

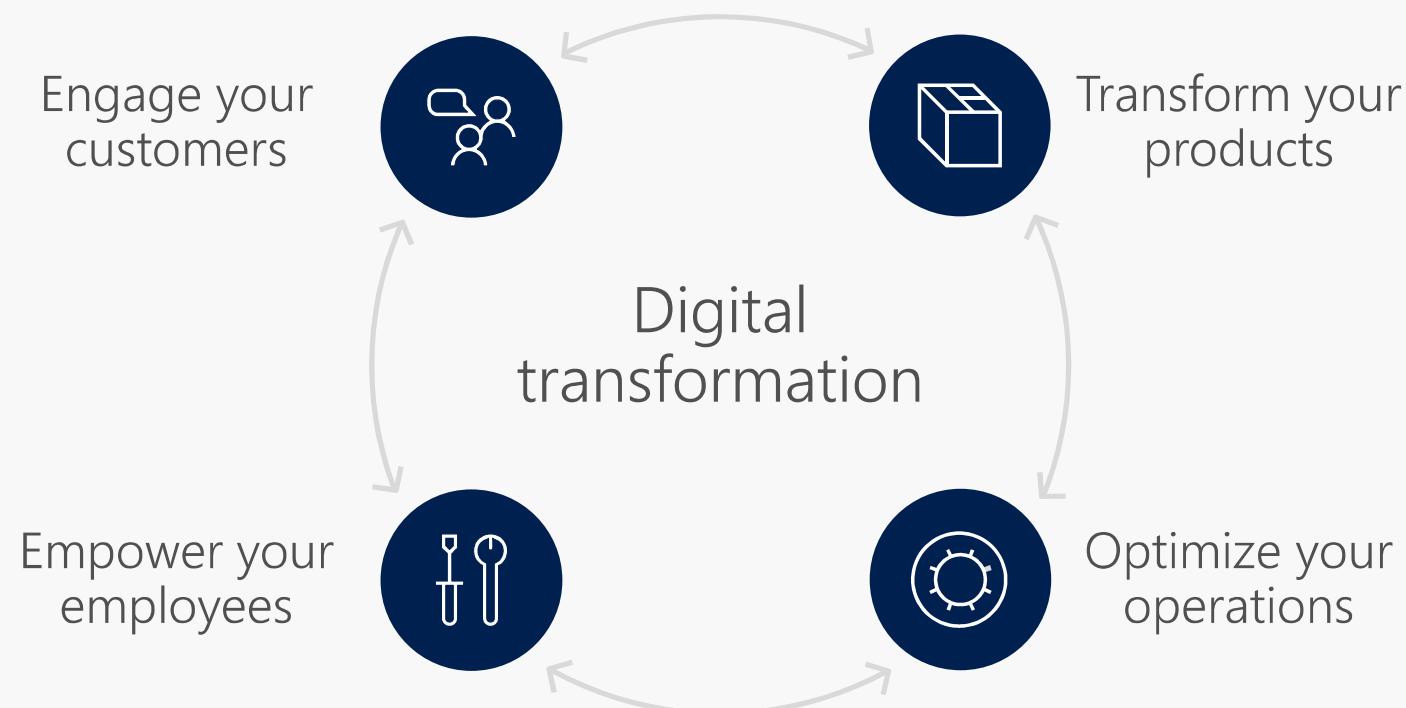


Cloud & IoT

The cloud platform for digital transformation

Teerachai Laothong
Instructor & Consultant
IMC Institute





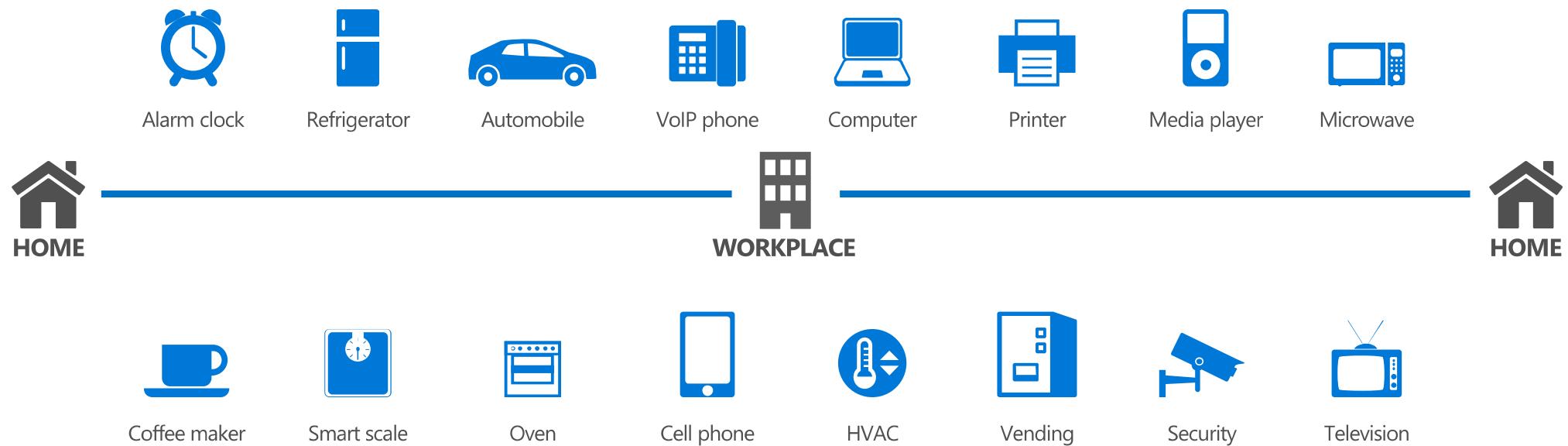
GOING DIGITAL

1 million/hour
new devices
coming online
by 2020

12 years
average age of S&P
500 corporations
by 2020

60% computing
in the public cloud
by 2025

IoT 2010



IoT 2016



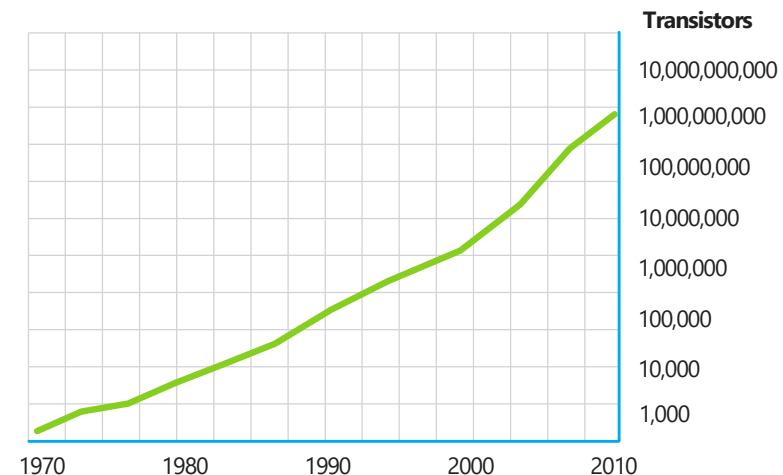
\$7.2 TRILLION

worldwide market for IoT solutions
by 2020

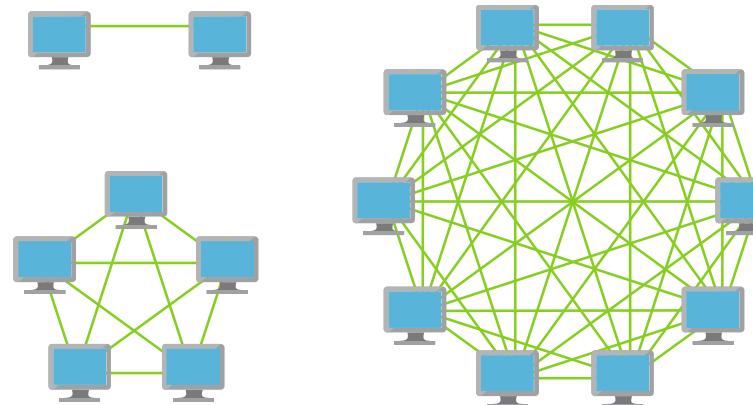
IDC: Worldwide and Regional Internet of Things (IoT) 2014–2020 Forecast

