Microsoft

IoT in Action

#IoTinActionMS

Microsoft

Soren LAU

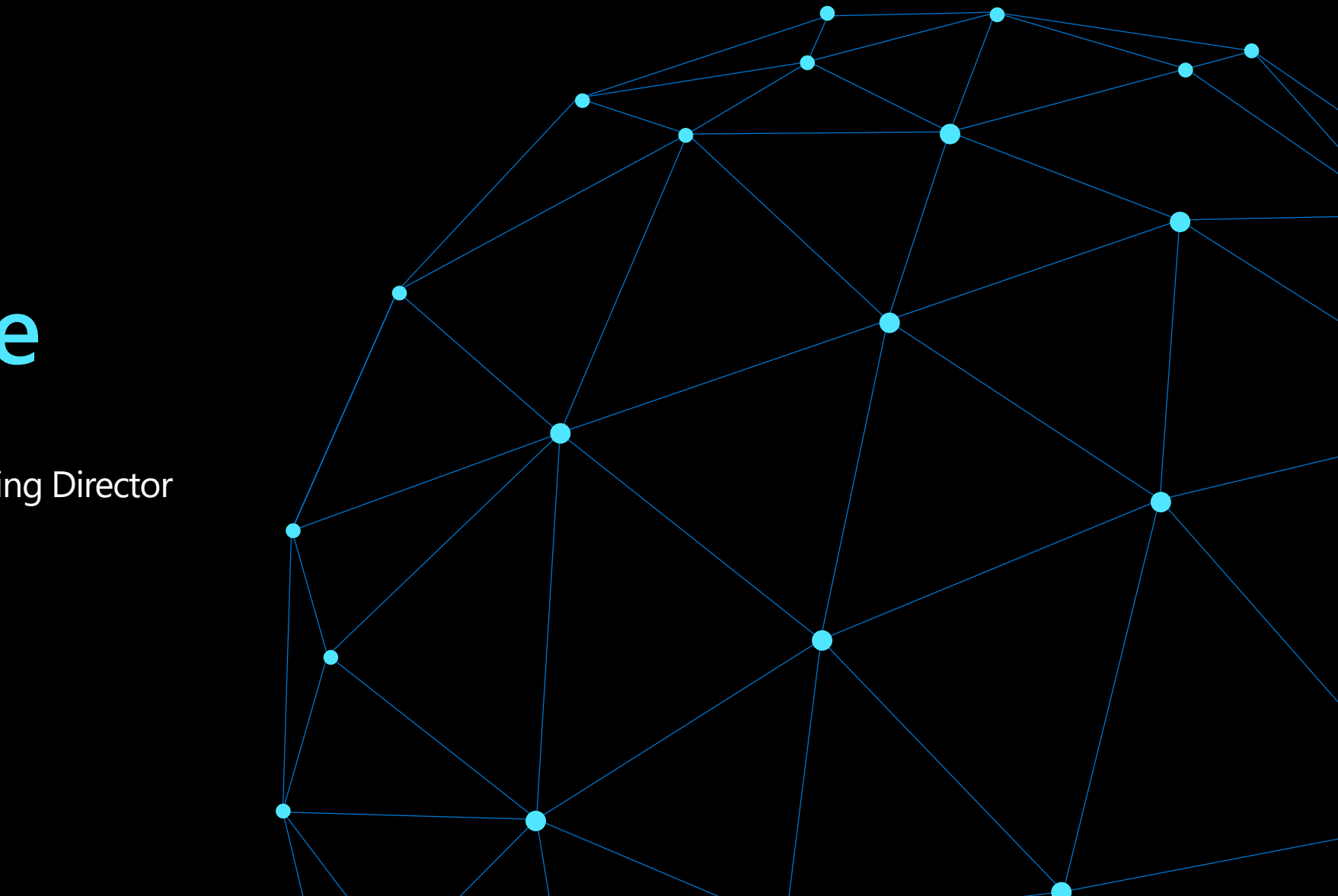
General Manager
IoT Sales EMEA

IoT in Action

Microsoft Azure

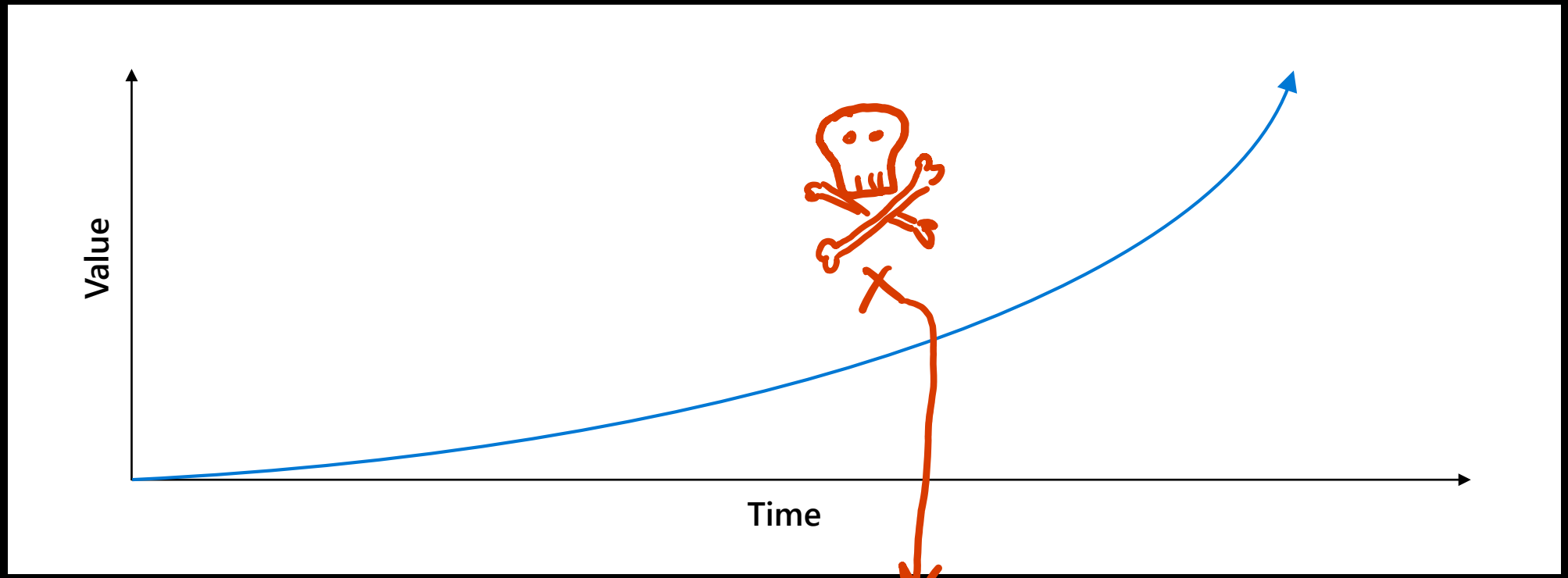
Azure Sphere

Galen Hunt
Distinguished Engineer and Managing Director
Microsoft Azure Sphere



- Reduce costs
- Delight customers
- Streamline operations
- Create new business models

Planning your IoT deployment



PoC stage
slow climb in value

Production deployment
delivering real business value

Iteration
accelerating value through digital feedback loop

IoT attacks put businesses at risk

Devices bricked or held for ransom

Devices are used for malicious purposes

Data & IP theft

Data polluted & compromised

Devices used to attack networks

The cost of IoT Attacks

Stolen IP & other highly valuable data

Compromised regulatory status or certifications

Brand impact (loss of trust)

Recovery costs

Financial and legal responsibility

Downtime

Security forensics

97%

97% of enterprises call out security as a concern when adopting IoT

Source: IoT signals 2019

22%

enterprise customers are willing to pay 22% more for IoT cybersecurity

Source: Bain & Co. 2018

70%

and they would buy 70% more devices if security concerns were mitigated

Source: Bain & Co. 2018

Governments taking action

USA

- State legislation passed (CA, OR, NY, IL, MD)
- Several bills introduced to Congress
- NIST mandated to define multiple baselines

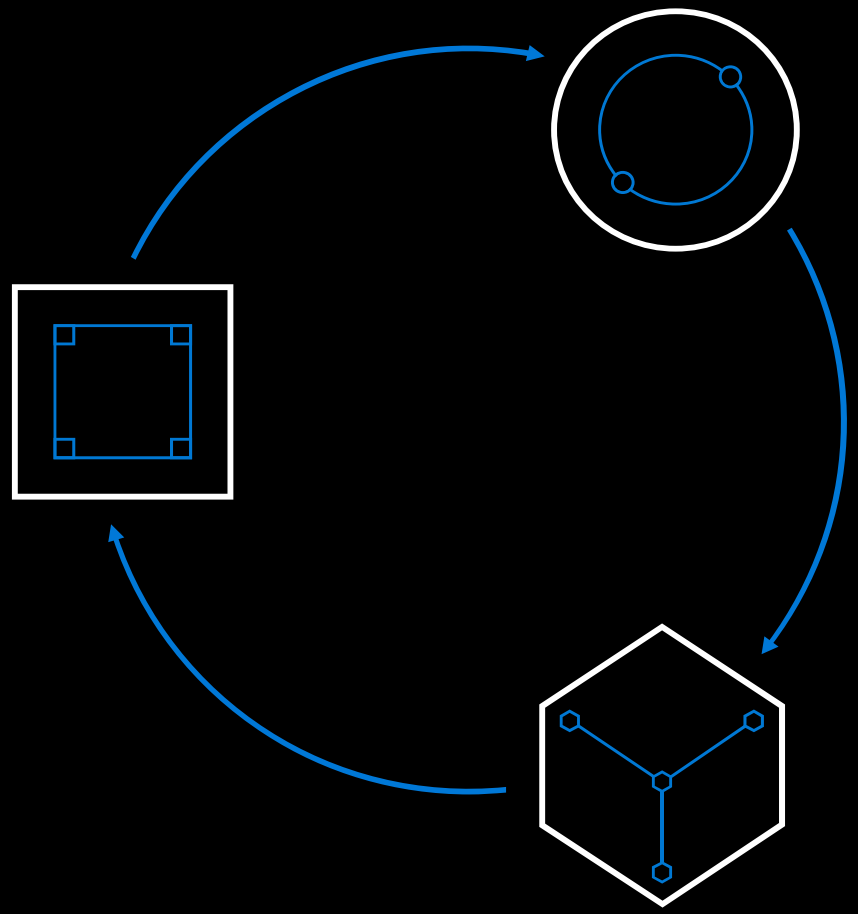
Europe/UK

- Security certifications under the EU Cybersecurity Act
- UK Code of Conduct informed ETSI Standard
- UK testing different consumer labels

