



IoT in Action

#IoTinActionMS



Unlocking IoT's Potential

**Charlie Grabiaud, Maarten
Struys, Nicolas Vasseur,
Giovanni Gatto**

IoT Sales & Technical Specialists
Microsoft



Azure IoT ecosystem momentum



Developer community	Partner ecosystem	
Visual Studio GitHub Hadoop Eclipse PHP Node.js PowerShell Eclipse Python ARM mbed MySQL Ruby Java MongoDB Chef + Puppet		CGI HCL TATA TATA CONSULTANCY SERVICES HARMAN T Systems KPMG Cognizant Infosys Tech Mahindra SOGETI Avanade PwC REPLY Capgemini Robotron MOQdigital
		Schneider Electric ABB OSI Rockwell Automation ActionPoint complement Johnson Controls Honeywell SAP Siemens Atos Worldline DUNAV NET Schlumberger COPADATA Relayr
		MESH SYSTEMS Uii TechData INGRAM MICRO AT&T ICT+
		ST RENESAS CISCO Qualcomm Cradlepoint ADVANTECH Panasonic MOXA NEXCOM BECKHOFF FUJITSU DELL libellium embedded systems Toradex ARBOR

Industrial IoT leadership



MindSphere

Ability

PlantWeb

EcoStruxure

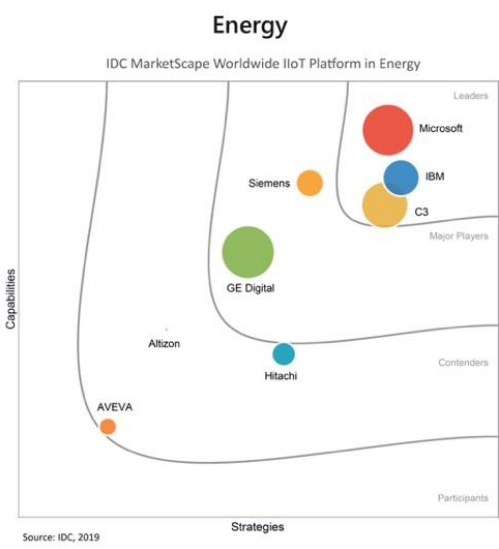
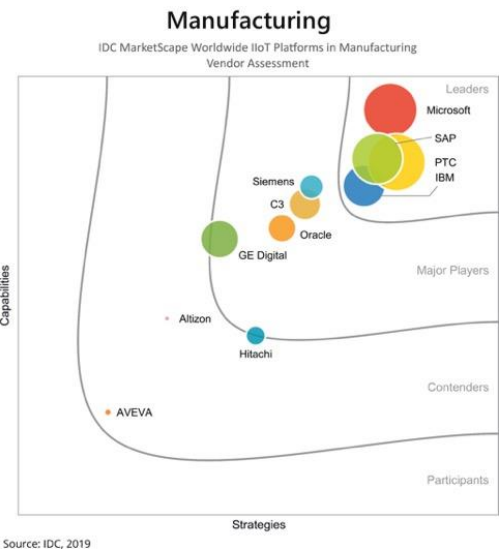
FactoryTalk

