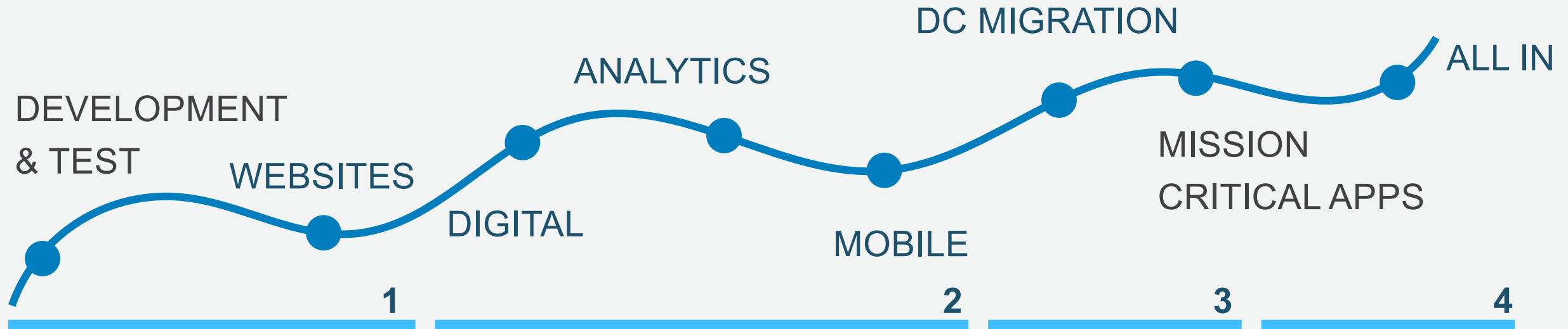


- Cloud first strategy & implementation
- 40% cost savings in annual IT operations
- \$1M+ savings in data backups
- Easily scale IT infrastructure to needs

Myth #5:

Cloud adoption is difficult

Cloud Adoption Path



Myth #6:

**The cloud and cloud skills are not
relevant for everybody**

new



aws educate

Skill up on the cloud.
Choose your personalized path to a cloud education.

Join AWS Educate ▶

This banner has a red background. It features an illustration of a tablet with two interlocking gears on the screen and a pencil resting on the right side. The AWS Educate logo is in the top right corner.

aws educate

Earn Your Digital Credentials
for Your Cloud Career

Join AWS Educate ▶

This banner has an orange background. It features an illustration of a woman with long black hair and glasses, wearing a plaid jacket over a black top, holding a large circular badge with a code symbol (</>). The AWS Educate logo is in the top right corner.

aws educate

Find Your Cloud Career
on the Job Board

Join AWS Educate ▶

This banner has a blue background. It features a complex illustration of interlocking gears, some containing icons like a laptop, a server rack, and a database. A hand is shown typing on a laptop keyboard at the bottom left. The AWS Educate logo is in the top right corner.

aws educate

Create Your
Cloud Portfolio.

Join AWS Educate ▶

This banner has a green background. It features an illustration of a man with a beard and glasses, wearing a plaid shirt under a dark jacket, with a bag strap over his shoulder. The AWS Educate logo is in the top right corner.

British Columbia Institute of Technology

“We recently made the decision to **teach only AWS** (...) so that they can easily transition into the workforce”

- Dr. Bill Klug, Cloud Computing Head



Any Questions?

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