APAC

- Singapore aims to define security guidelines
- Japanese campaign to hack consumer devices

Announcing General Availability TODAY: February 24, 2020



Microsoft Azure Sphere

Azure Sphere's mission is to empower every organization on the planet to connect and create secured and trustworthy IoT devices.

Secured connected devices require seven properties

Is your device highly secured or does it just have some security features?

Hardware
Root of Trust

Defense
in Depth

Small Trusted
Computing Base

Dynamic
Compartments

Certificate-Based
Authentication

Failure
Reporting

Renewable
Security

Secured connected devices require seven properties

Is your device highly secured or does it just have some security features?

Hardware Root of Trust

Is your device's identity and software integrity secured by hardware?

Defense in Depth

Does your device remain protected even if some security mechanism is defeated?

Small Trusted Computing Base

Is your device's security-enforcement code protected from bugs in application code?

Dynamic Compartments

Can your device's security improve after deployment?

Certificate-Based Authentication

Does your device authenticate itself with certificates?

Failure Reporting

Does your device report back errors to give you in-field awareness?

Renewable Security

Does your device software update automatically?

Secured connected devices require seven properties

Is your device highly secured or does it just have some security features?

Hardware Root of Trust

Defense in Depth

Renewable Security

Lack HROT?

Ask users to authenticate devices at deployment.

Lack Defense in Depth?

Ask customers to disconnect on a zero day.

Lack Renewable Security?

Roll trucks to restore every device by hand.

Meeting the seven properties is difficult and costly

Design and build a holistic solution

You're only as secure as your weakest link

You must stitch disparate security components into a gap-free, end-to-end solution.

Technology

Recognize and mitigate emerging threats

Threats evolve over time

You must have the ongoing security expertise to identify and create the updates needed to mitigate new threats as they emerge.

Talent

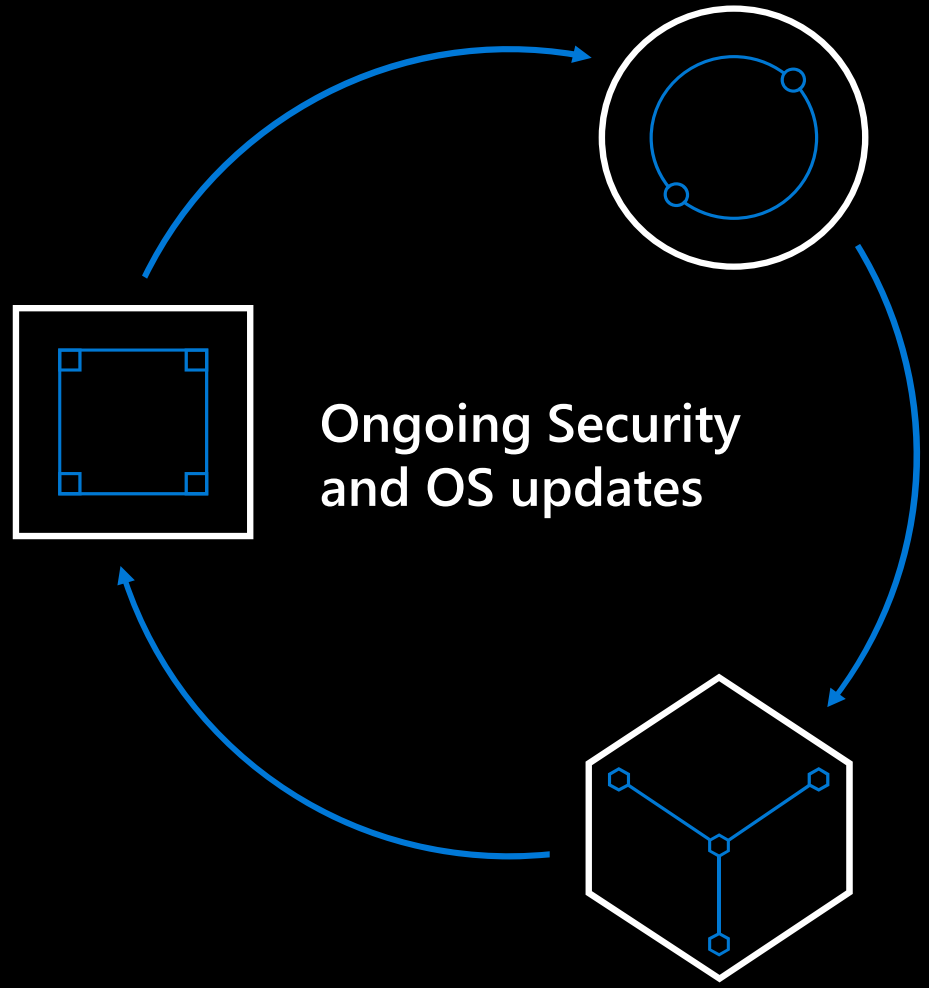
Distribute and apply updates on a global scale

Update efficiency is critical

You must have the infrastructure, logistics, and operational excellence to deliver and deploy updates globally to your entire fleet of devices in hours.