Disruptive Forces

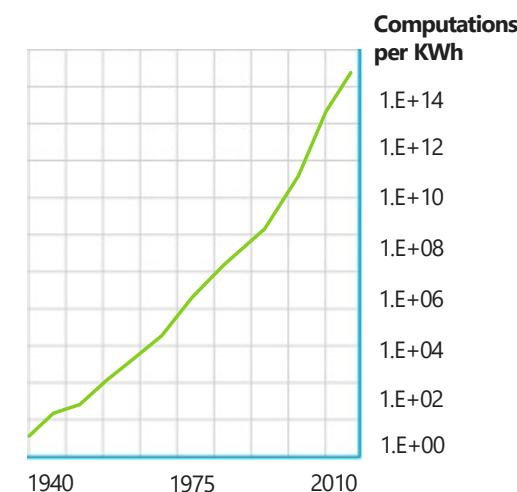
Moore's Law



Metcalf's Law



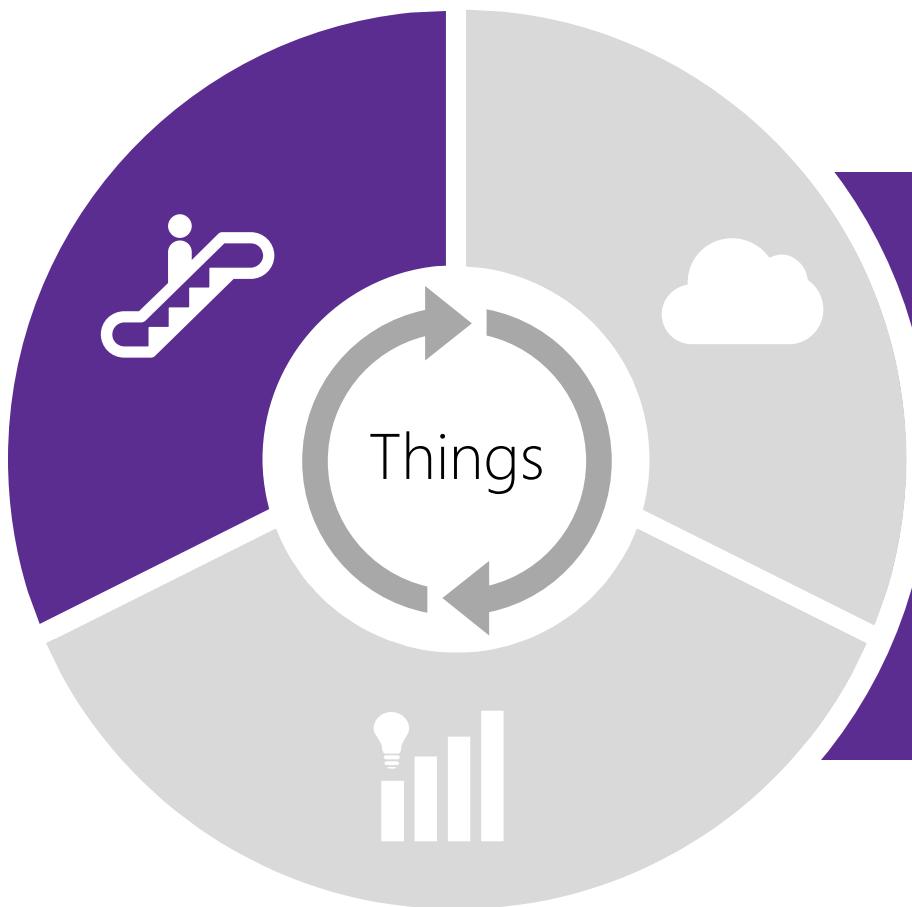
Koomey's Law



And more importantly:
what can you do by combining and analyzing signals from all of these IoT devices?