Sentience

Yokogawa's IIoT Platform

Leonardo

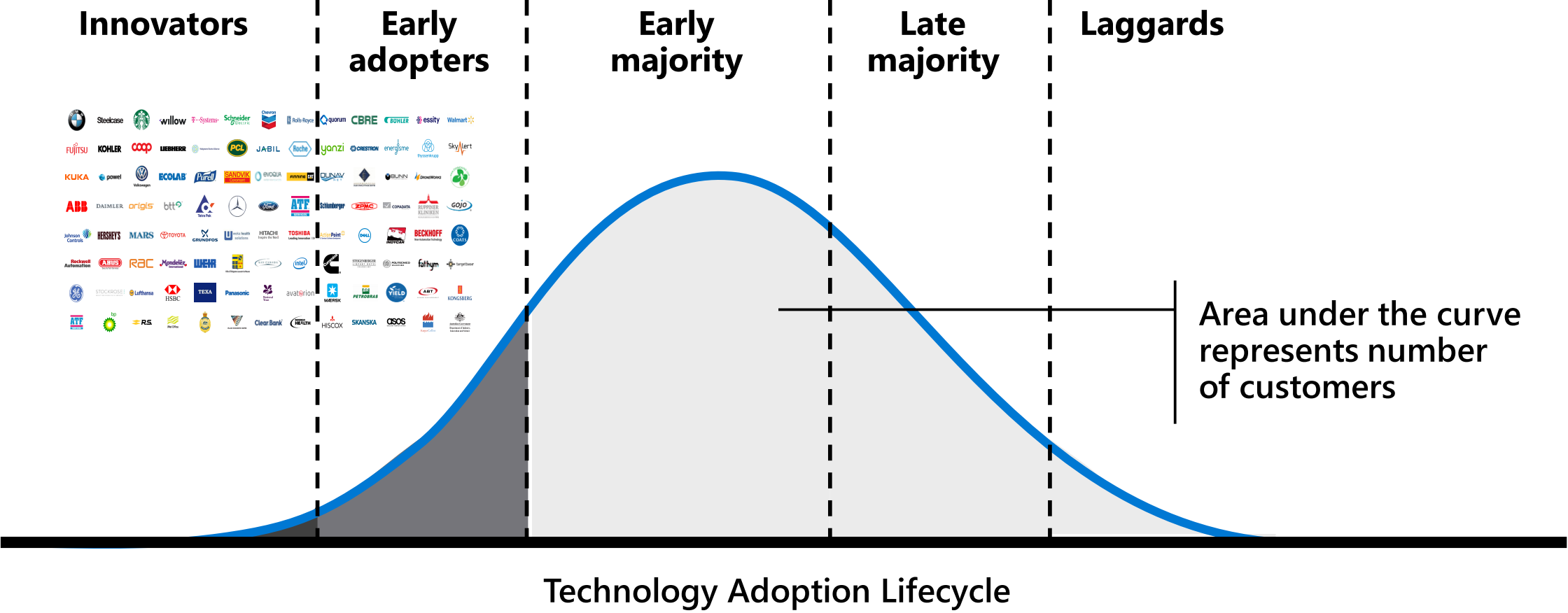
Armstrong



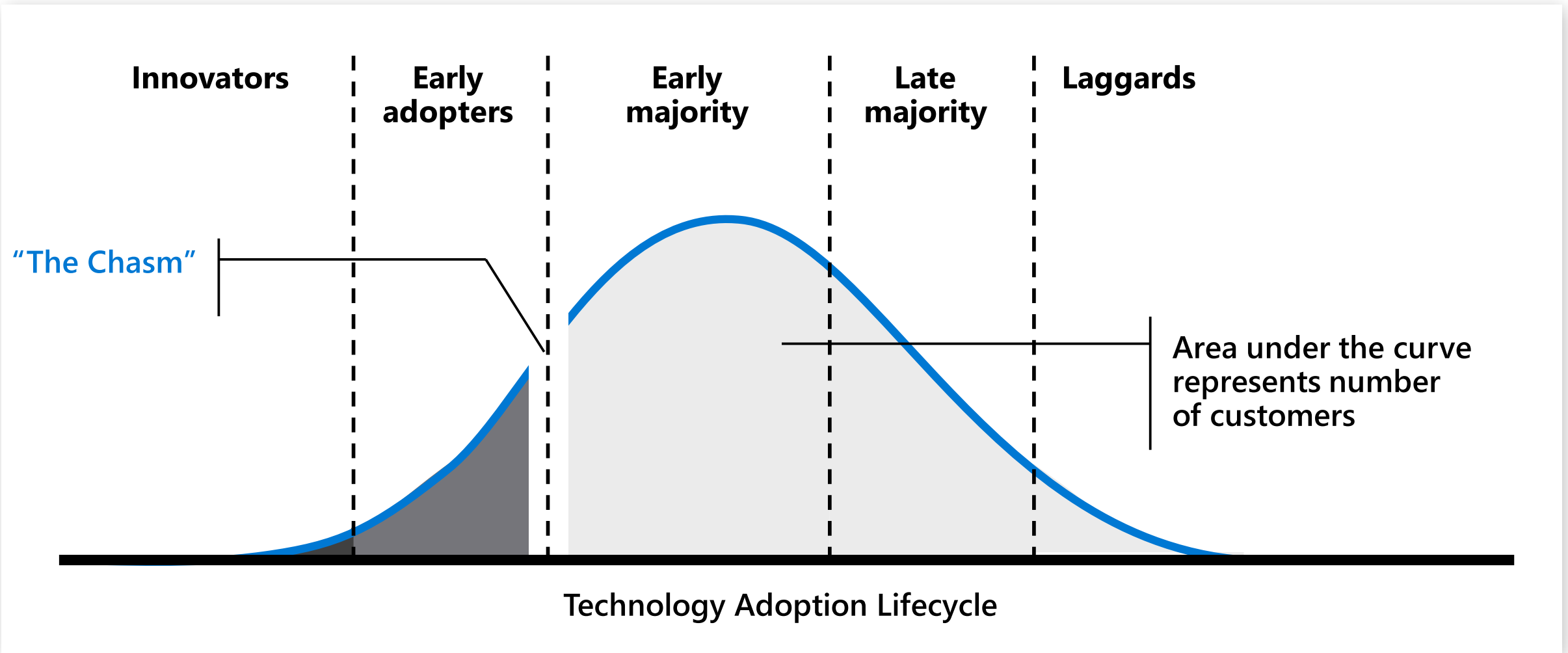
Thousands of Azure IoT customers

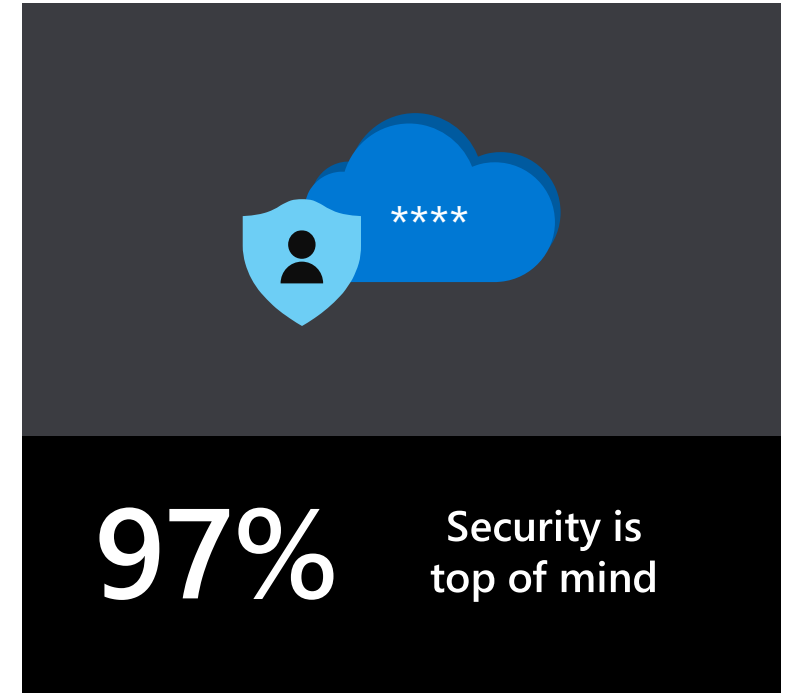