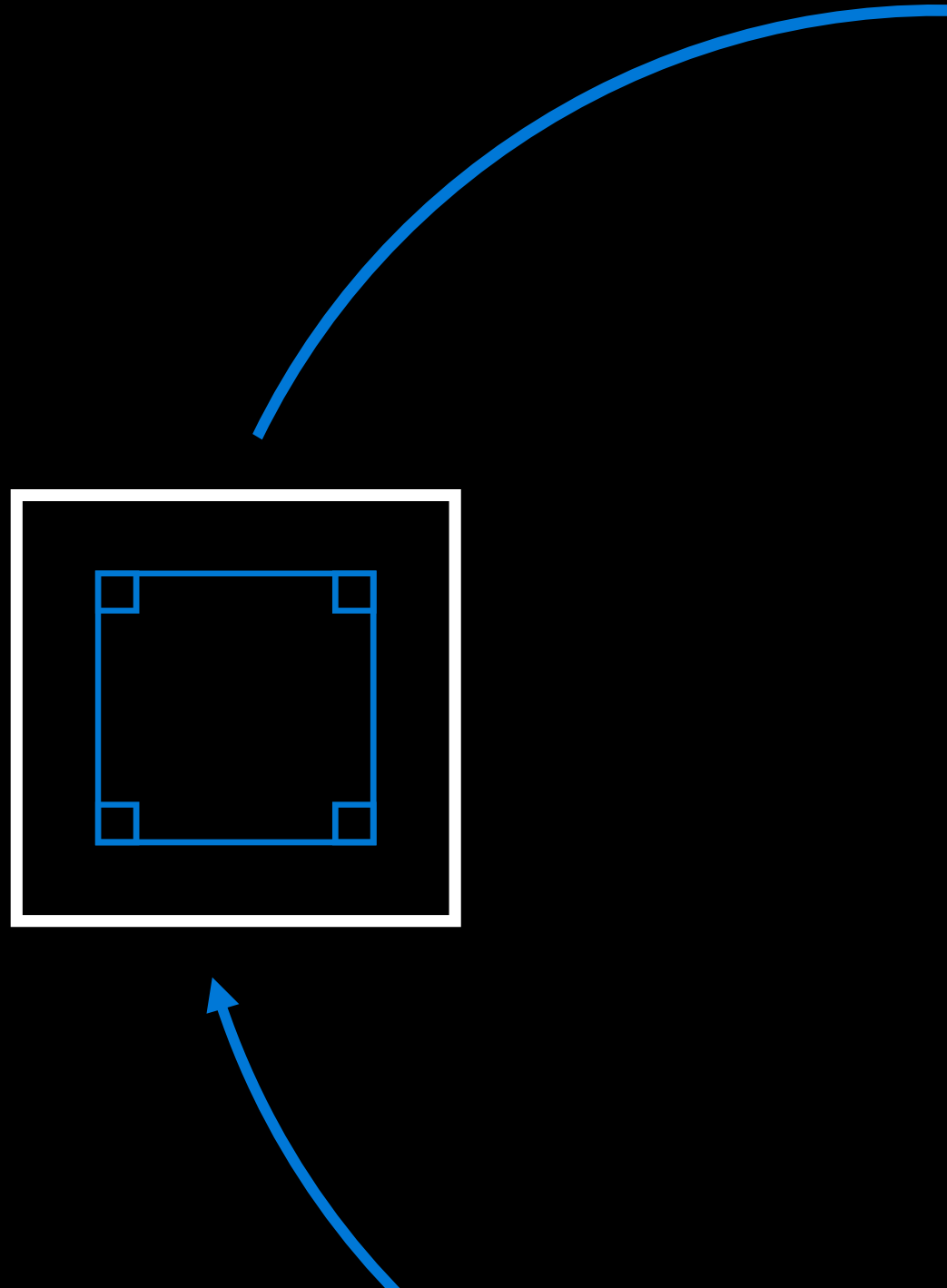
Tactics

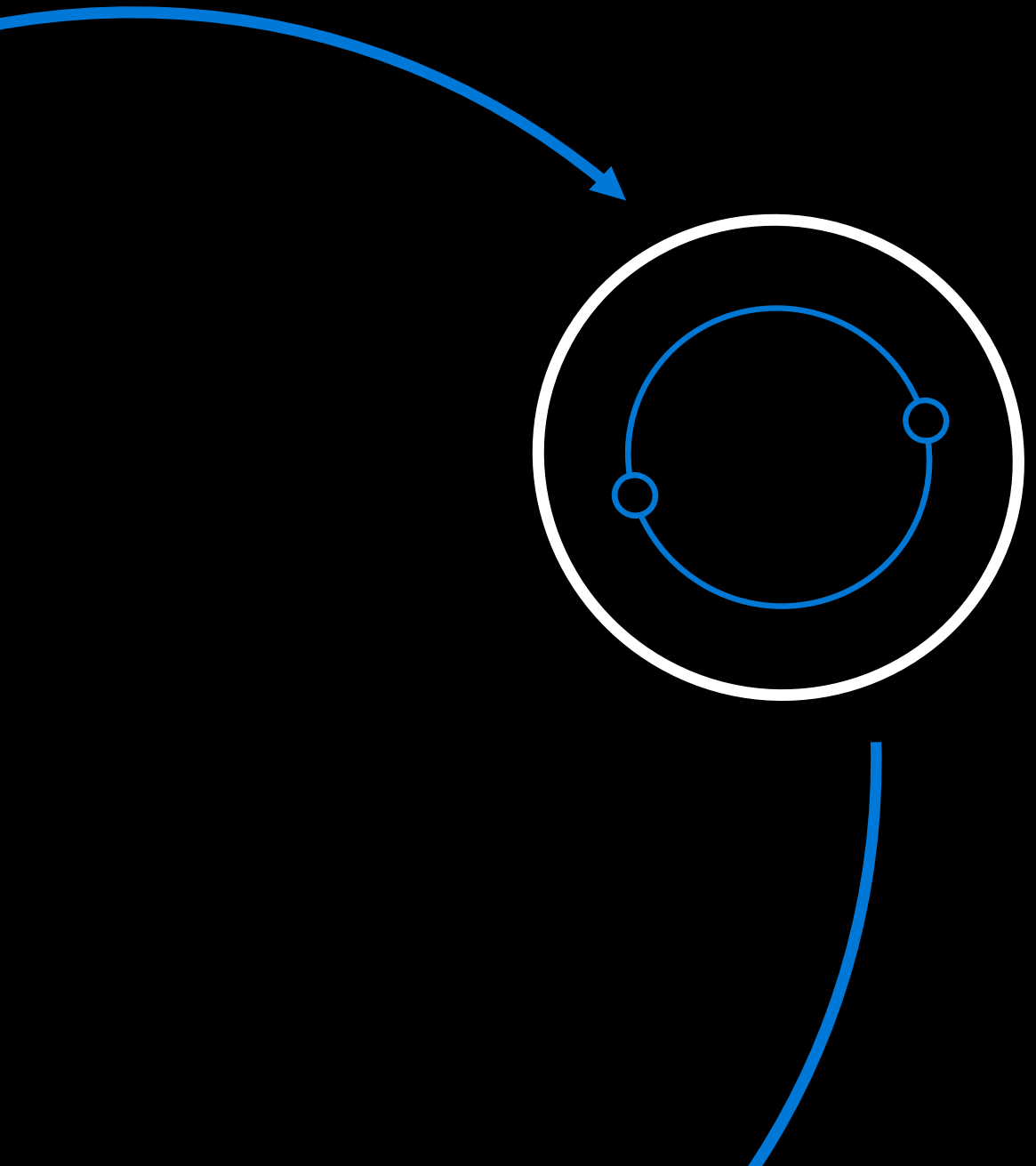
Microsoft Azure Sphere



Over 10 years of security and OS updates delivered directly to each Azure Sphere device by Microsoft

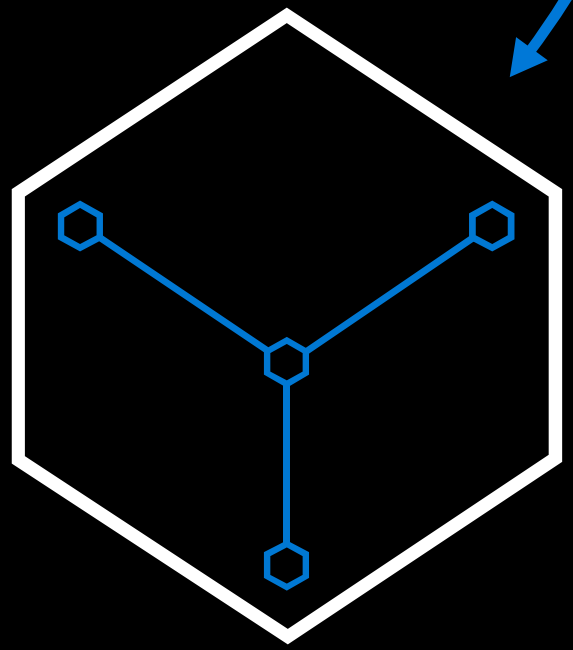
Azure Sphere certified chips,
from silicon partners, with built-in Microsoft security technology provide connectivity and a dependable **hardware root of trust.**





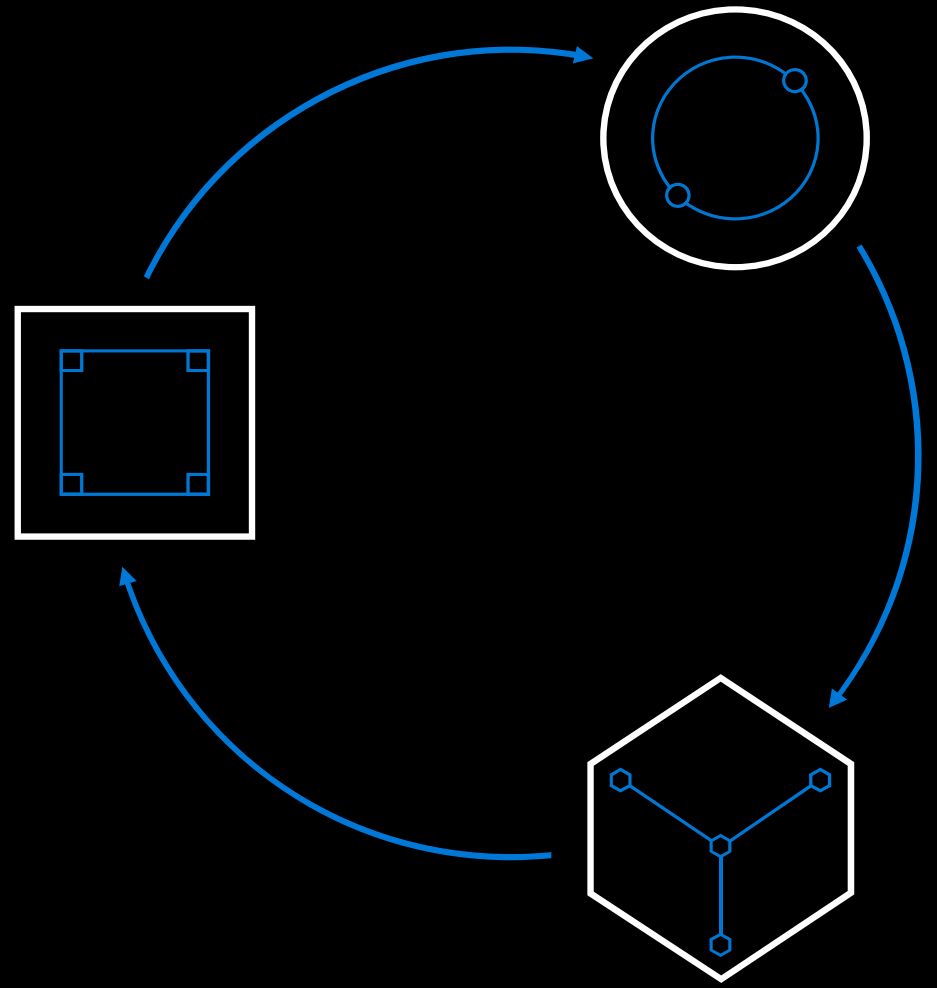
The Azure Sphere Operating System

a multi-layered defense in depth operating system, with ongoing updates, creates **a trustworthy platform** for IoT experiences.



