Microsoft

IoT in Action

#IoTinActionMS

Microsoft

Architecting the Intelligent Edge

Benjamin Cabé
Program Manager, Azure IoT, Microsoft

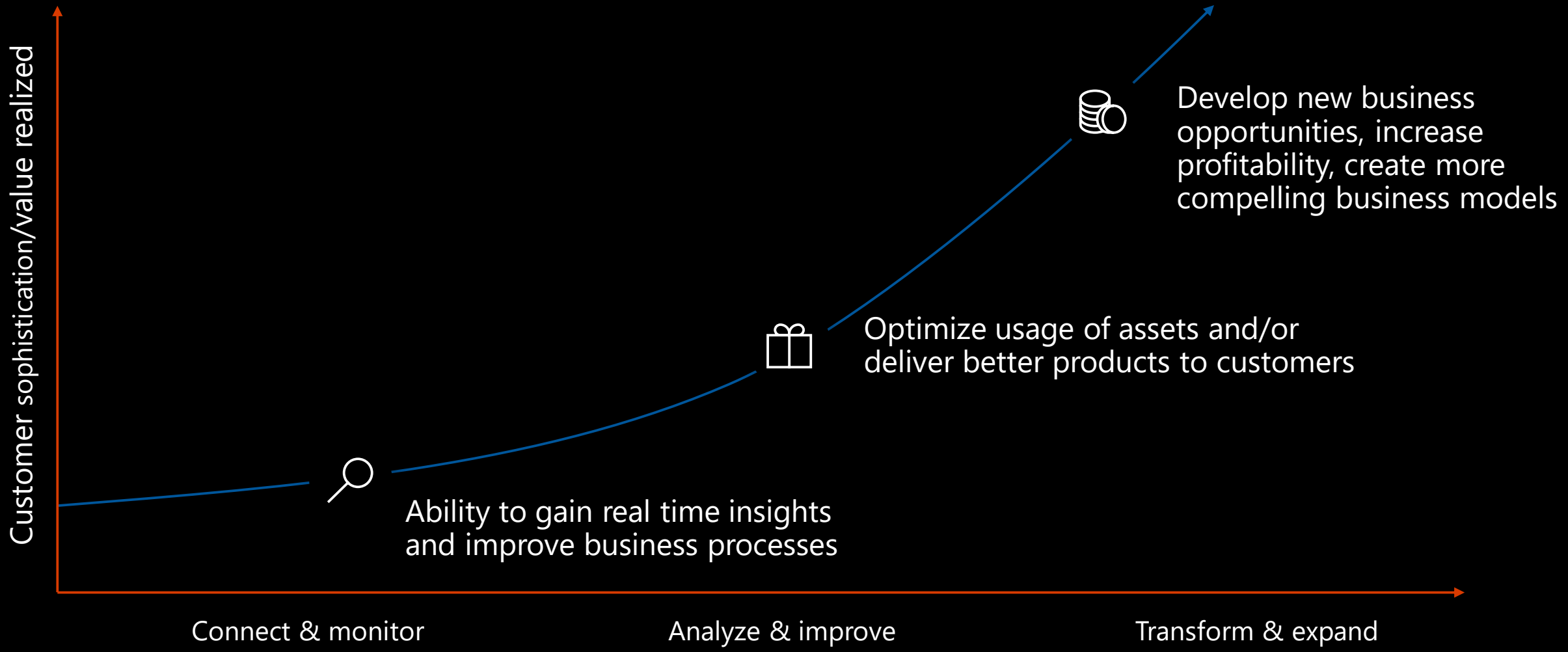
Augustin Monsaingeon
Sierra Wireless

Alastair Worth