IoT Business Maturity Model

1. Operational efficiency



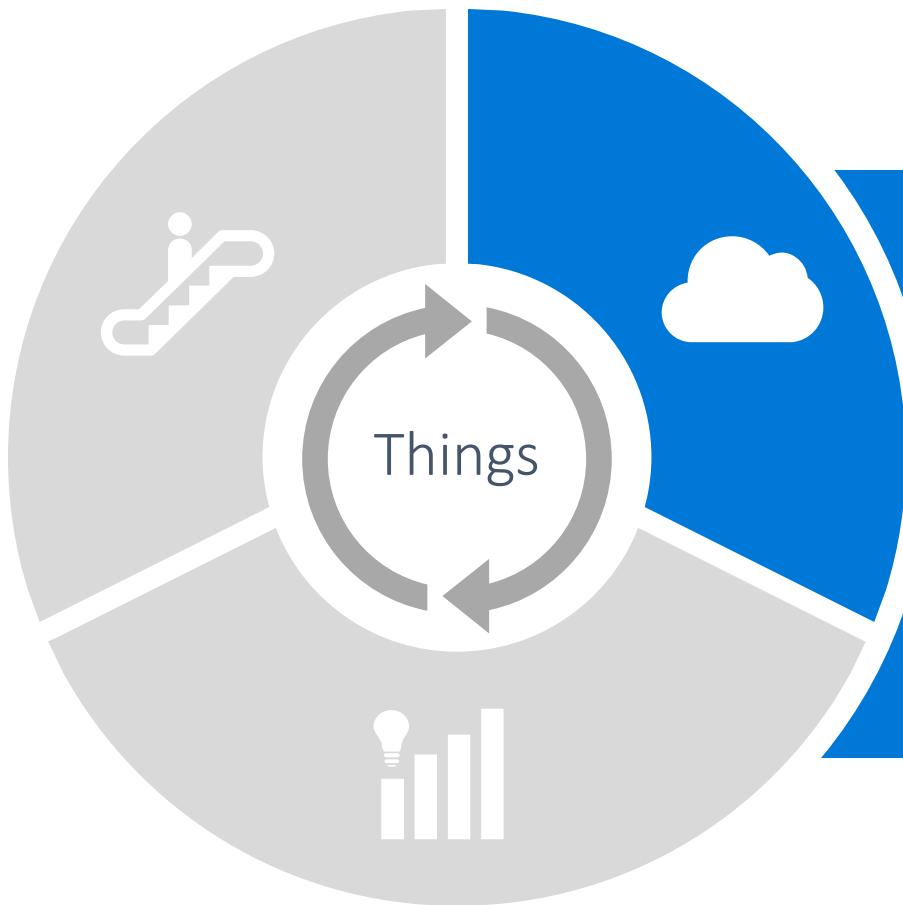
Connect devices and monitor telemetry

Monitor and track device state, location and health

Rules and alerting to improve operational efficiency

IoT Business Maturity Model

2. Business Intelligence



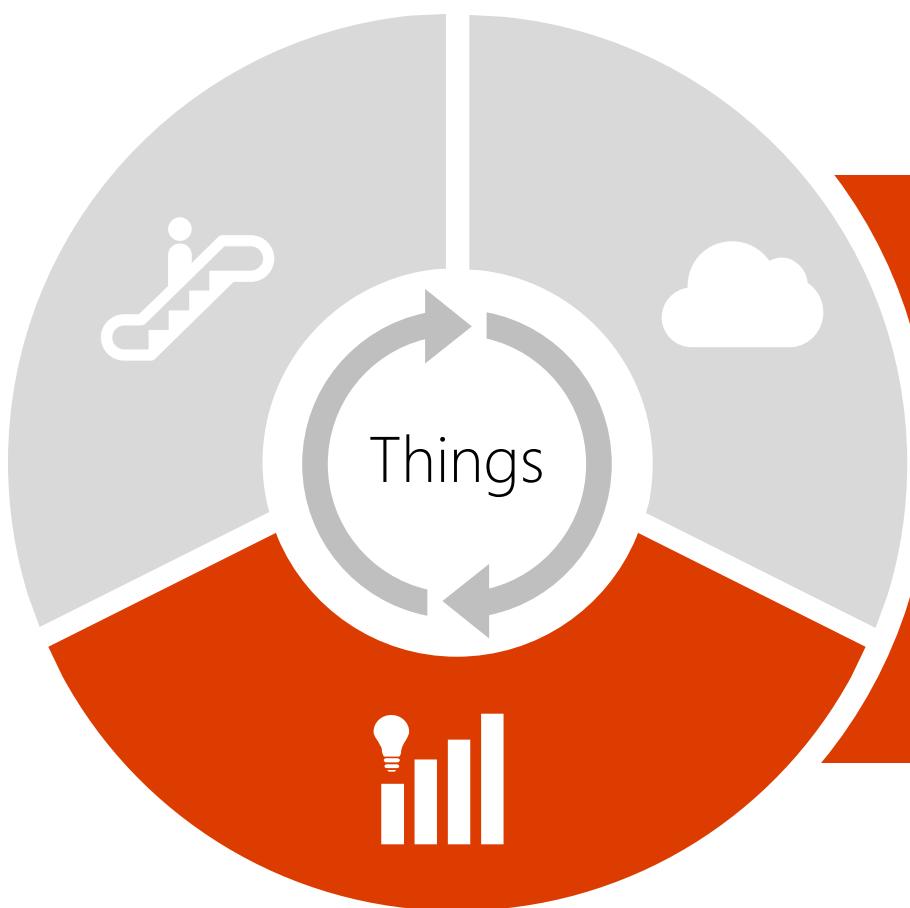
Analyze and visualize data from devices

Discover patterns in device data using predictive analytics

Operationalize insights to improve things and processes in real time

IoT Business Maturity Model

3. Business Transformation



Combine IoT & other data with advanced analytics to power new services and revenue streams

Expand into new adjacent businesses

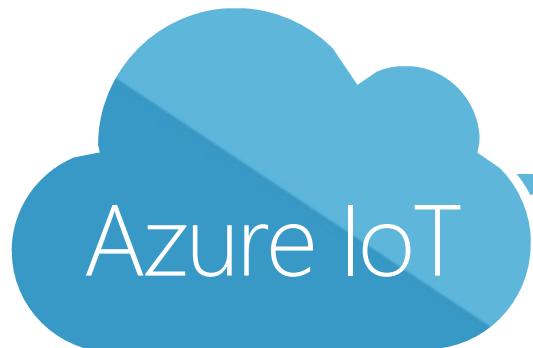
New partnership opportunities



IoT Device and Cloud Patterns



Cloud Based IoT Solutions



Three parts of an IoT solution

Easy to provision, use and manage

Pay as you go, scale as you need

Global reach, hyper scale

End to end security & privacy

1 Device connectivity & management

2 Analytics & operationalized insights

3 Presentation & business connectivity



What is the cloud like?

An approach to computing
that's about internet scale
and connecting to a variety
of devices and endpoints



Global
Footprint

Pay **only** for what you use

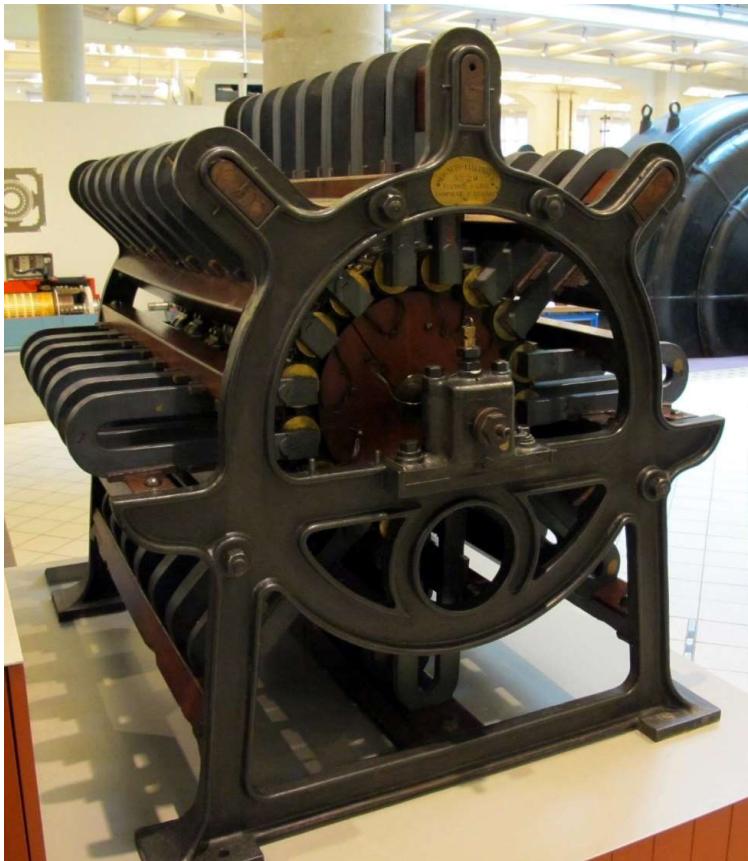
From your own vehicle to public service

A man in a suit and sunglasses sits on the open driver's side door of a dark-colored luxury sedan. He is looking towards the city skyline of San Francisco, which is visible in the background under a clear sky. The Uber logo and slogan are displayed in the upper right corner of the image frame.