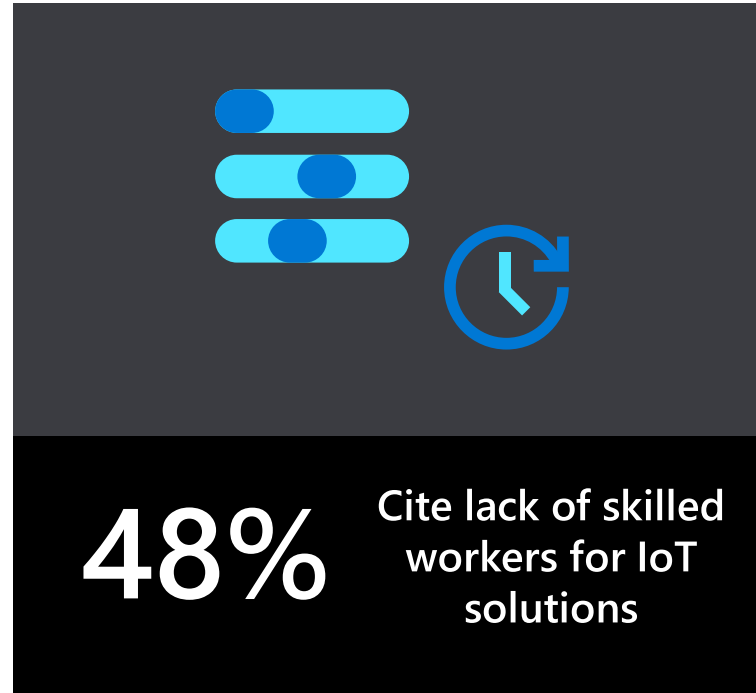
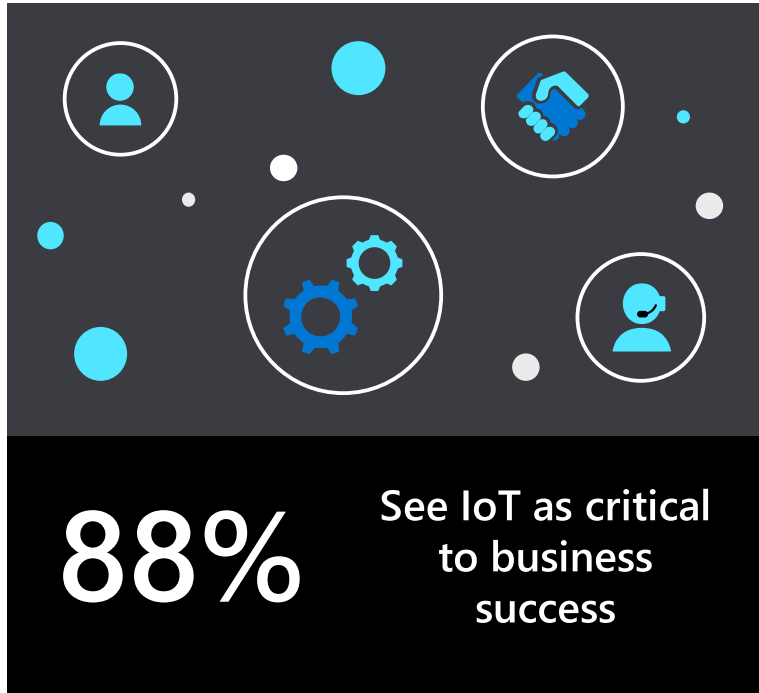
Technology adoption lifecycle



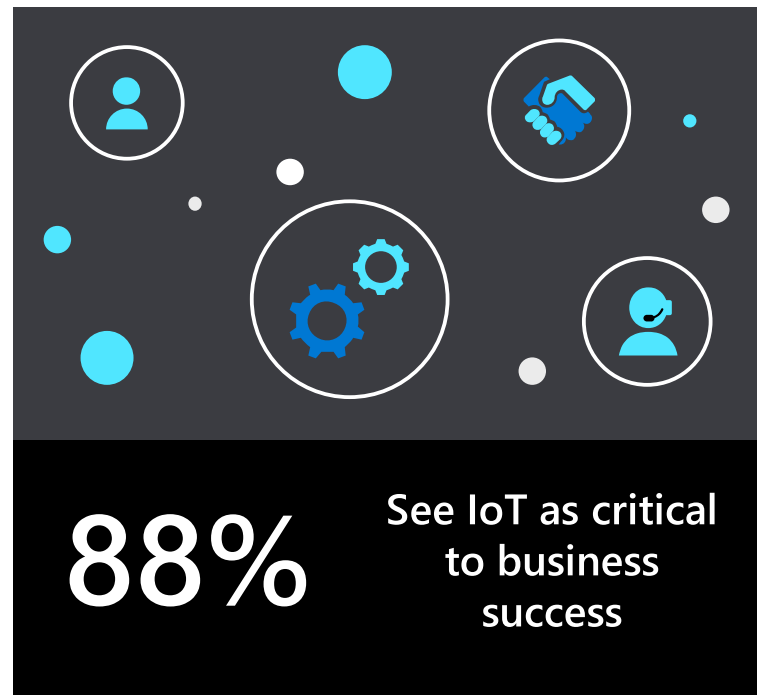
IoT is crossing the chasm and going mainstream