Avnet Integrated Solutions

IoT in Action

The IoT journey has multiple stages

Each stage has dramatic benefits

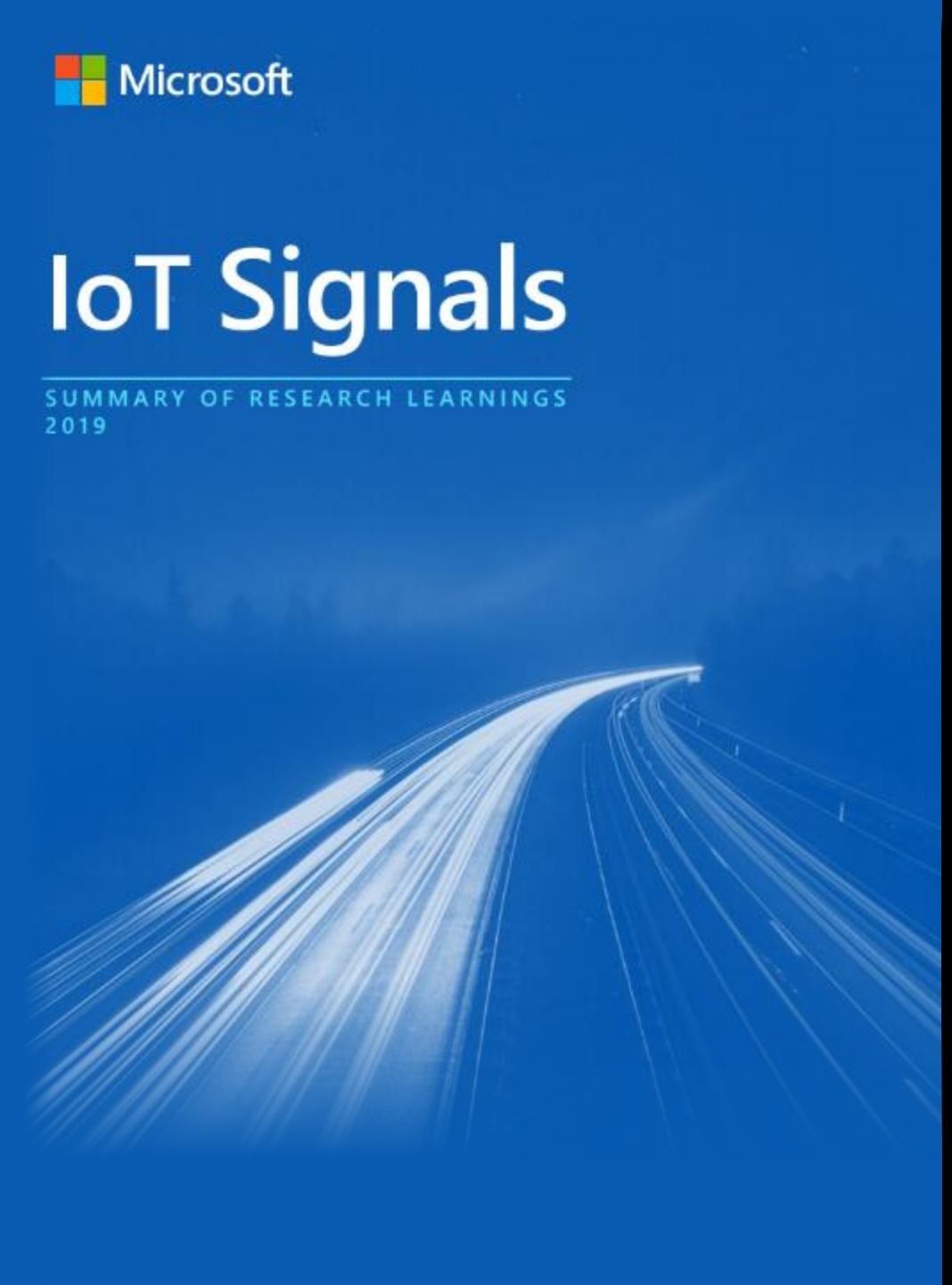


©Microsoft Corporation
Azure

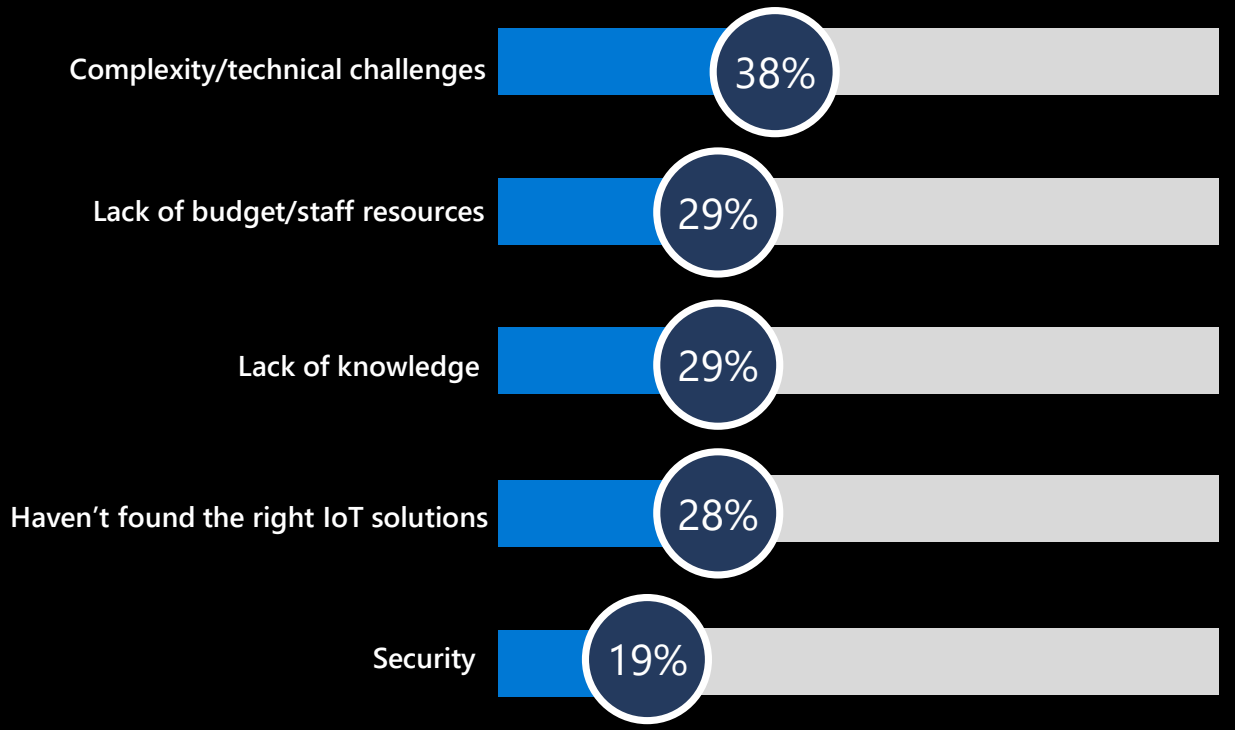