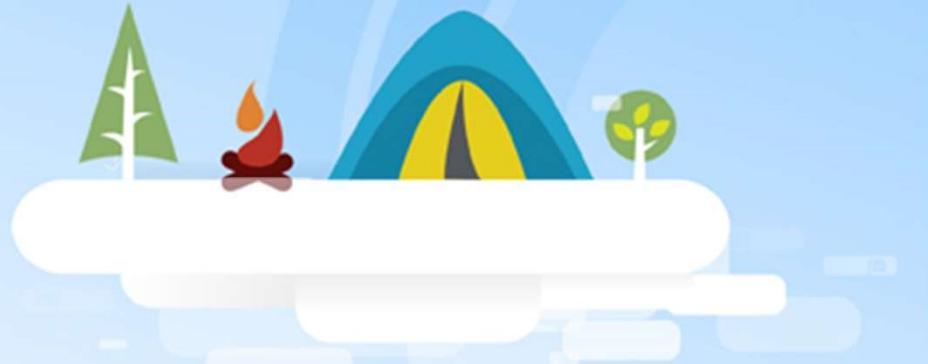
U B E R
EVERYONE'S PRIVATE DRIVER™

© 2013 Lips 2 Lips | www.lips2lips2lips.com

Analogy to Electrical Industry



Live Session

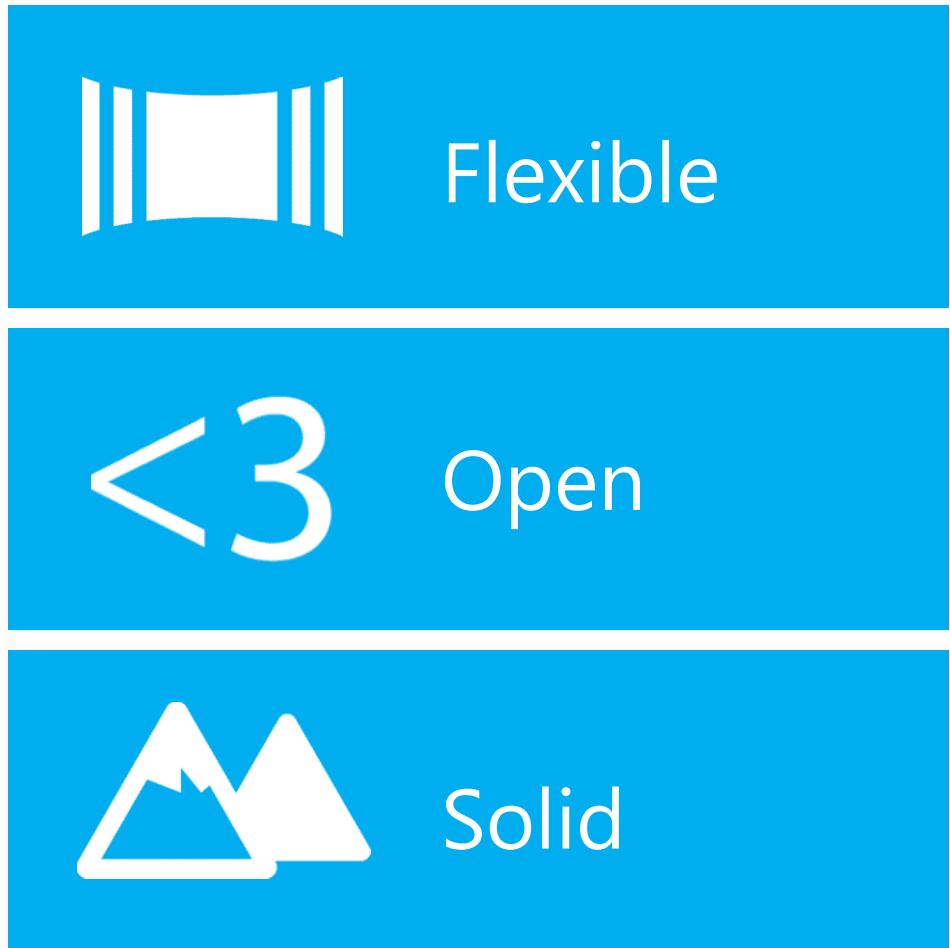




- Amazon Web Services (AWS), is a subsidiary of Amazon.com, which offers a suite of cloud computing services that make up an on-demand computing platform.

Windows Azure

Comprehensive set of services that enable you to quickly build, deploy and manage applications across a global network of Microsoft-managed datacenters



Australia	Luxembourg			
Austria	Malaysia			
Belgium	Mexico			
Brazil	Netherlands			
Canada	New Zealand			
Chile	Norway			
Colombia	Peru			
Costa Rica	Philippines			
Cyprus	Poland			
Czech Republic	Portugal			
Denmark	Puerto Rico			
Finland	Romania			
France	Russia			
Germany	Singapore			
Greece	Spain			
Hong Kong	Sweden			
Hungary	Switzerland			
India	Trinidad & Tobago			
Ireland	UK			
Israel	United States			
Italy	New Countries: Algeria			
Japan		Argentina	Kuwait	Saudi Arabia
Korea		Belarus	Latvia	Serbia
		Bulgaria	Liechtenstein	Slovakia
		Croatia	Lithuania	Slovenia
		Dominican Rep	Macedonia	South Africa
		Ecuador	Malta	Sri Lanka
		Egypt	Montenegro	Taiwan
		El Salvador	Morocco	Thailand
		Estonia	Azerbaijan	Tunisia
		Guatemala	Nigeria	Turkey
		Iceland	Oman	UAE
		Indonesia	Pakistan	Ukraine
		Jordan	Panama	Uruguay
		Kazakhstan	Paraguay	Venezuela
		Kenya	Qatar	Bahrain