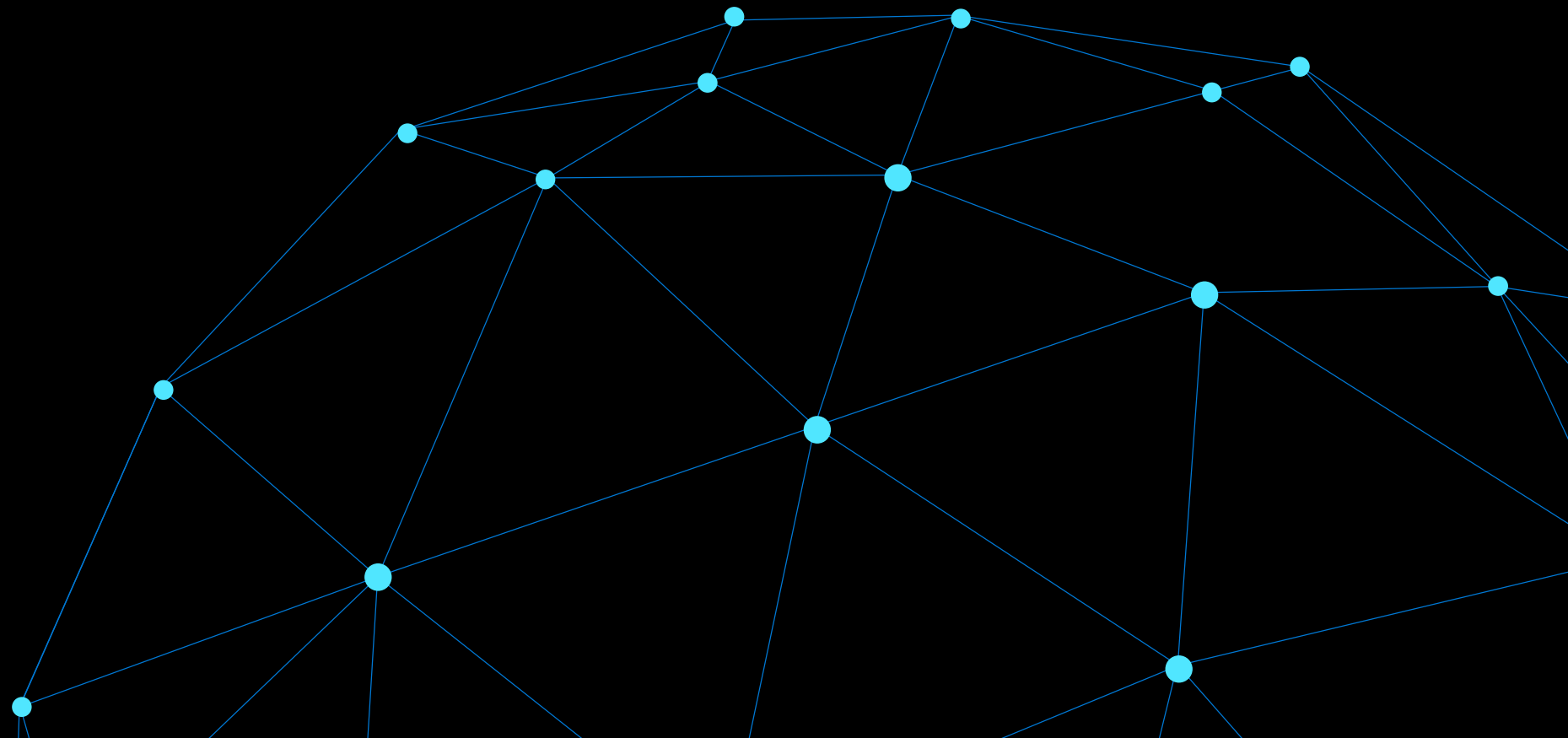
The Azure Sphere Security Service

guards every Azure Sphere device; it **brokers trust** for device-to-device and device-to-cloud communication, **detects emerging threats**, and **renews device security.**



Microsoft security experts deliver ongoing OS and security updates to every Azure Sphere device

Investing in the future of trustworthy IoT



Investing in silicon partners to enable choice and flexibility

AVAILABLE NOW

MT3620

MCU form factor

Wi-Fi-enabled

MEDIATEK

COMING SOON

Part of the i.MX8 family

Optimized for performance and power:

- Richer experiences
- Artificial Intelligence (AI)
- Graphics
- Video

NXP

COMING SOON

Chip details to be disclosed

Built for anytime, anywhere connectivity:

- Cellular enabled
- Support for ultra-low power scenarios

QUALCOMM®

Investing diverse hardware ecosystem

A growing network of hardware ecosystem partners (ODMs & IDHs)

AVNET

seeed studio

qiio

AI-Link

USI

Development kits:

Help organizations prototype quickly

Modules:

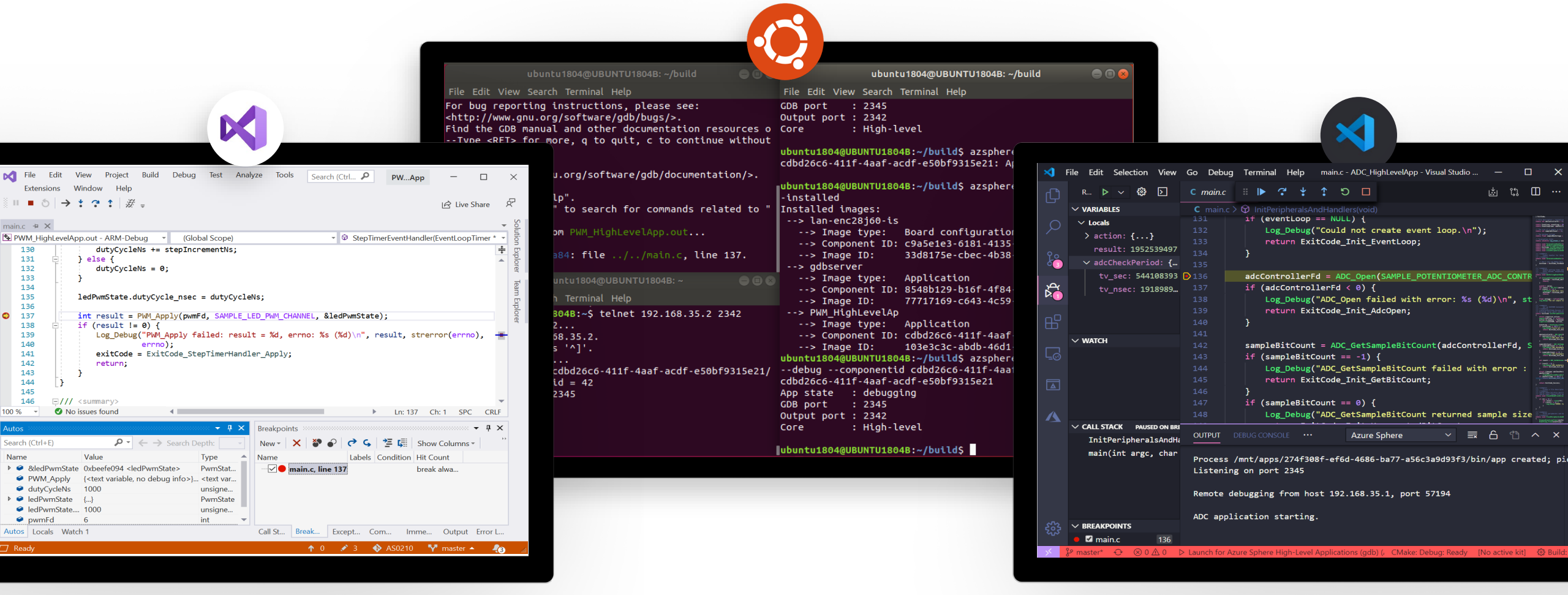
Speed up time to market for device makers

Guardian modules:

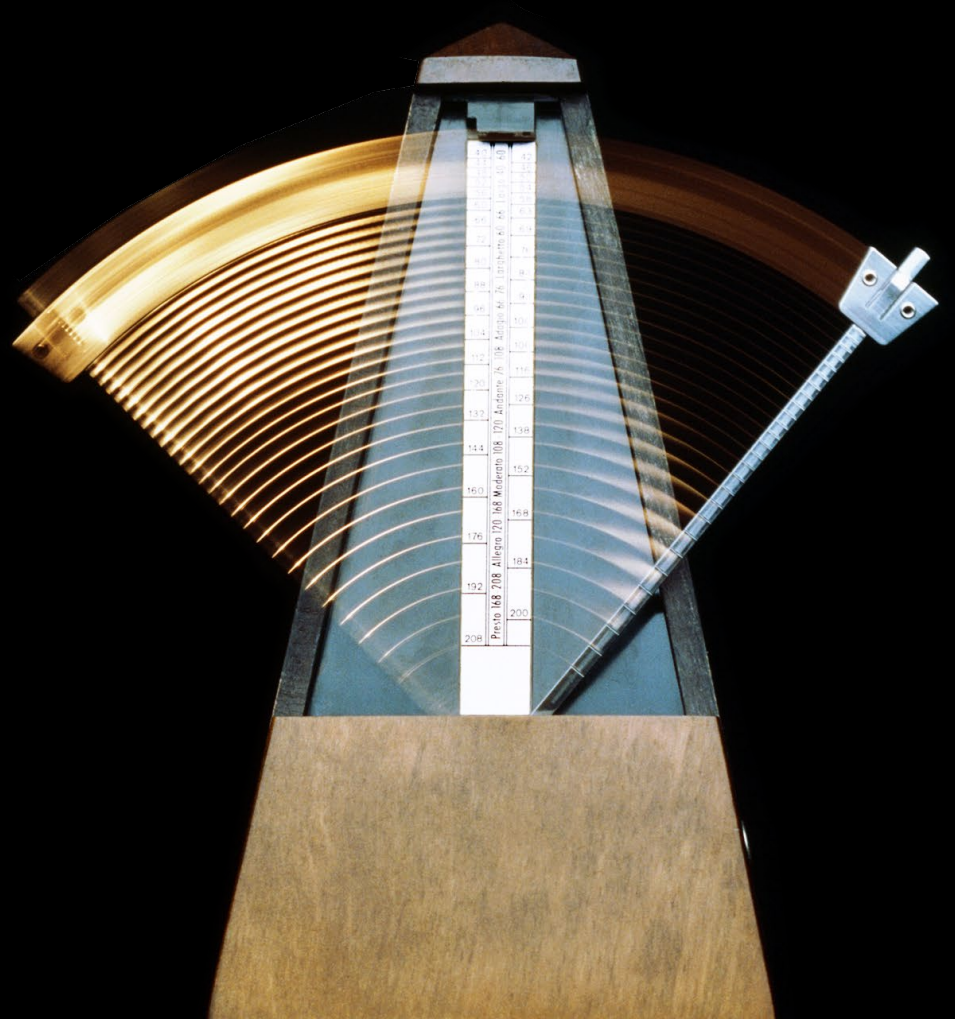
Enable secured connectivity of existing equipment