Microsoft

IoT Signals

SUMMARY OF RESEARCH LEARNINGS
2019



Top challenges



Enterprise integration

Data storage

Fault tolerance

Business process integration

Cloud-to-device commands

Device recovery

Operations monitoring

Solution scale

Cost management

Internationalization

CI/CD

INSIGHTS

High availability

Updating devices

Cold path analytics

Provisioning devices

Device lifecycle

Disaster recovery

Hot path analytics

Warm path analytics

Device commercialization

End-to-End Security

Data ownership

Transport protocols

On device analytics

Manufacturing scale

Data visualization

HW certification

THINGS

ACTIONS

Drivers

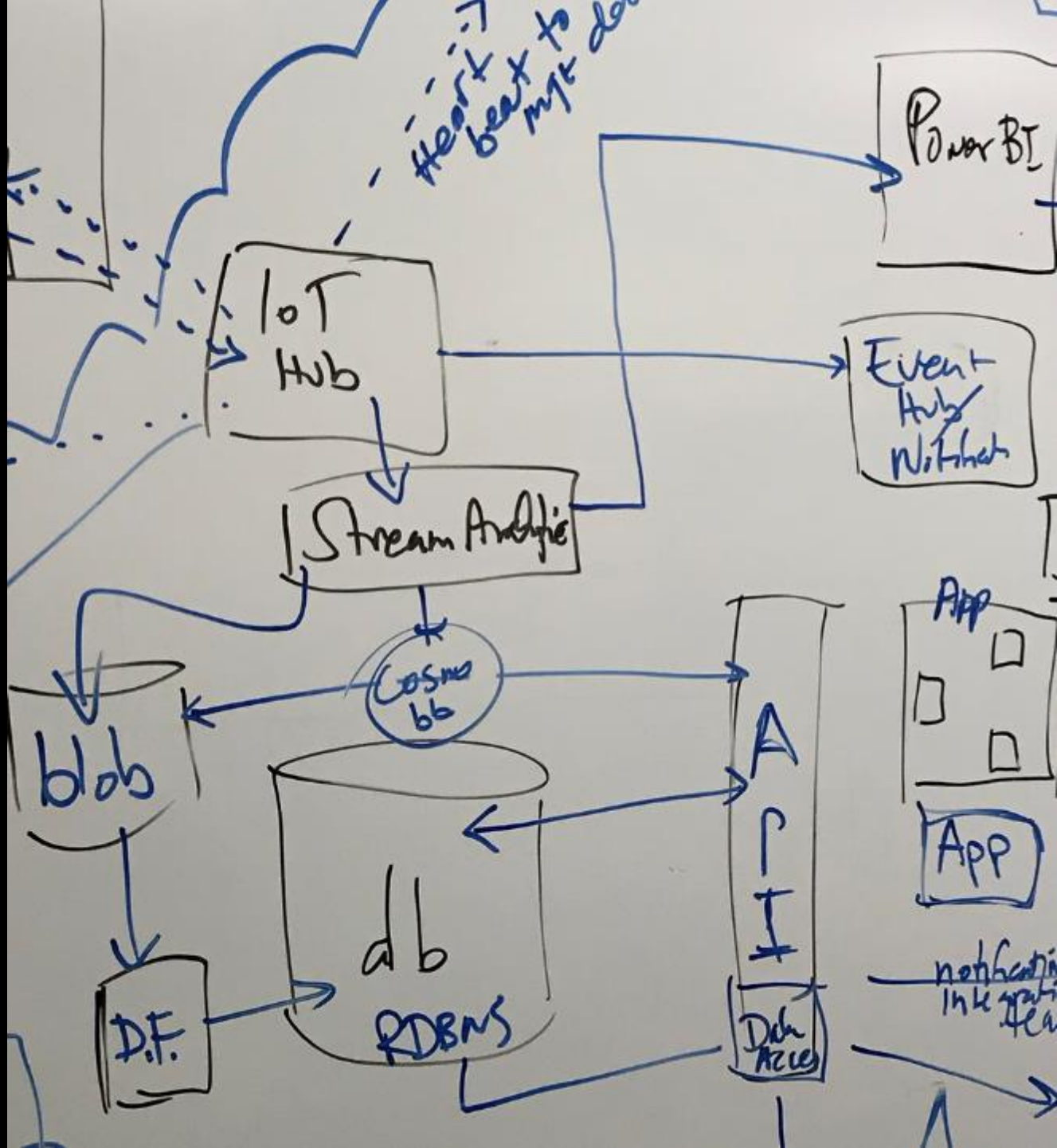