What we learned from customers in our IoT Signals survey















The need for comprehensive IoT services



Microsoft's comprehensive IoT product portfolio



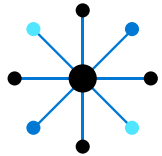
Azure Security Center for IoT

Azure IoT Priority Verticals							
	Manufacturing	Retail	Agriculture	Energy	Smart Cities	Healthcare	Transportation
Azure IoT Solutions		Azure IoT Central (SaaS)		Azure IoT Reference Architecture & Accelerators (PaaS)			Dynamics Connected Field Service (SaaS)
Azure Services for IoT		Azure IoT Hub Azure IoT Hub Device Provisioning Service Azure Digital Twins Azure Time Series Insights Azure Maps	Azure Stream Analytics Azure Cosmos DB Azure AI Azure Cognitive Services Azure ML Azure Logic Apps		Azure Active Directory Azure Monitor Azure DevOps Power BI Azure Data Share Azure Spatial Anchors		
IoT & Edge Device Support		Azure RTOS Azure Sphere Azure IoT Device SDK Azure IoT Edge Data Box Edge	Windows IoT Azure Certified for IoT—Device Catalog Azure Stream Analytics Azure Storage		Azure ML Azure SQL Azure Functions Azure Cognitive Services		



IoT Hub

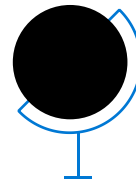
Platform as a Service (PaaS)



Establish bi-directional communication with billions of IoT devices



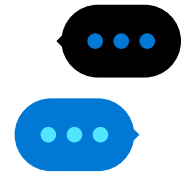
Enhance security with per device authentication



Provision devices at scale with IoT Hub Device Provisioning Service



Manage devices at scale with device management



Multi-language and open source SDKs

Connect, Manage and Monitor millions of devices at scale

Rockwell
Automation



Rolls-Royce

ECOLAB®

Schneider
Electric

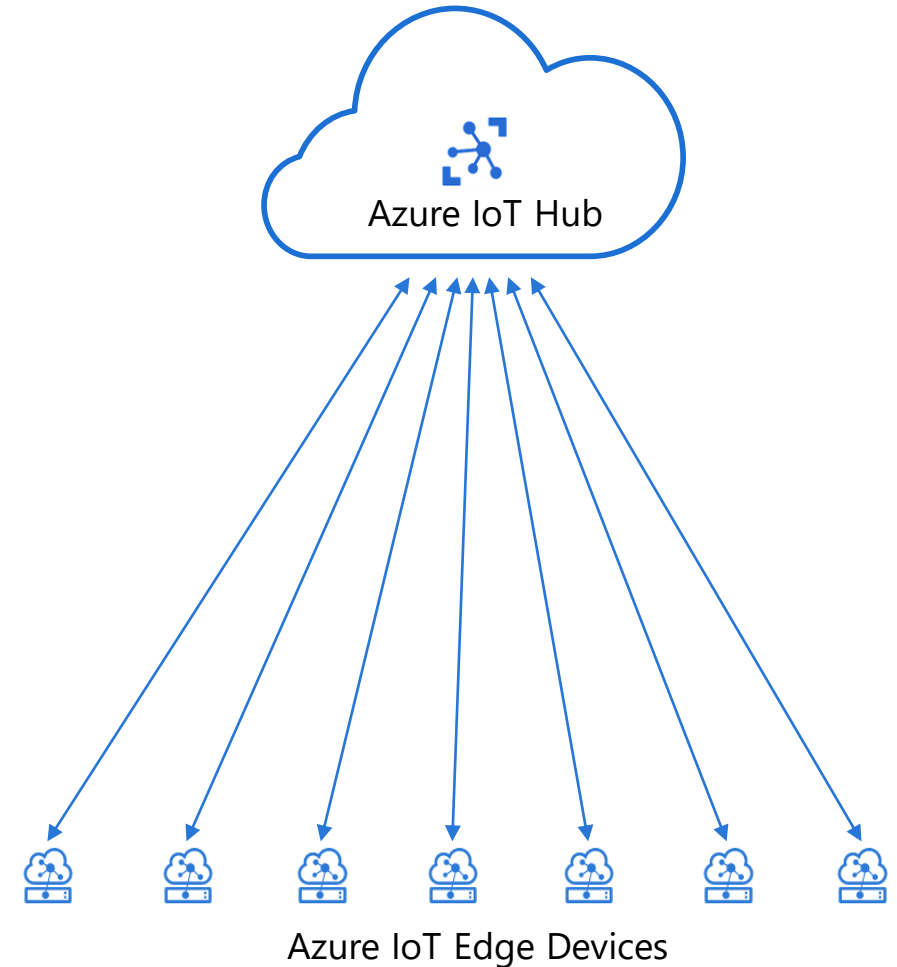
Azure IoT Edge

Run Azure AI, Azure Services & Custom Services directly on IoT devices

Azure IoT Edge

- Open source, cross platform, container-based edge runtime
- Run Azure services & your own code on IoT class and larger devices – fully extensible
- Manage the devices and IoT Edge workloads centrally
- Supports offline operation
- Fully Visual Studio + Visual Studio Code developer support
- Azure DevOps + Jenkins CI/CD support
- **Over 80 Azure Certified for IoT, 3rd party IoT Edge devices**