Investing in secured connectivity to existing mission-critical equipment

Investing in the right tools for developers



Investing in the secure environment for running an RTOS or bare-metal code



Built to work with Azure 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 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

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Celebrating customer and partner innovation

Celebrating customer and partner innovation

innodisk

elettrone

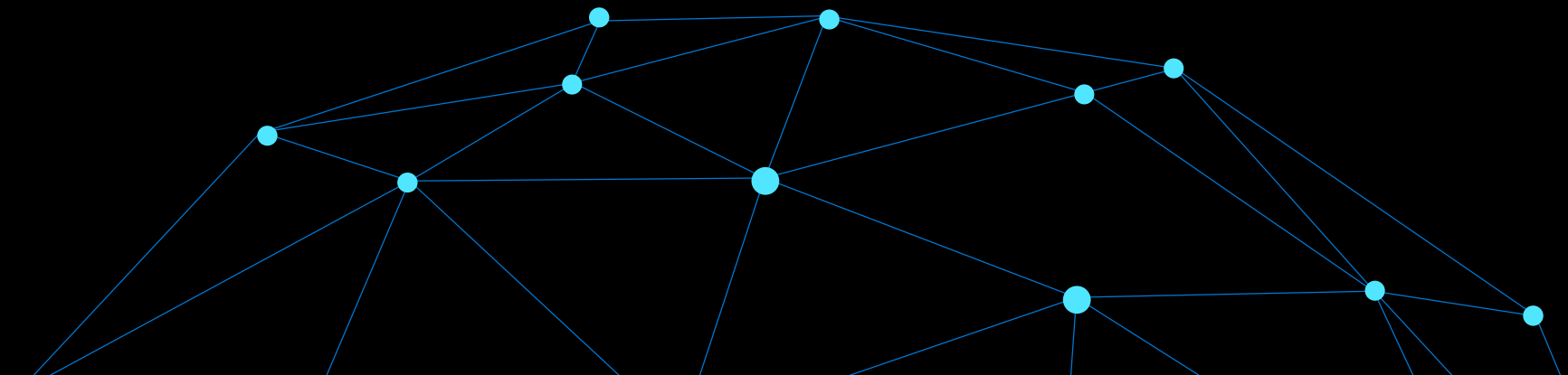
qiio

Microsoft

FLOWATER

GOJO

SYSINNO



innodisk

Innodisk
InnoAGE Azure Sphere SSD Solution

The cloud and edge storage solution designed for IoT solutions

INDUSTRY

Automation

qiio
q200 Cellular Edge Solution with Azure Sphere

Enabling security from the cloud to the cellular edge

INDUSTRY

Retail

Consumer

Healthcare

Telecomm

elettrone

Elettrone
Energy and Utilities Monitoring Solution

Intelligent energy

INDUSTRY

Consumers and smart buildings

Gojo Purell
Azure Sphere Hand Sanitization Solution

Hand hygiene intelligence for Healthcare

INDUSTRY

Healthcare

Microsoft Azure

Microsoft Data Centers
Securing critical infrastructure with Azure Sphere

Securely connecting vital mechanical systems, electrical systems, air handling units, power distribution units and more

INDUSTRY

Smart buildings

Sysinno
iAeris Intelligent Sensor Solution

Intelligent real-time
air quality monitoring

INDUSTRY

Automation

Public transportation

Healthcare

Public places

FLOWATER

Flowater

Connected Water Dispenser powered by Azure Sphere

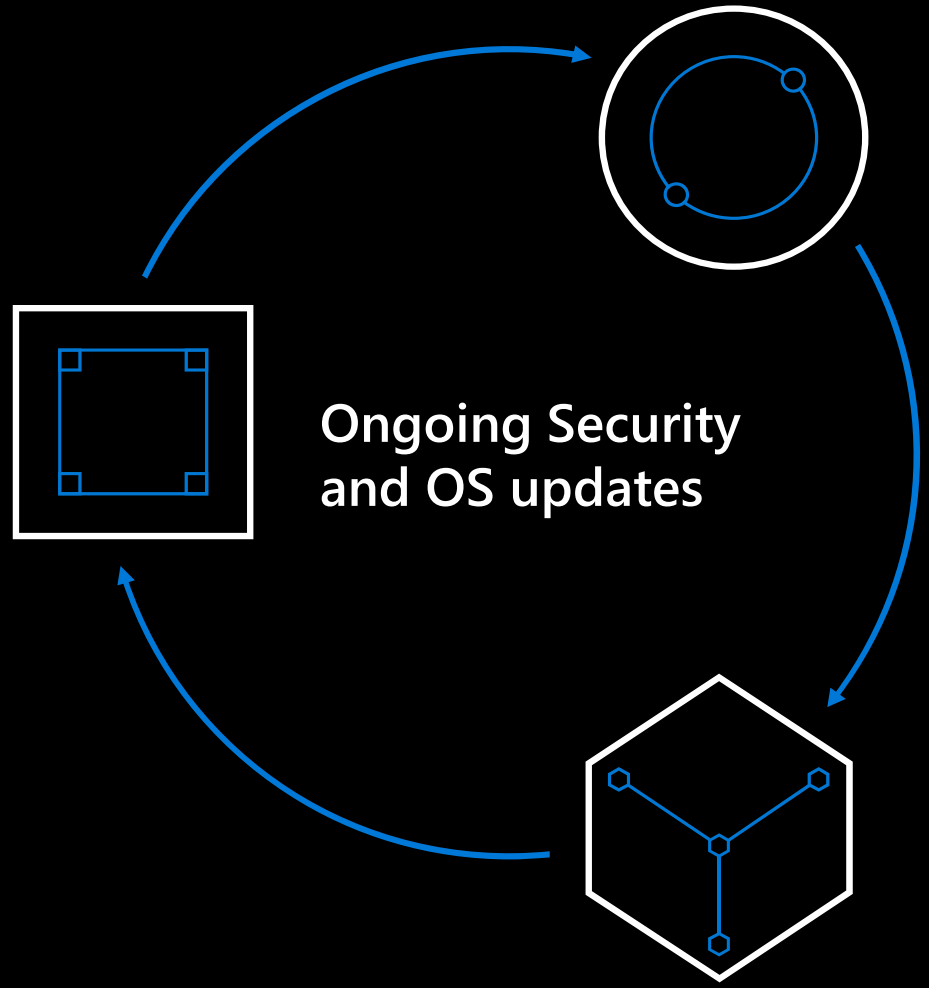
The “smarter” water wherever consumers work, rest, and play

INDUSTRY

Food and beverage

Consumer

Microsoft Azure Sphere



Over 10 years of security and OS updates delivered directly to each Azure Sphere device by Microsoft

Empowering every organization on the planet to create trustworthy IoT devices

Azure Sphere

Microsoft

Soren LAU

General Manager
IoT Sales EMEA

IoT in Action

Digital transformation

$$\text{Tech intensity} = (\text{Tech adoption} \times \text{Tech capability})^{\text{Trust}}$$