countries and
territories

Get a Server



Demo

Deploy an Application



Demo

Run a Website



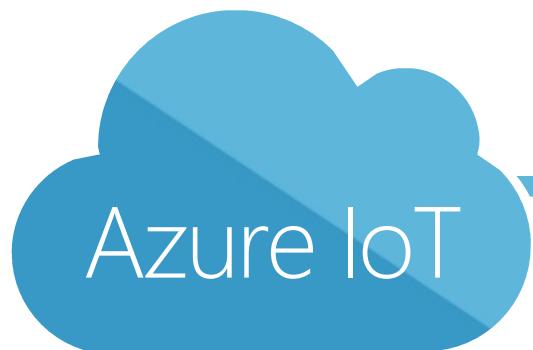
Demo

Scalability



Demo

Cloud Based IoT Solutions



Three parts of an IoT solution

Easy to provision, use and manage

Pay as you go, scale as you need

Global reach, hyper scale

End to end security & privacy

1 Device connectivity & management

2 Analytics & operationalized insights

3 Presentation & business connectivity

Microsoft Azure



Application innovation

Accelerate innovation with the cloud



Data and intelligence

Power decisions & apps with insights



Openness and flexibility

Build freely, deploy anywhere



Trust

Protect your business

Application innovation

Accelerate innovation with the cloud



Build apps faster and easier

Manage applications proactively

Deliver native mobile apps seamlessly

Build apps faster and easier



Build on PaaS



Existing frameworks



Web and mobile

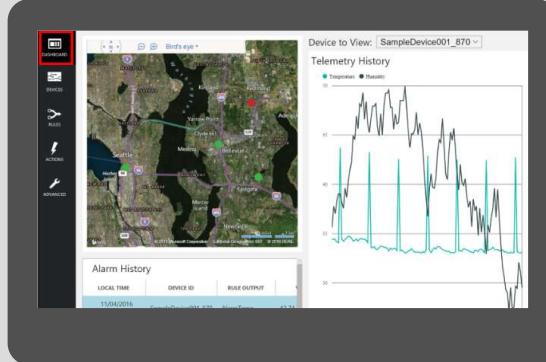


Microservices



Serverless Compute

Azure Internet of Things



Build on IaaS



Storage

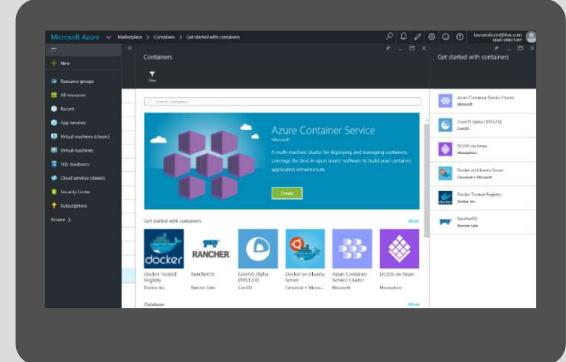


Virtual machines



Networking

Azure Marketplace



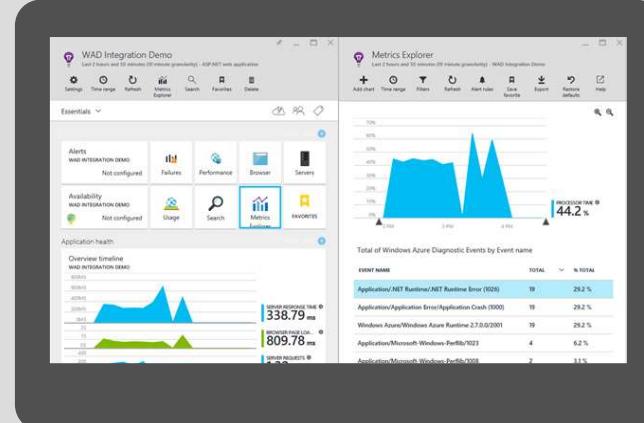
Manage applications proactively



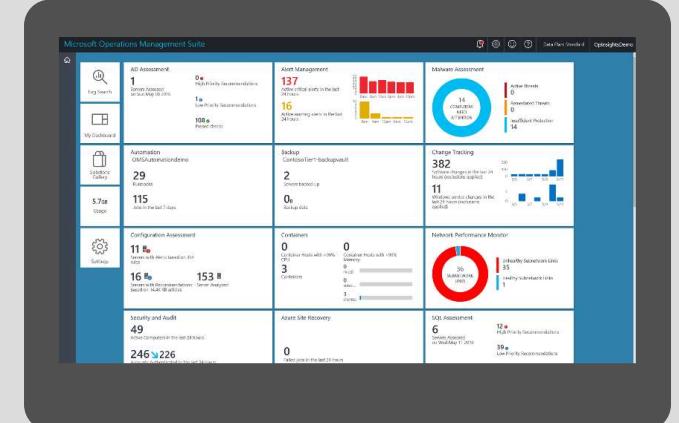
Azure Portal



Application Insights



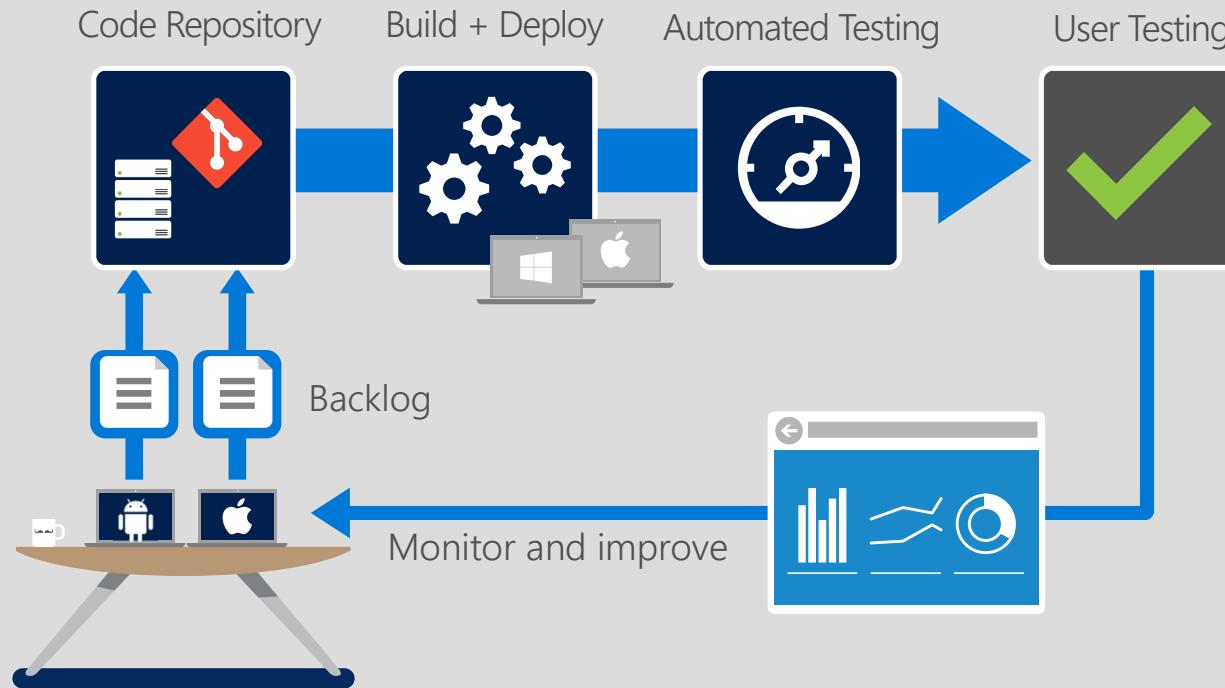
Operations Management Suite



Deliver native mobile apps seamlessly



Mobile DevOps



Mobile Back-end Services



Microsoft Azure



Application innovation

Accelerate innovation with the cloud



Data and intelligence