NEW





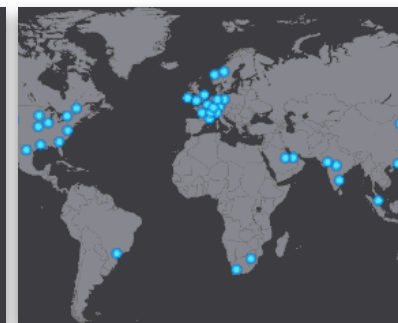
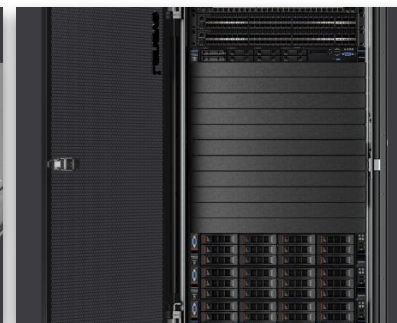
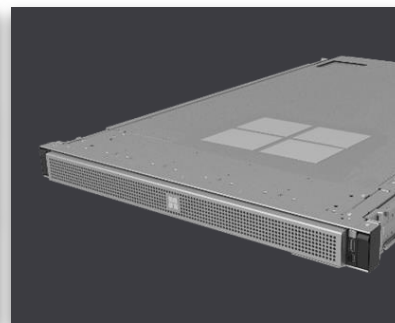
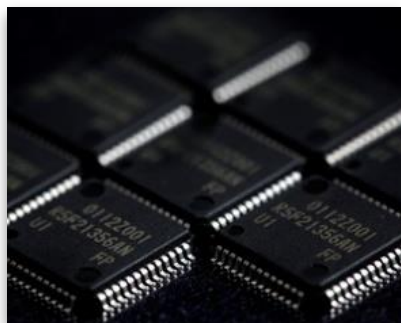
Cognitive Services at the Edge DEMO

Maarten Struys
Sr. IoT Technical Specialist

IoT in Action



Microsoft's comprehensive IoT & Edge offerings



Sensors + Control

Sensors to Interactive

Integrated Platform

Global scale processing

Microcontroller

[Azure RTOS & Azure Sphere](#)

Integrated Circuit designed to govern a specific operation in an embedded system
Highly-secured, connected MCU
Azure Sphere Linux OS for modern MCUs
Included Azure IoT Device SDK

IoT Devices

[Azure IoT Device SDK](#)

Endpoint devices such as appliances, vehicles, or factory machines that connect, interact and exchange data
1300+ devices, 300+ partners - all certified to work great with Azure IoT Services
Cross-platform and open source: Windows IoT, Linux, Android, iOS, RTOSs and more

Edge Devices

[Azure IoT Edge](#)

Devices that aggregate, process & provide gateway capabilities for IoT endpoints
Deploy and manage Azure Services in containers on any IoT device
AI, AzureML, Azure Stream Analytics and more
Cross-platform and open source: Windows IoT, Linux

Edge Appliances

[Azure Stack Edge](#)

Integrated appliances that provide a subset of cloud edge roles, such as ML-inferencing
Azure Stack Edge: AI-Enabled, Storage and compute Azure Edge appliance

Edge Stack

[Azure Stack Hub](#)

Scalable solutions that provide a full cloud stack, including IaaS and PaaS capabilities
Edge and Disconnected Scenarios
Regulatory Requirements
Cloud app model on-premises

Hyperscale Cloud

[Edge Regions](#)

First-party cloud regions
Full Range Hyperscale Cloud Services
Tiered Service availability: Heroes > Hubs > Satellites
Open Source Based Services & Tools