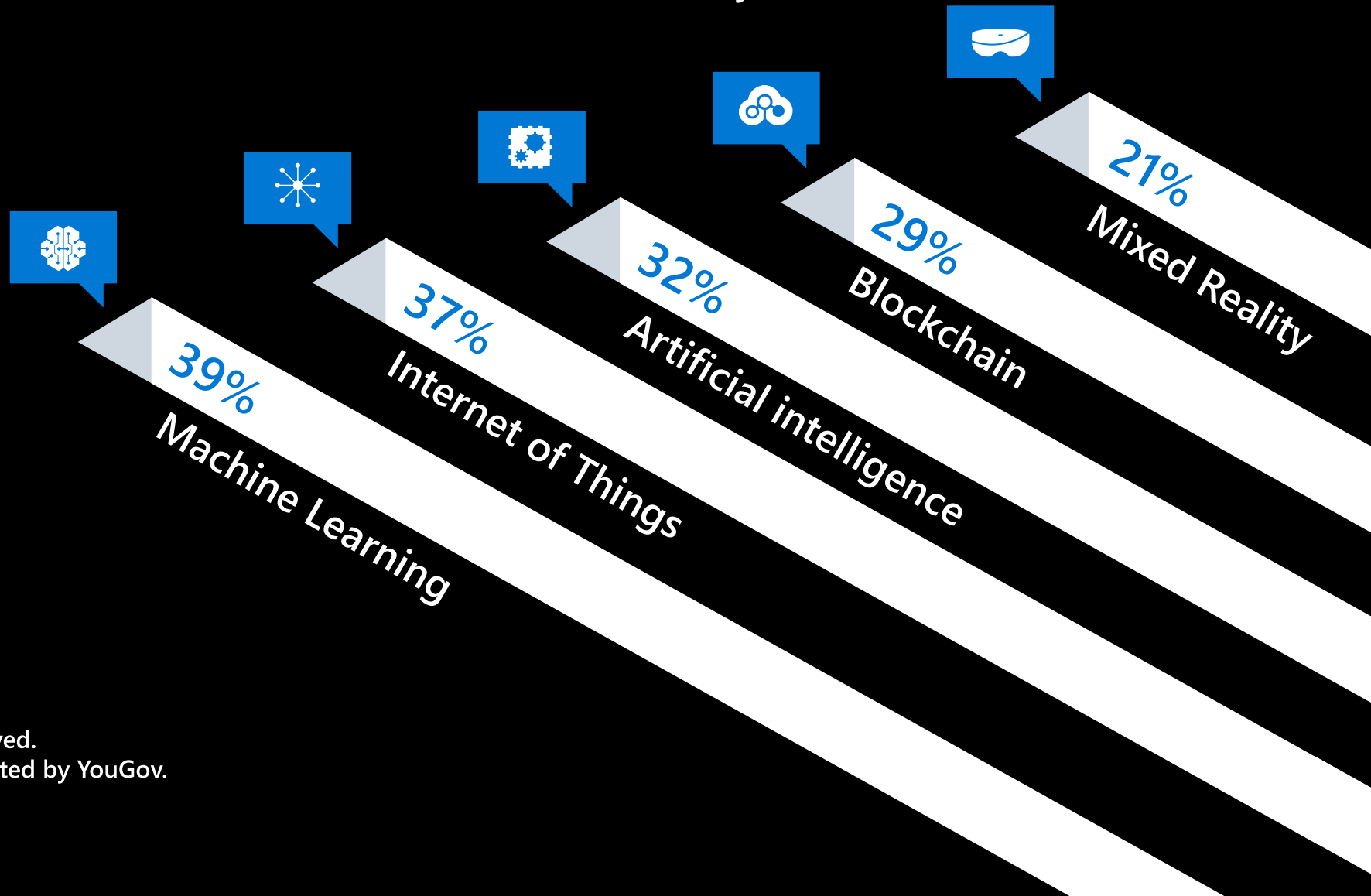
70%

Digital transformation through tech intensity

37%

Leading with IoT engagements

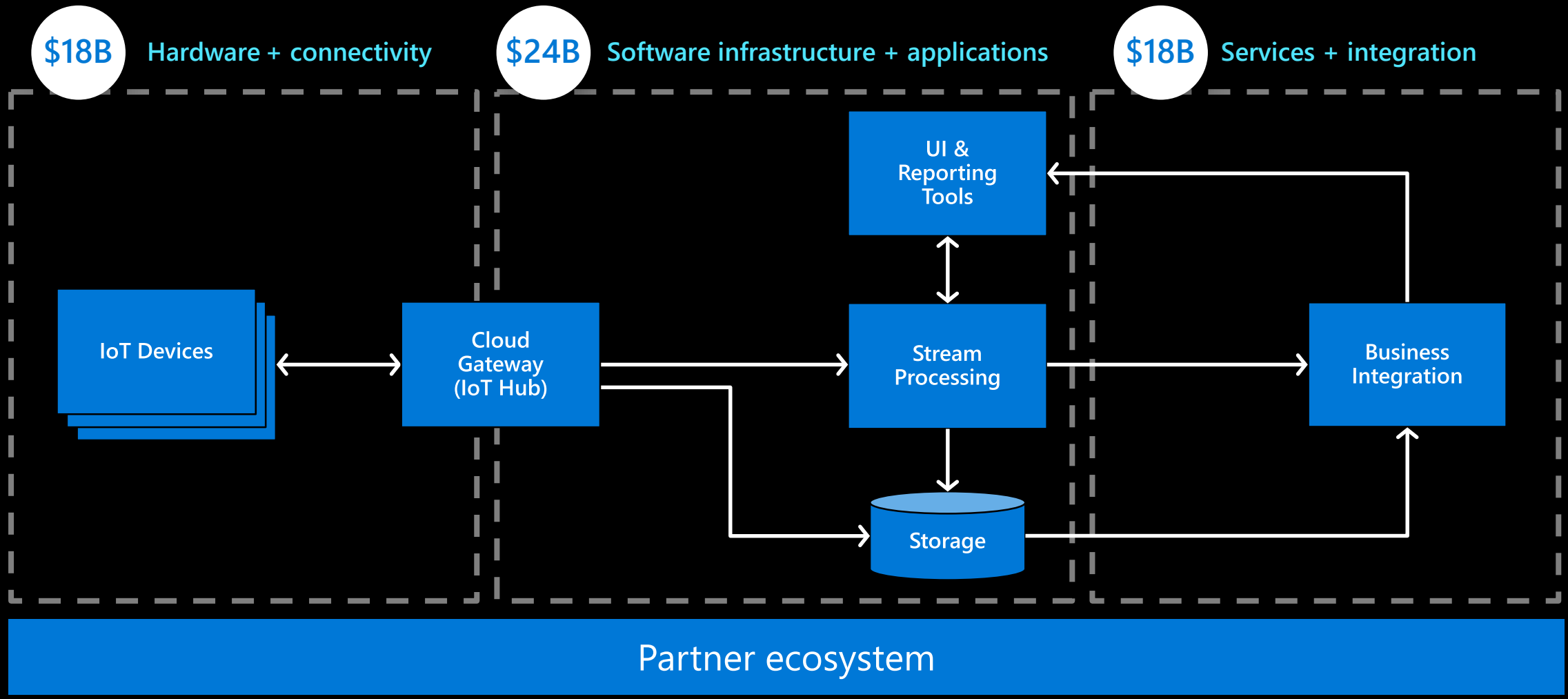
Top 5 technologies organizations are using to achieve tech intensity



Percentages represent all organizations surveyed.
The State of Tech Intensity 2019 Study, conducted by YouGov.

Blueprint to profitability

2020 **$60B** IoT market

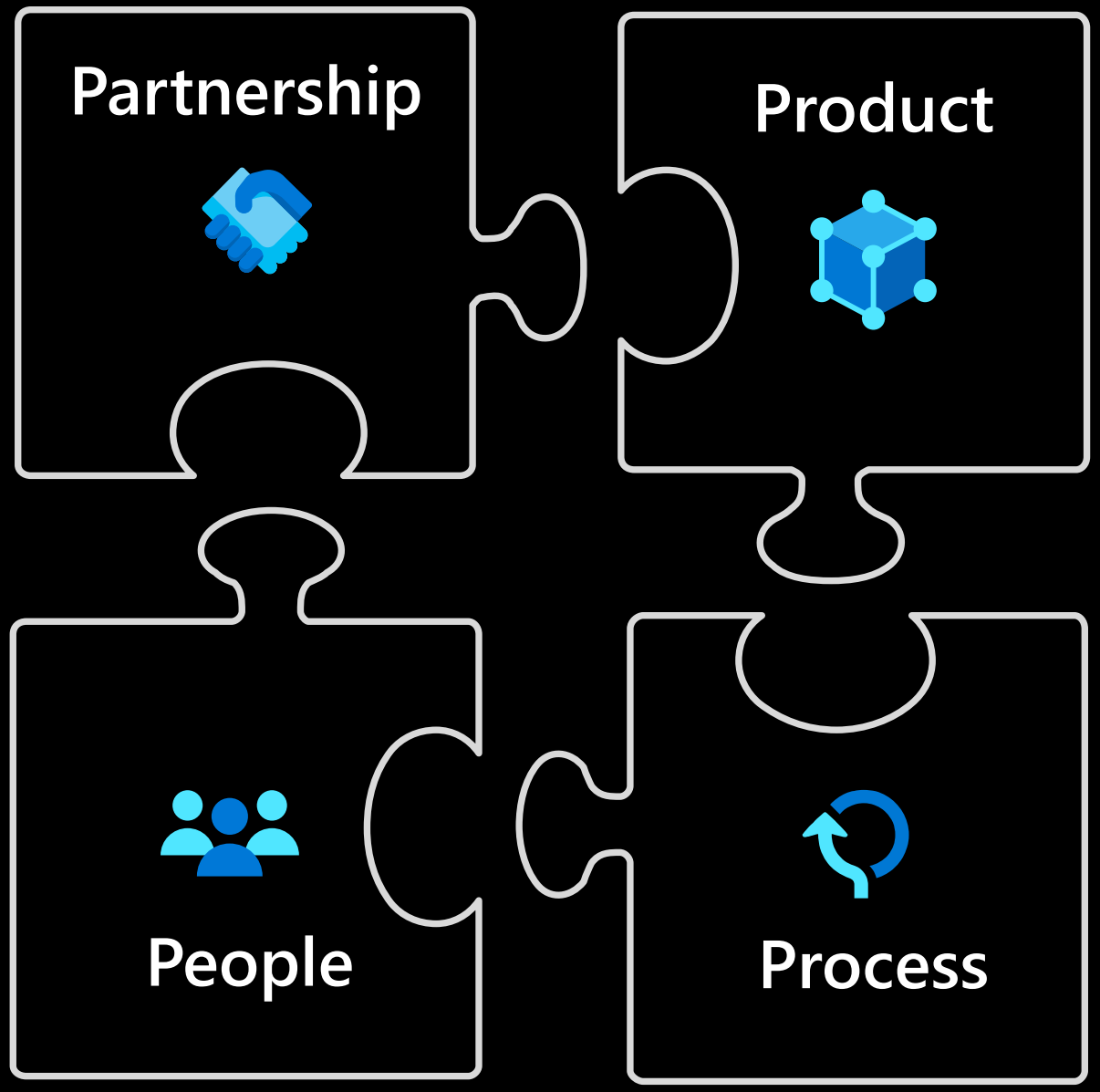


“ … it needs to be **secure** and **just work** … ”

"How can any entity profit from their data and cloud platform?"