Power decisions & apps with insights



Openness and flexibility

Build freely, deploy anywhere



Trust

Protect your business

Data and intelligence

Power decisions & apps with insights



Support business strategy with any data

Predict and respond proactively

Learn and engage with artificial intelligence

Support business strategy with any data



Back-end power

Big data



Web data



Traditional data



Front-end insights



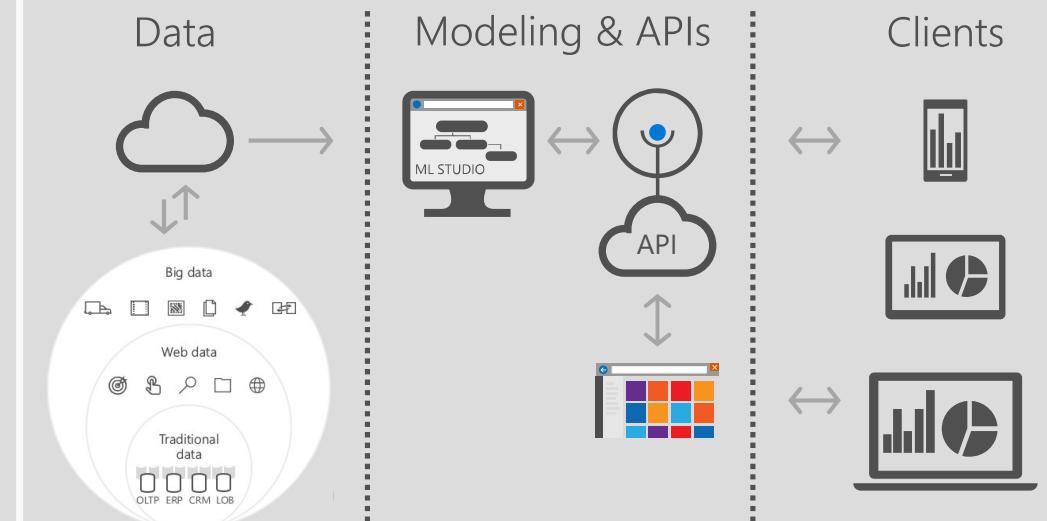
Predict and respond proactively



Azure Machine Learning templates

- ↗ Demand forecasting
- 🔧 Predictive maintenance
- 🚗 Vehicle telemetry

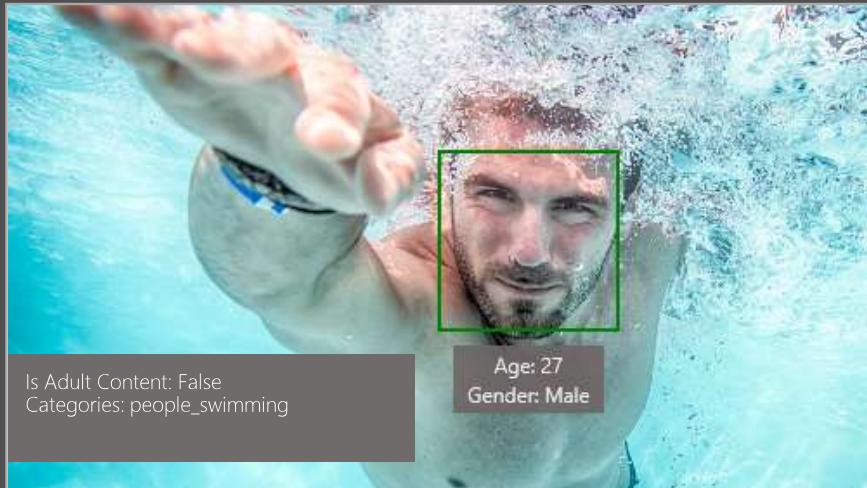
Azure Machine Learning service



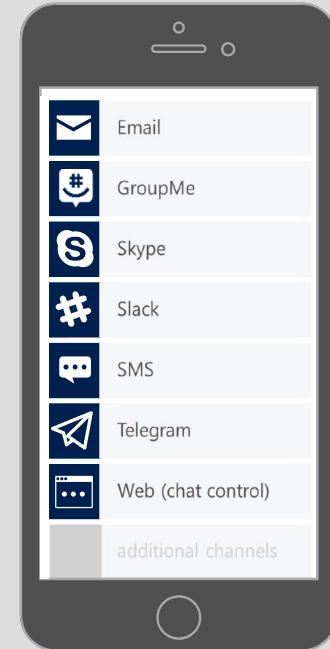
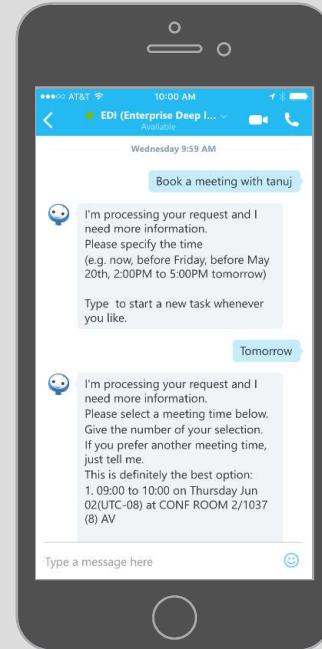
Learn and engage with artificial intelligence



Cognitive services



Bot framework



Microsoft Azure



Application innovation

Accelerate innovation with the cloud



Data and intelligence

Power decisions & apps with insights



Openness and flexibility

Build freely, deploy anywhere



Trust

Protect your business

Openness and flexibility

Build freely, deploy anywhere



Build and run open source solutions

Extend on-premises data and apps

Deploy the cloud on-premises

Build and run open source solutions



Any tool, application, framework

Applications



DevOps



Frameworks



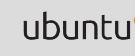
Databases & middleware



Containers



Infrastructure



Extend on-premises data and apps



Hybrid Use Cases

Application Availability



Bottomless Storage

Identity Management

Full hybrid applications

Seamless & secure across:

INFRASTRUCTURE

DATA

USERS

APPS

MANAGEMENT

Azure Backup

Azure Site Recovery

Azure StorSimple

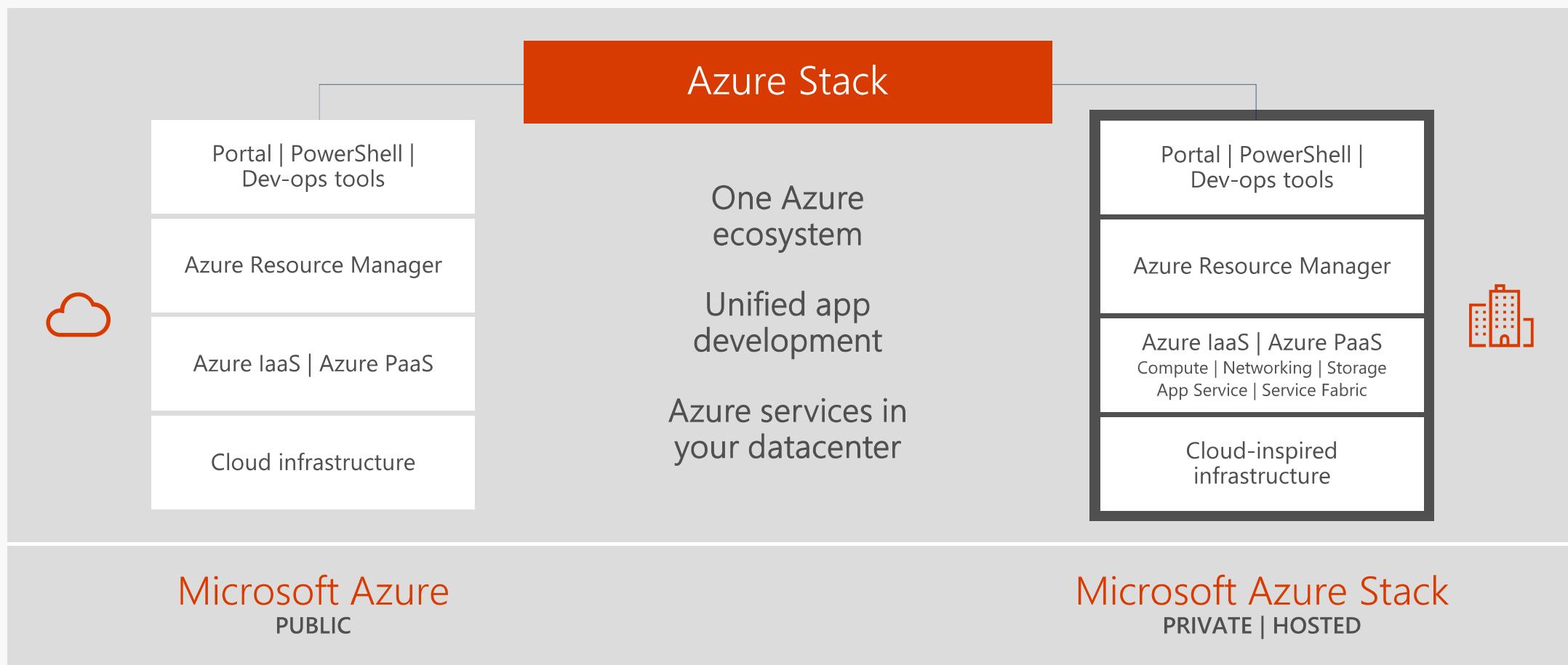
SQL Server Stretch DB

Azure Active Directory

App Service
Web | Mobile | Logic Apps | API Apps

Operations Management Suite

Deploy the cloud on-premises



Microsoft Azure



Application innovation

Accelerate innovation with the cloud



Data and intelligence

Power decisions & apps with insights



Openness and flexibility

Build freely, deploy anywhere



Trust

Protect your business

Trust
Protect your business



Detect and mitigate threats

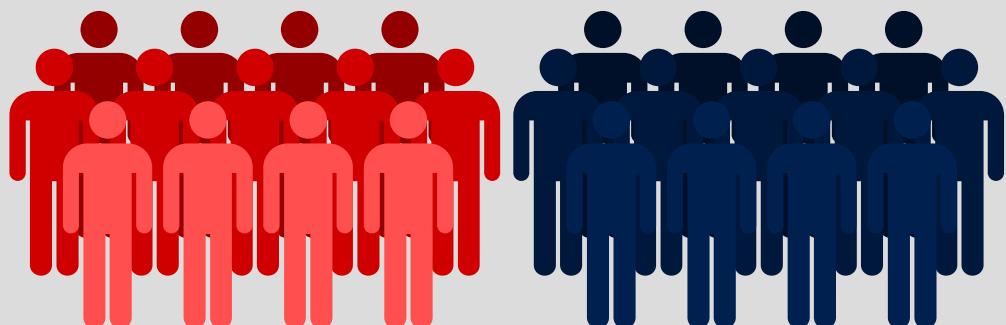
Achieve global scale, in local regions

Benefit from relentless business commitment

Detect and mitigate threats



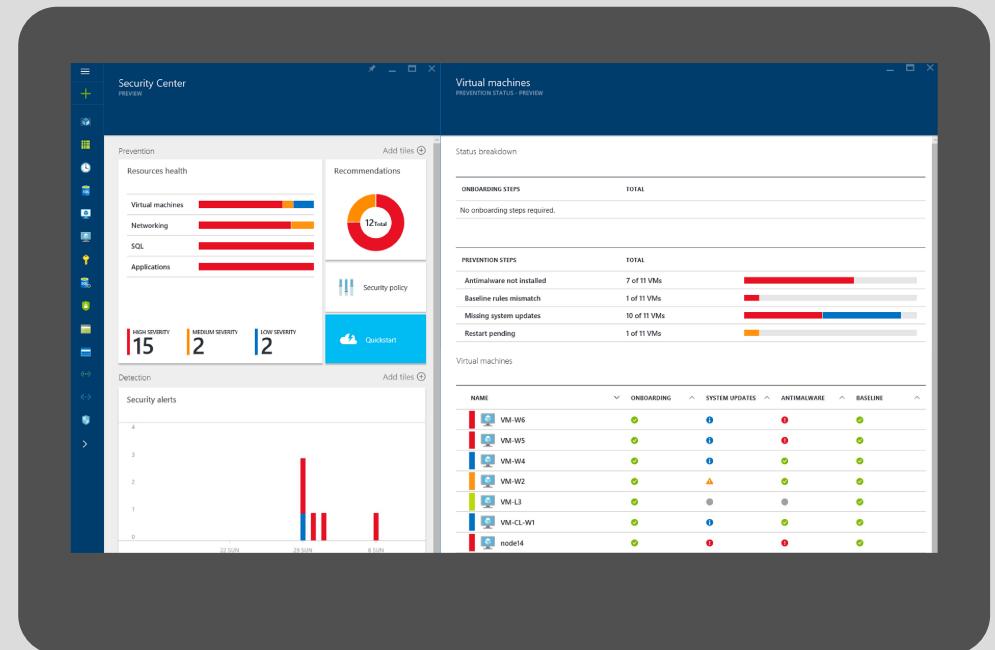
Securing the platform



RED TEAM

BLUE TEAM

Empowering you



Achieve global scale, in local regions



34
regions



Benefit from relentless business commitment



ISO 27001



SOC 1 Type 2



SOC 2 Type 2



PCI DSS Level 1



Cloud Controls Matrix



ISO 27018



Content Delivery and Security Association



Shared Assessments



FedRAMP
JAB P-ATO



HIPAA/
HITECH



FIPS 140-2



21 CFR
Part 11



FERPA



DISA Level 2



CJIS



IRS 1075



ITAR-ready



Section
508 VPAT



European
Union Model
Clauses



EU Safe
Harbor



United Kingdom
G-Cloud



China Multi
Layer Protection
Scheme



China
GB 18030



China
CCCPPF



Singapore
MTCS Level 3



Australia
Signals
Directorate



New
Zealand
GCIO



Japan
Financial
Services



ENISA
IAF

Microsoft Azure



Application innovation

Accelerate innovation with the cloud



Data and intelligence

Power decisions & apps with insights



Openness and flexibility

Build freely, deploy anywhere



Trust

Protect your business

Momentum

120,000

New Azure customer
subscriptions/month



715 million

Azure Active
Directory users



150 billion

Azure SQL query
requests processed/day



120 billion

Hits to websites run on
Azure Web App Service



>85%

of Fortune 500 use
Microsoft Cloud



Microsoft Cloud

Office 365

Dynamics

Secure
Productive
Enterprise &
Operations
Management +
Security

Cortana
Intelligence
Suite

Azure

PRODUCTIVITY

BUSINESS
APPS

SECURITY &
MANAGEMENT

DATA &
INTELLIGENCE

APPLICATION
INNOVATION

Next Steps

1. Try

Identify opportunities for a proof of concept solution

Get hands-on with Azure Immersion

2. Plan

Cloud capabilities: current and future

Get a structured consulting engagement or on-site workshop

3. Deploy

Pilot your first project with the support of Microsoft

Consult with your account team to learn more



Thank you

Appendix

Security & Management

- Security Center
- Portal
- Azure Active Directory
- Azure AD B2C
- Multi-Factor Authentication
- Automation
- Scheduler
- Key Vault
- Store/ Marketplace
- VM Image Gallery & VM Depot

Media & CDN

- Media Services
- Media Analytics
- Content Delivery Network

Integration

- API Management
- BizTalk Services
- Logic Apps
- Service Bus

Application Platform

- Web Apps
- Mobile Apps
- API Apps
- Cloud Services
- Service Fabric
- Notification Hubs
- Functions

Data

- SQL Database
- SQL Server Stretch Database
- Redis Cache
- Storage Tables
- DocumentDB
- Azure Search

Intelligence

- Cognitive Services
- Bot Framework
- Cortana

Compute Services

- Container Service
- VM Scale Sets
- Batch
- RemoteApp
- Dev/Test Lab

Developer Services

- Visual Studio
- Mobile Engagement
- VS Team Services
- Xamarin
- Application Insights
- HockeyApp

Analytics & IoT

- HDInsight
- Machine Learning
- Stream Analytics
- Data Catalog
- Data Lake Analytics Service
- Data Lake Store
- IoT Hub
- Event Hubs
- Data Factory
- Power BI Embedded

Hybrid Cloud

- Azure AD Health Monitoring
- AD Privileged Identity Management
- Domain Services
- Backup
- Operational Analytics
- Import/Export
- Azure Site Recovery
- StorSimple