Most specialization

Full Spectrum of Cloud + Edge Form Factors

Fewest form factors

Fewest services

Intentional & Appropriate Azure Service Availability

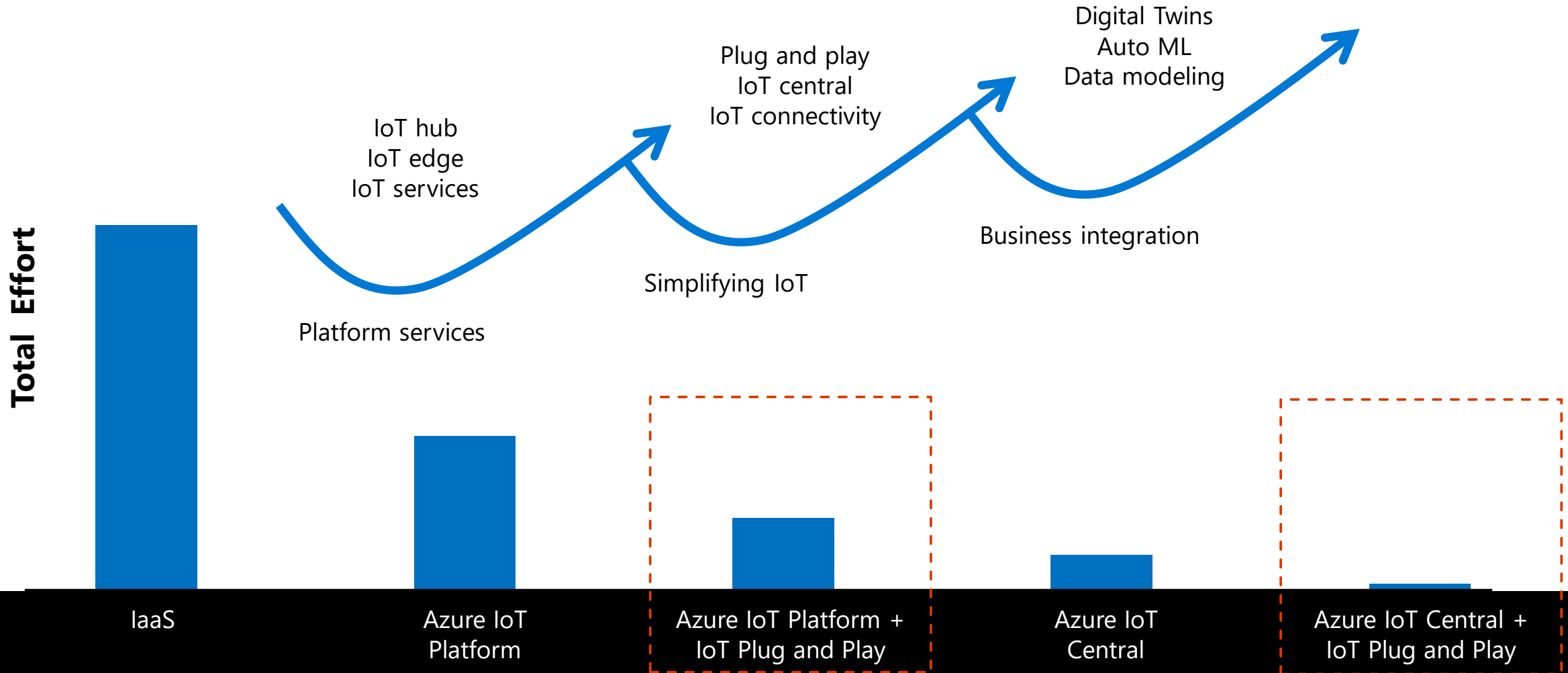
Most services

The need for solutions that enable rapid application development without cloud development skills



Accelerating IoT adoption

The total effort to build and operate an IoT Solution is rapidly decreasing



IoT Central

A fully managed IoT app platform



App templates
for Industry Verticals



White labeling
your SaaS – your brand



Azure IoT Edge
support



Multitenancy
Support



API
Support



IoT Plug and
Play Support



New 2-tiered pricing model
announced, based on
message volume

Existing solution builders

MESHSYSTEMS™

cradlepoint
Connect Beyond

sage**greenlife**

flex



C.H. ROBINSON

umec



FOOTMARKS



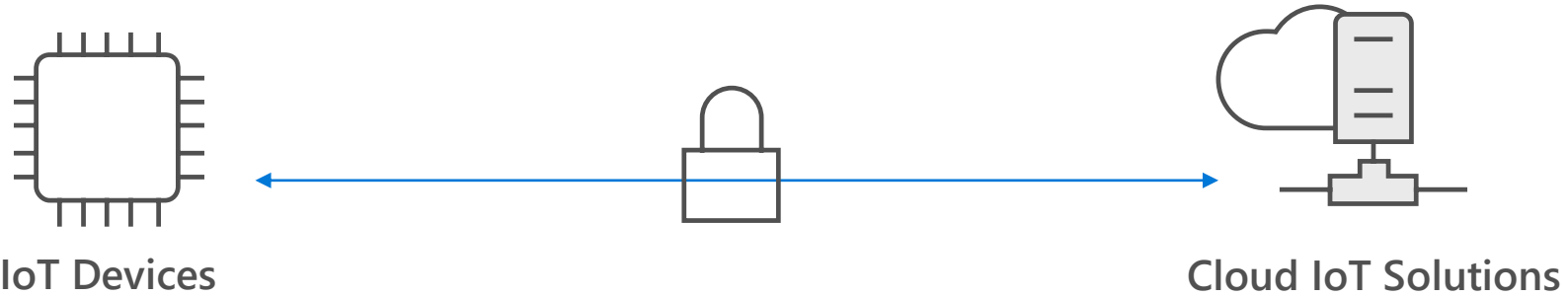
jda.



BOSCH

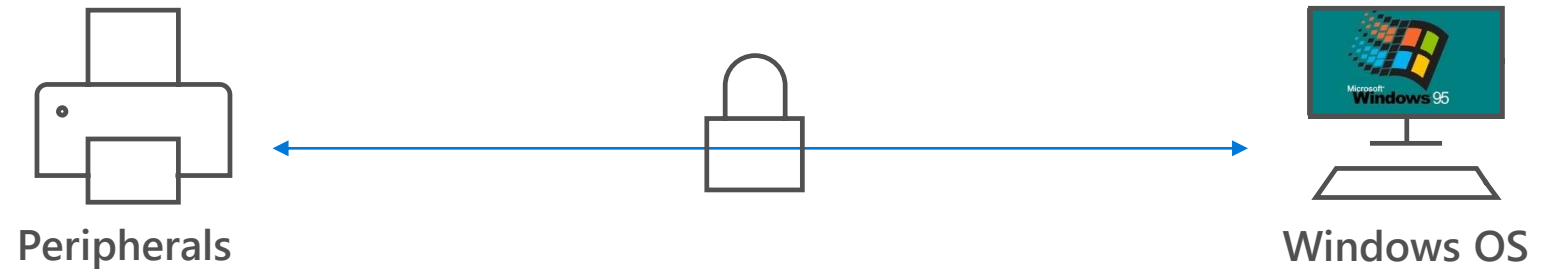


IoT Plug and Play – IoT Today



Tight coupling between software on device and IoT solution in the cloud

We had a similar challenge in the past...