"What is the secret to successful implementation?"

Success in IoT

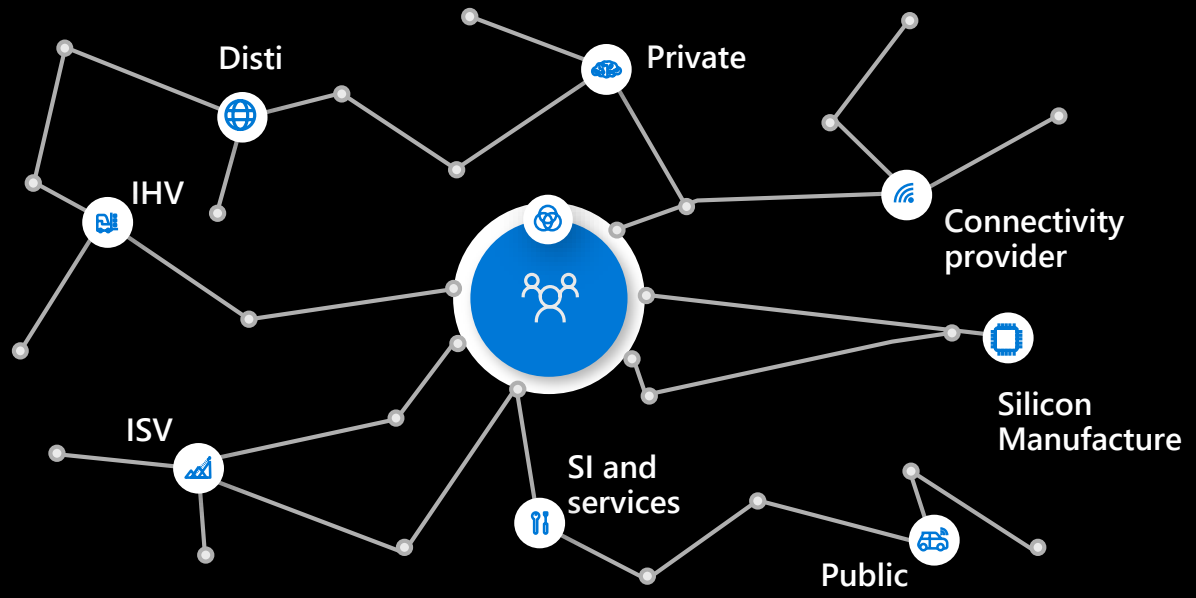


Partnership

"Transforming IoT data into meaningful and actionable information is not one size fits all. That's why having a **diverse global partner ecosystem** combined with domain expertise across industries is an imperative. It's how we solve unique challenges with unique solutions…."

SIEMENS

Ecosystem



Customer

LOB

IT

Strategy for ecosystem

Build, Buy, Partner

Product

"Microsoft Azure offers extraordinary power, performance and intelligence, and allows us to easily do things with **machine learning, edge computing,** and **artificial intelligence** that would be much more difficult otherwise."

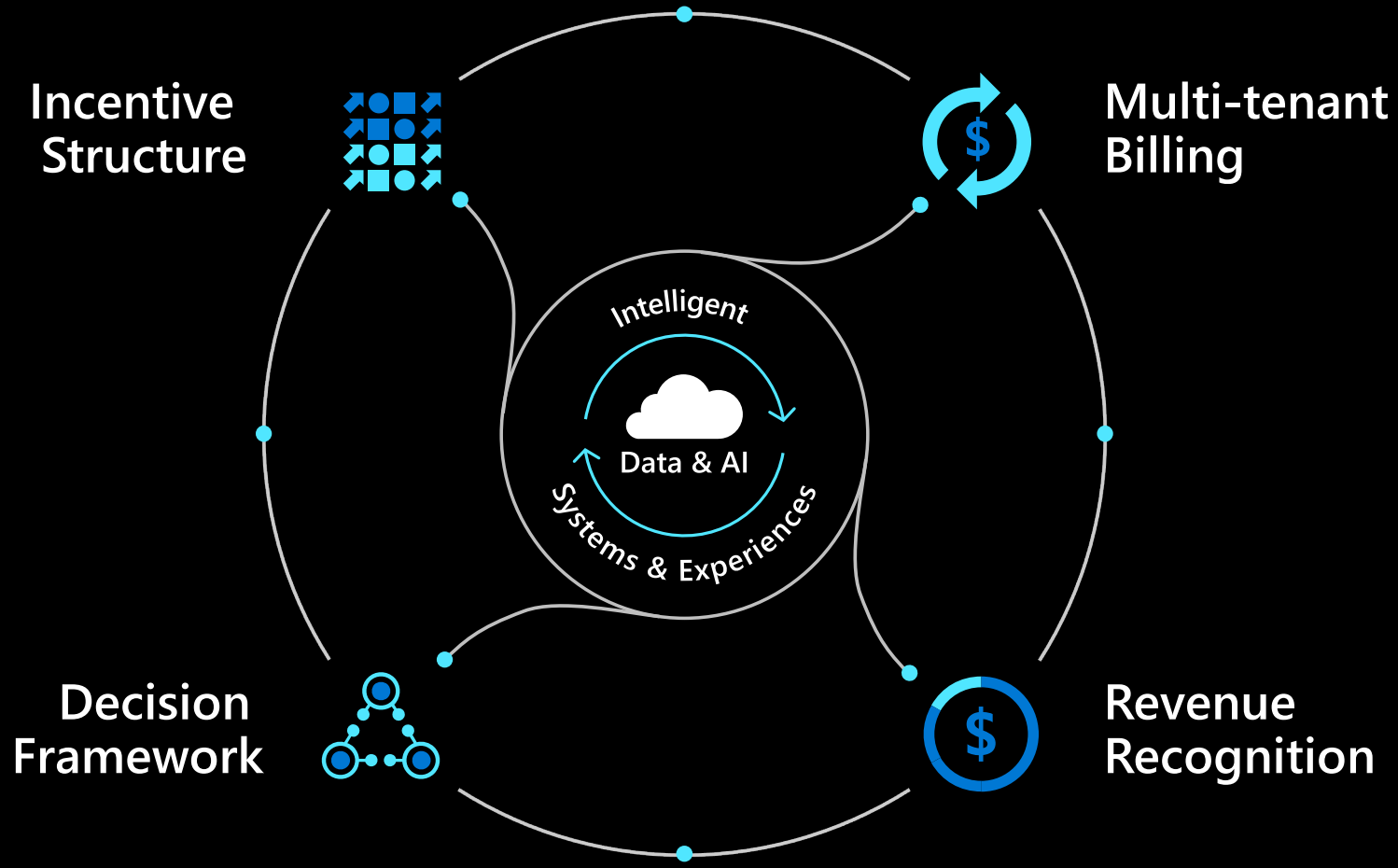
— Gary Slater,
Digital and Data Science Architect

Process

> We emphasize collaboration, using real-time data to make it easier for people to work together as a team and achieve better results in less time. And because we're using Microsoft Azure, we can offer global collaboration, so our customers can use it on **any site or in any country** and every user is on the same database.