Infrastructure Services

Compute

- Virtual Machines
- Containers

Storage

- Blob
- Queues
- Files
- Disks

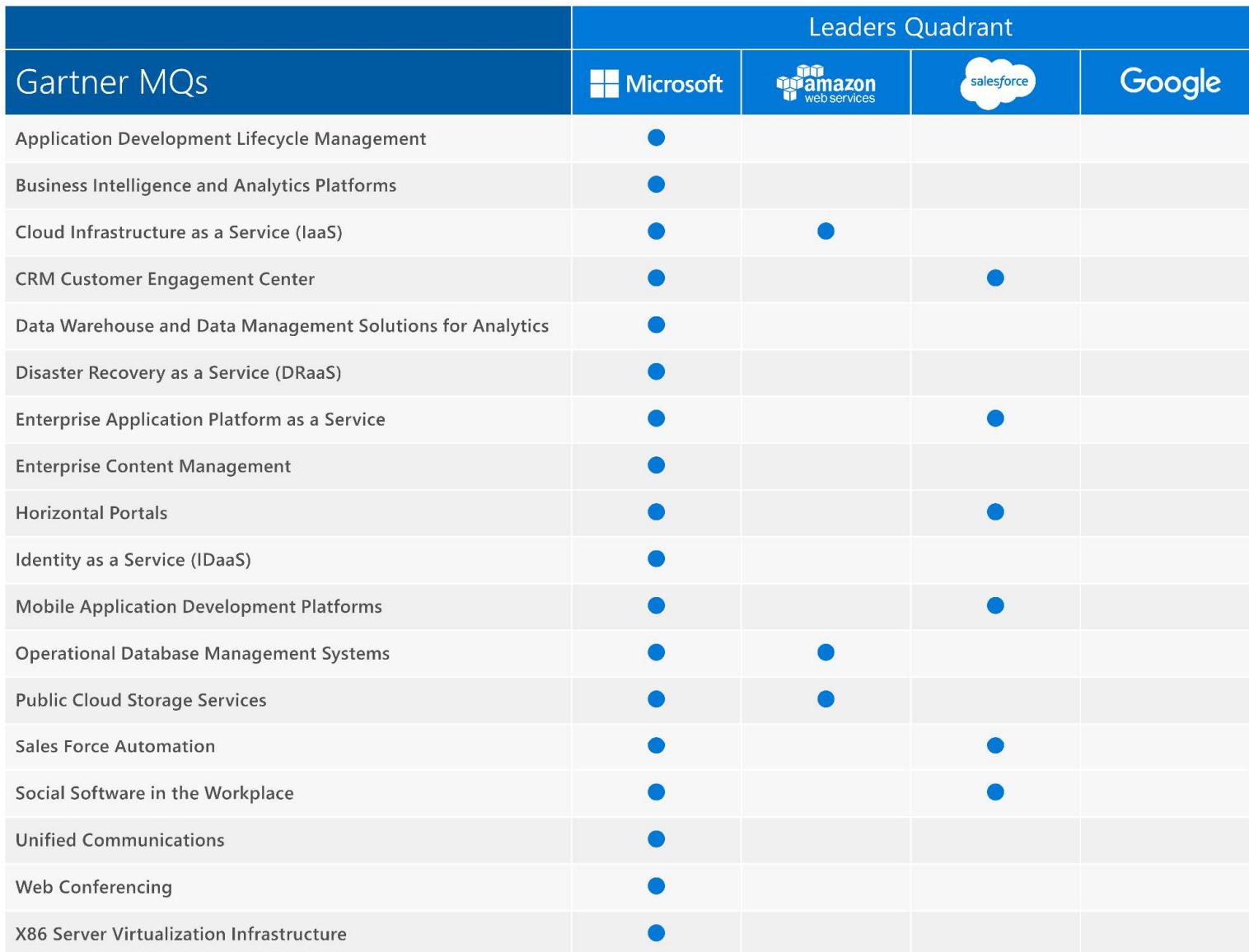
Networking

- Virtual Network
- Load Balancer
- DNS
- Express Route
- Traffic Manager
- VPN Gateway
- App Gateway

Datacenter Infrastructure (32 Regions, 24 Online)



Analyst reports



IT pro & developer essentials

ITprocloudessentials.com

The screenshot shows the IT Pro Cloud Essentials landing page. On the left, a sidebar menu includes links for HOME, CLOUD SERVICES, EDUCATION, TECHNICAL SUPPORT, AZURE SCENARIOS, PROFILE, and CONTACT US. The main content area features a section titled "Offers" with three items: "Cloud Services" (represented by a cloud icon), "Education" (represented by a graduation cap icon), and "Support" (represented by a microphone icon). Below this is a large image of two men working on a computer, with a green button labeled "Activate now".

IT Pro Cloud Essentials
Expand your knowledge and increase your skills by activating your IT Pro Cloud Essentials benefits.

HOME
CLOUD SERVICES
EDUCATION
TECHNICAL SUPPORT
AZURE SCENARIOS
PROFILE
CONTACT US

Offers

Cloud Services
Get in the cloud with Azure and extended trials of Office 365 and Enterprise Mobility Suite

Education
Increase your cloud knowledge and get certified with training courses from Microsoft Virtual Academy and Pluralsight

Support
Get a free support incident and priority support in TechNet forums

Activate Offers
Get started today by activating your offers
Activate now

my.visualstudio.com

The screenshot shows the my.visualstudio.com website. At the top, there's a navigation bar with links for Downloads, News, Support, Marketplace, Documentation, MSDN Subscriptions, Evelyn Padrino, and Sign out. The main content area has a banner for "Welcome to Visual Studio Dev Essentials!" with the tagline "Everything you need to build and deploy your app on any platform". Below this are four cards for "Azure App Service Free plan", "Visual Studio Code Modern lightweight editor", "Visual Studio Community Full-featured, extensible IDE", and "Pluralsight 6-month subscription". Further down are sections for "Featured articles and videos" and "Tools (10)", each containing several cards with icons and descriptions.

Visual Studio | My Benefits
Downloads News Support Marketplace Documentation
MSDN Subscriptions Evelyn Padrino Sign out

Welcome to Visual Studio Dev Essentials!
Everything you need to build and deploy your app on any platform

Azure App Service Free plan
Get everything you need to quickly and easily build web and mobile apps for any platform or device. Be our guest...
Use it free | Learn more

Visual Studio Code Modern lightweight editor
A powerful, streamlined code editor for your favorite platform - Linux, Mac OSX, and Windows.
Download the beta | Learn more

Visual Studio Community Full-featured, extensible IDE
Free for individuals, open source or small teams. Create apps for Windows, iOS, Android & more.
Download | Learn more

Pluralsight 6-month subscription
Available through December 31, 2015 or while supplies last, with 3-months available thereafter. World-class...
Activate | Take training

Featured articles and videos

Read about the latest news announced at Connect() 2015
Edit code on Mac, Linux, or Windows, using the Visual Studio Code Beta
Enjoy free benefits with Visual Studio Dev Essentials
Watch video

Tools (10)

Visual Studio Team Services Basic level
\$25 monthly Azure credit Coming soon!

Azure free trial \$200 credit

Universal Windows Platform VM 60 day trial VM

Extend on-premises data and apps



Hybrid

Storage	StorSimple + Azure Storage
Backup + DR	Azure Backup + Azure Site Recovery
Database	SQL Server 2016 Stretch DB + Azure SQL DB
App integration	Azure Service Bus + BizTalk
Identity	Azure Active Directory
Cloud management	Operations Management Suite + System Center
Networking	VPN + ExpressRoute