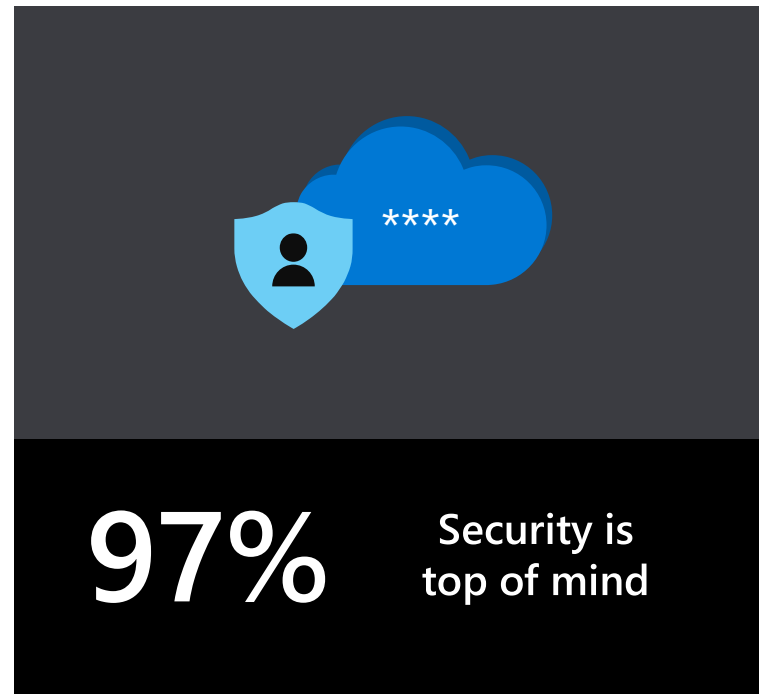
Unlocking IoT's Potential DEMO

Nicolas Vasseur
IoT Technical Specialist

IoT in Action



The need for turnkey IoT security solutions





Protect all your IoT assets from threats

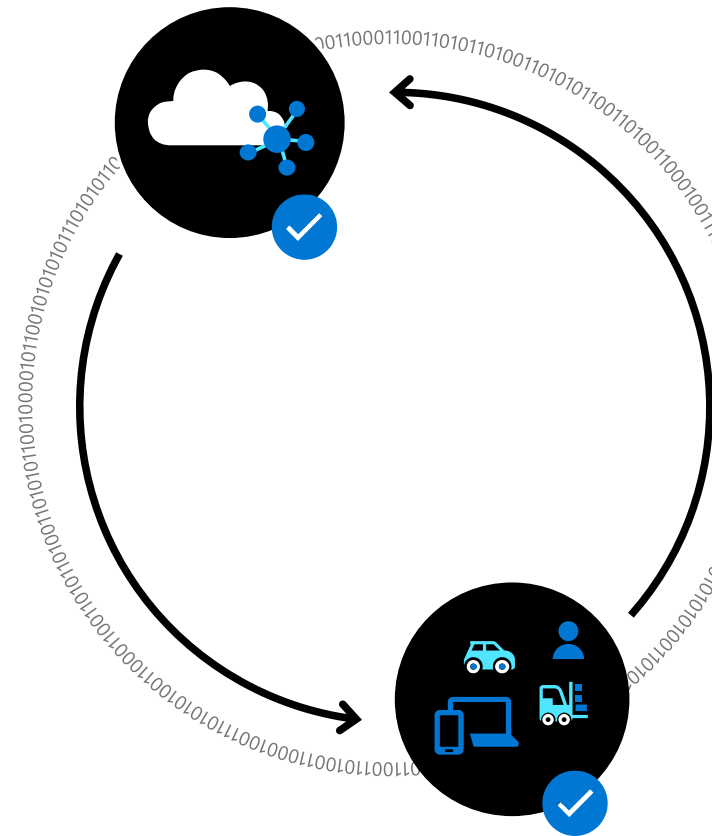


Azure Security Center for IoT:

Security posture and monitoring, alerts, and response

IoT Services

- Security by design in **IoT Hub** and **IoT Central**
- Scalable, policy-based access control
- Standards-based mutual authentication
- Industry-leading reliability and resilience