— Sebastian Spindler
Key Account & Partner Manager

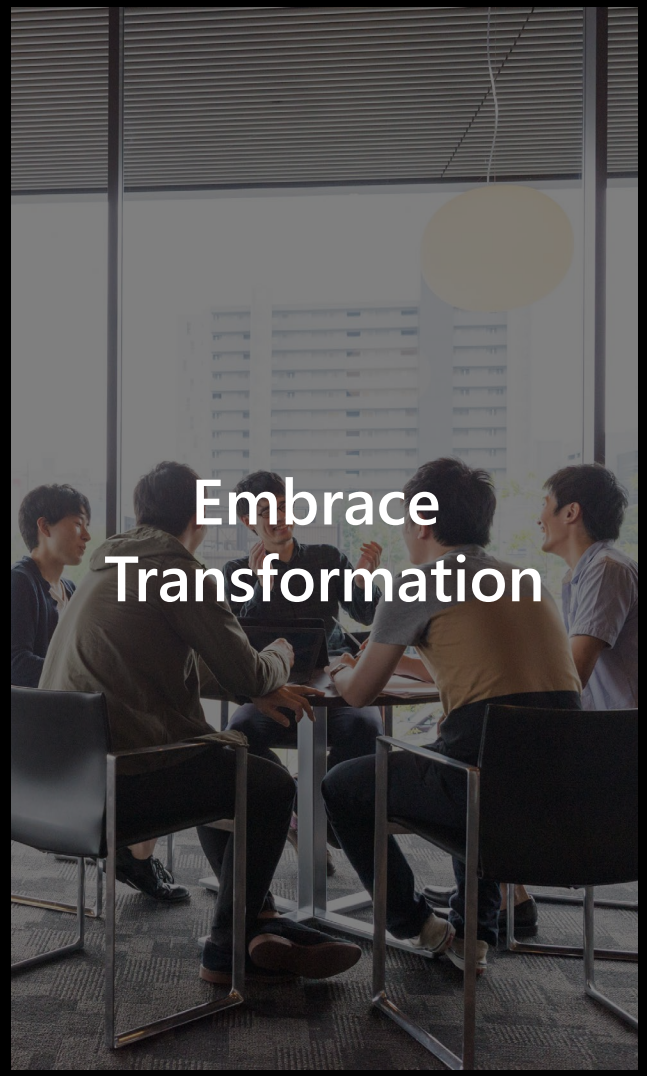
Process


Incentive Structure
Multi-tenant Billing
Intelligent
Data & AI
Systems & Experiences
Decision Framework
Revenue Recognition

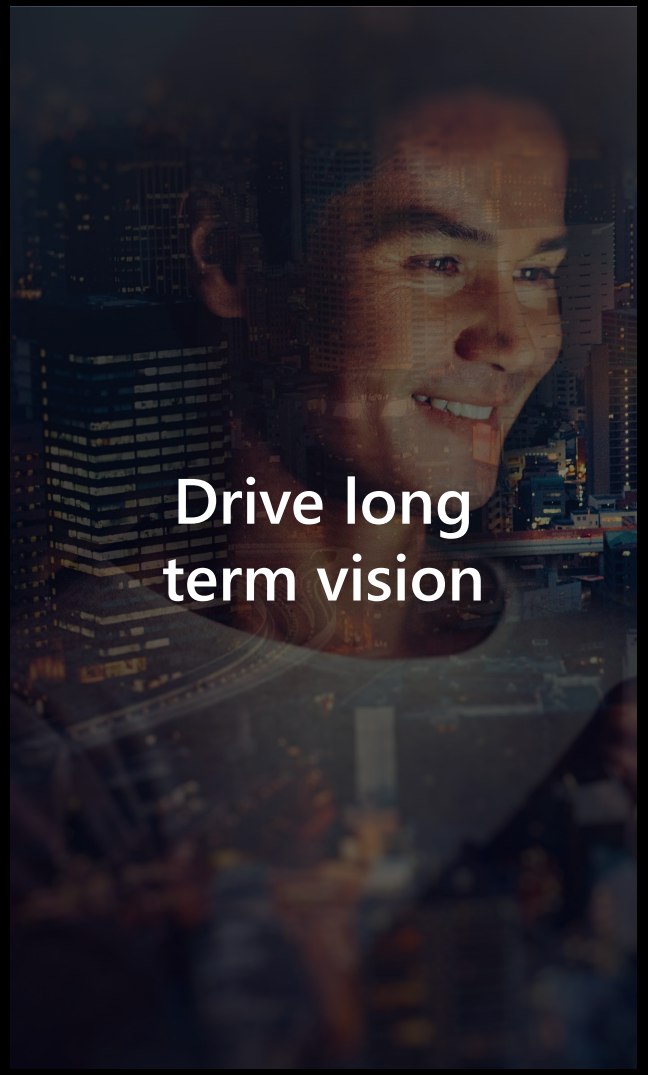
People

"Culture was the key for us. Our CEO had to ensure that **every single leader** was on the same page on what we were trying to accomplish"

PCL

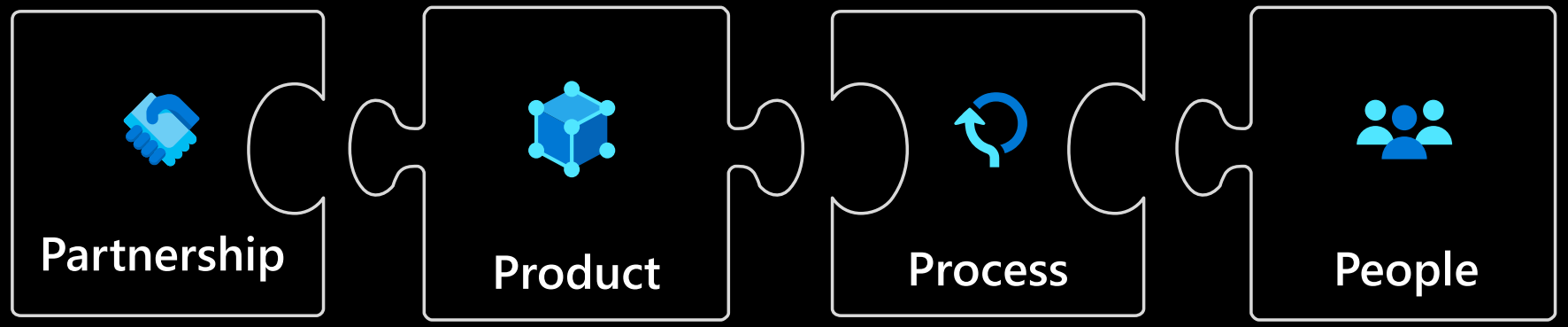

Embrace
Transformation

Lead with
growth mindset


Drive long
term vision

Tech intensity = (Tech adoption x Tech capability)^Trust

Four P's



Microsoft

To get there together

Rethinking the part you play for your customers

Abel Smit – Tech Data

The current climate

Huge opportunity for growth & value we deliver to customers

Behaviours must change, as new thinking & approaches are required

Urge to shift away from a technical or price conversation

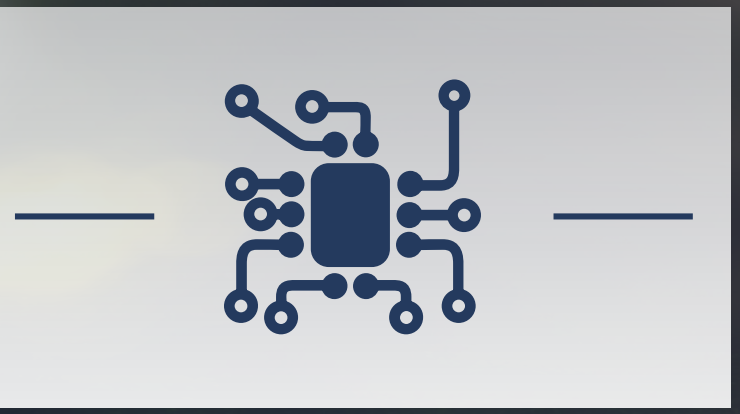
Move towards solution building & value selling

Address issues of 'vendor myopia' understand the aggregator

Limit the number of conversations you are having

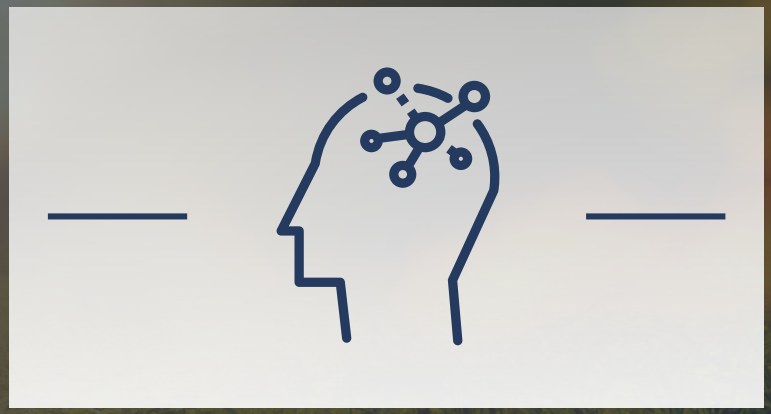
TechData

The Tech Data approach



Understand business value that can be delivered for simple issues many companies have

Create a catalogue of repeatable solutions in our solution factory that can be sold many times



Help Tech Data customers decode the business of Analytics & IoT

Tech Data

Bucher Vaslin – Connected wine press

WHY?	HOW?	WHAT?
Optimize running time and production output	Combination of different skills and expertise, Tech Data filled the gaps	New machine functionality for improved maintenance and secure operation
"Peace of mind" for machine operators & wine producer	Collaborative approach strong parties - serious, trustworthy & secure -	Direct connection between machine operator and manufacturer
Competitive differentiation & increase customer intimacy	Microsoft Strong partnership	Enhanced relationship

Tech Data

We enable partners through our practice builder program

Sponsored and supported by leading vendors

Gain skills and knowledge from industry experts & business strategy workshops

Truly understand the business practice of Analytics & IoT

Technical training, certification, demonstration labs & pre-sales support

Couple of solutions out of practice builder, ready for prime time!

Injection molding monitoring & analytics solution (automotive)

On prem Field Service Management solution migrated to Azure

AMS Advanced mobility services for equipment rental firms

Boiler monitoring solution for the energy sector

“It’s about finding the right people, with the right abilities, in the right place, at the right time”

Looking forward

Microsoft

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#IoTinActionMS