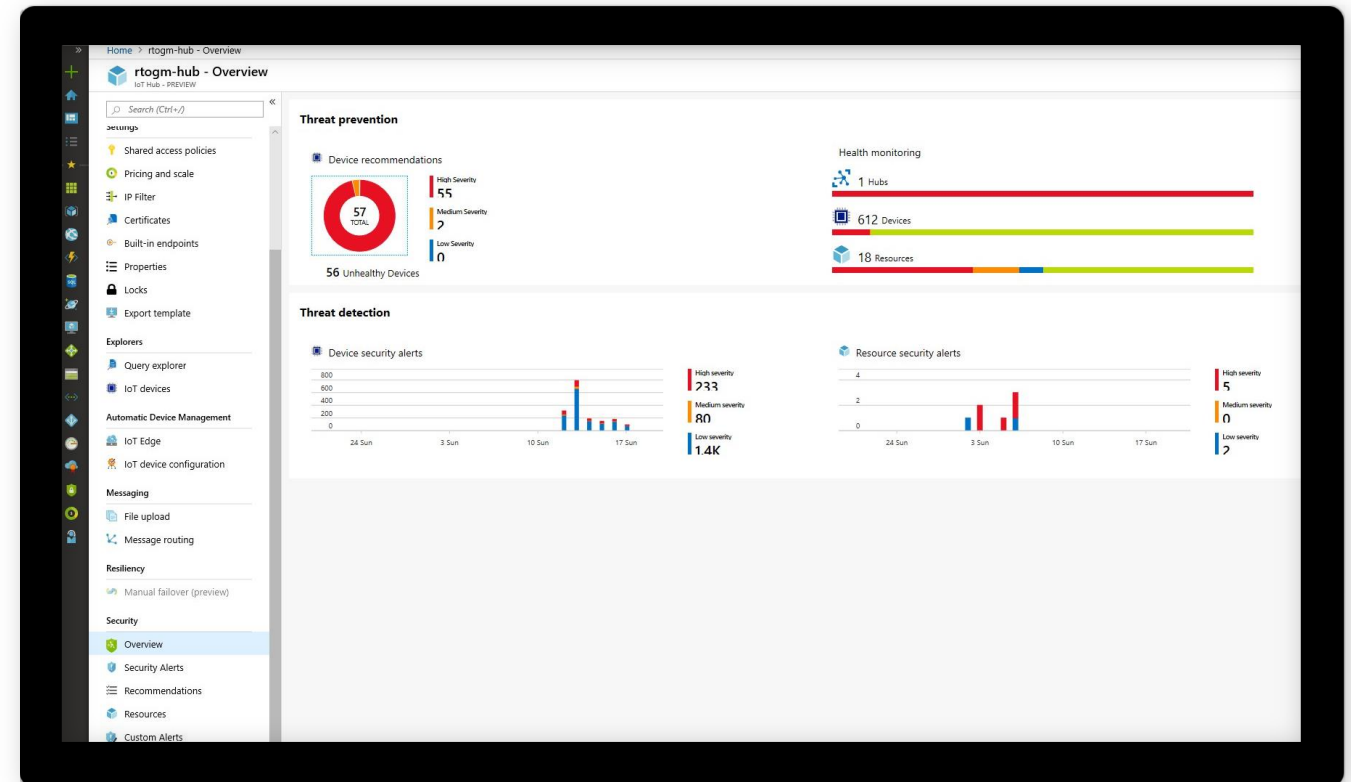
Devices

- Threat monitoring and mitigation across devices
- **IoT Devices**
- **IoT Edge devices and workloads**
- **Azure Sphere**



Azure Security Center for IoT

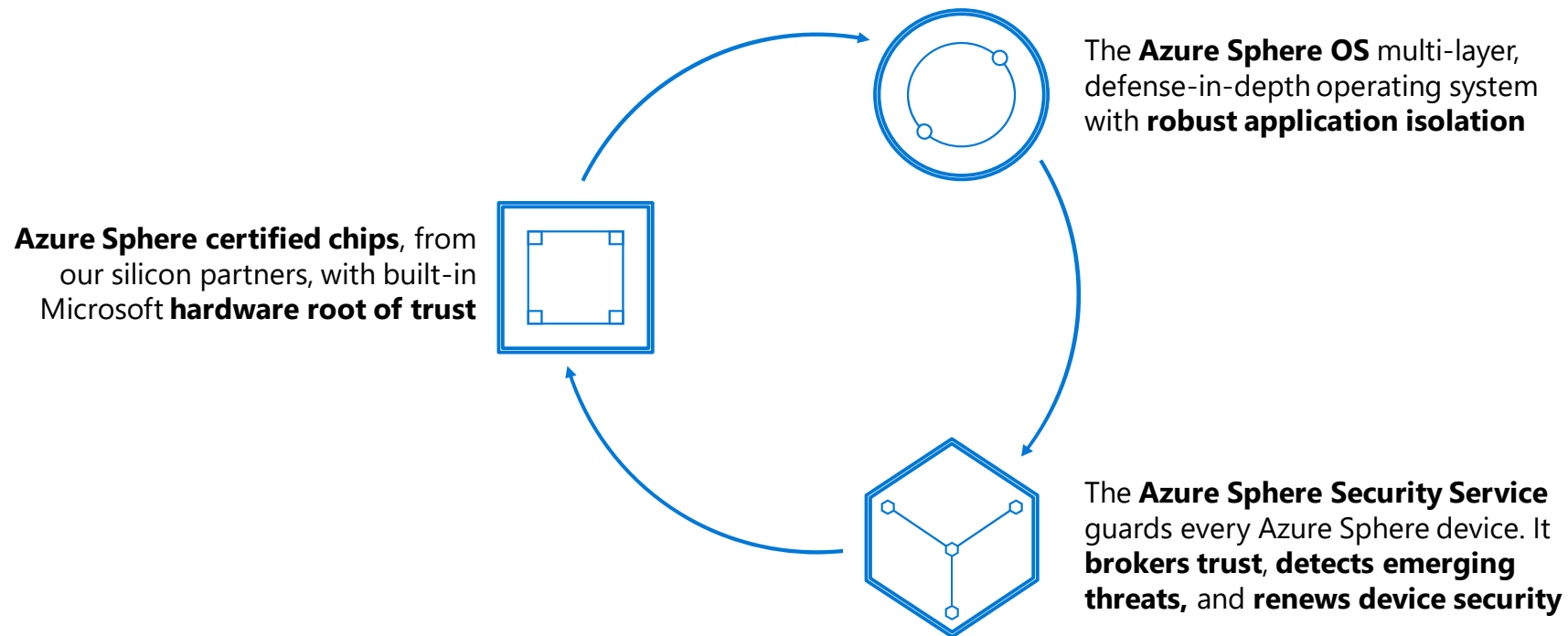
- ✓ **Visibility into security posture** and state of your **IoT Solution**
- ✓ **Single pane of glass** to manage IoT and hybrid cloud security infrastructure
- ✓ **Actionable, prioritized alerts** to respond to any potential compromises of your IoT solution
- ✓ **Integrate with Azure Sentinel** or other SIEMs to streamline threat mitigation
- ✓ **Define custom alerts** based on advanced queries





Azure Sphere

An end-to-end solution for securing IoT devices. Integrated hardware, software, and cloud services work seamlessly together and deliver active security by default.



Ongoing servicing with over 10 years of security and OS updates delivered directly to each device by Microsoft

Customers



Giving Starbucks the confidence to connect their mission-critical equipment to streamline operations and to deliver quality customer experiences.



Ensuring Gojo's data integrity while monitoring hygiene compliance in hospitals.

LEONI

Helping Leoni secure their intelligent cable systems that manage energy and data



Unlocking IoT's Potential Q&A

Giovanni Gatto
Azure Sphere Specialist

IoT in Action





Thank you