Securing data

Industry and government compliance

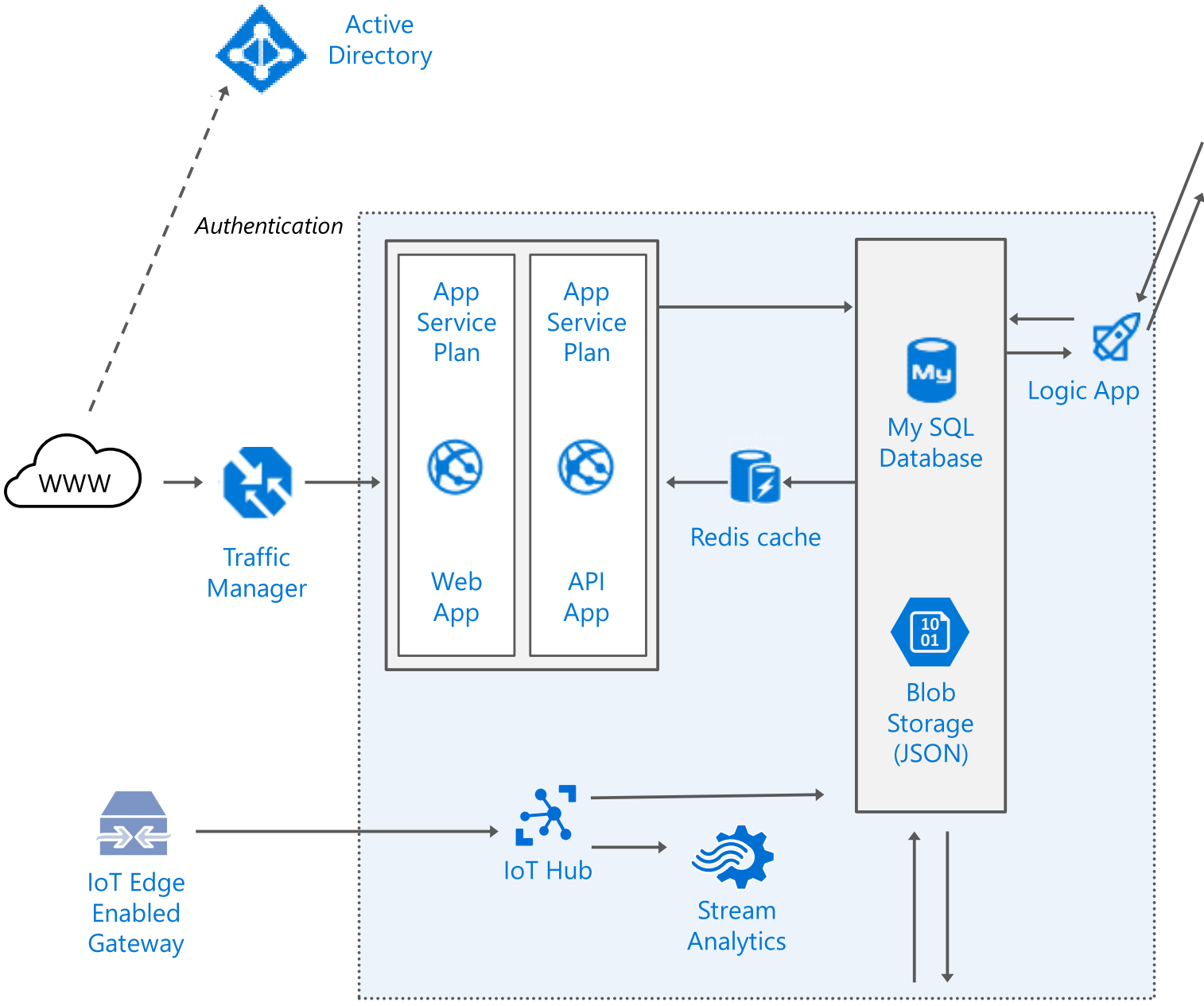
Device updates

©Microsoft Corporation
Azure

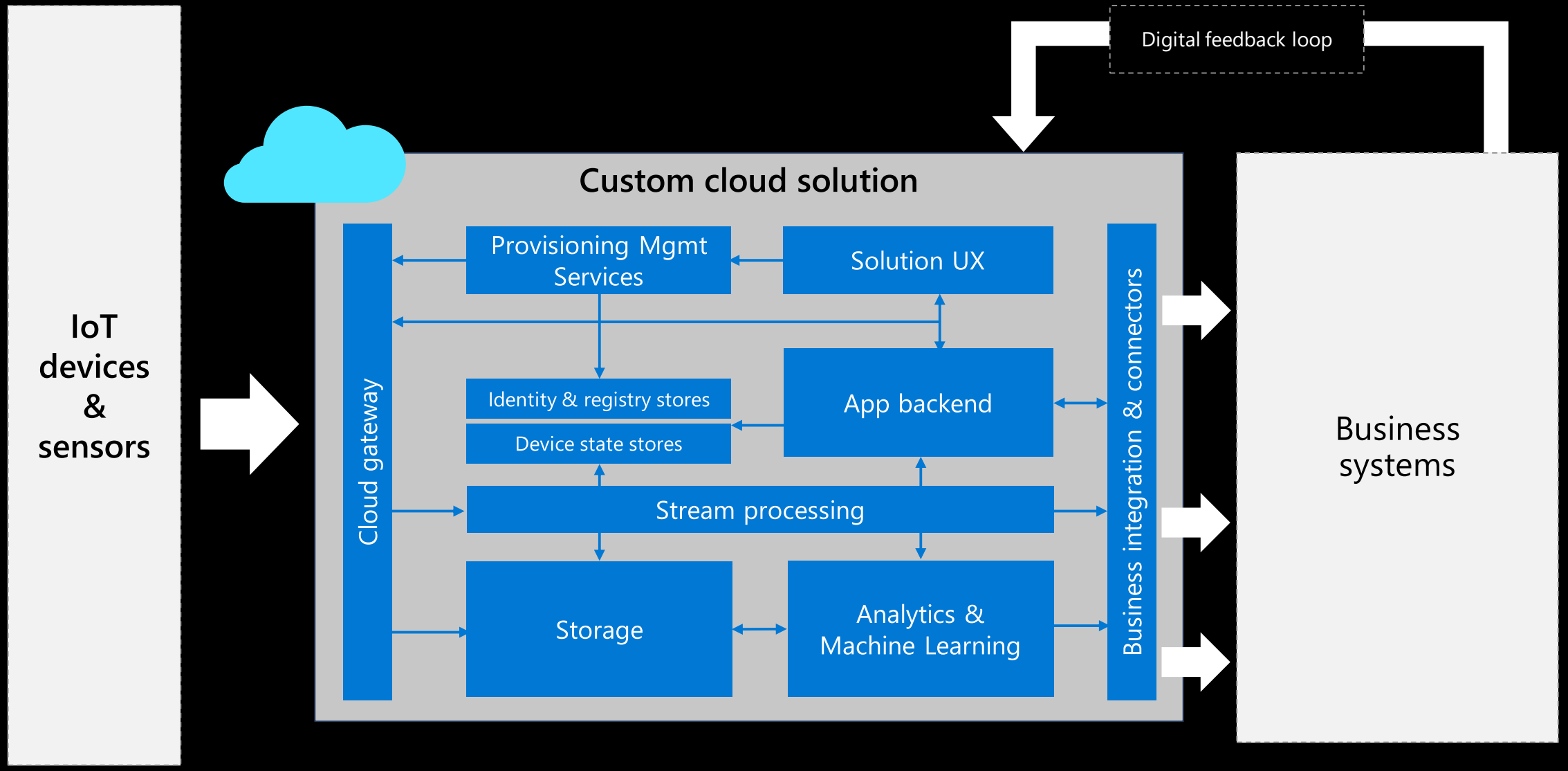
Architectural design sessions



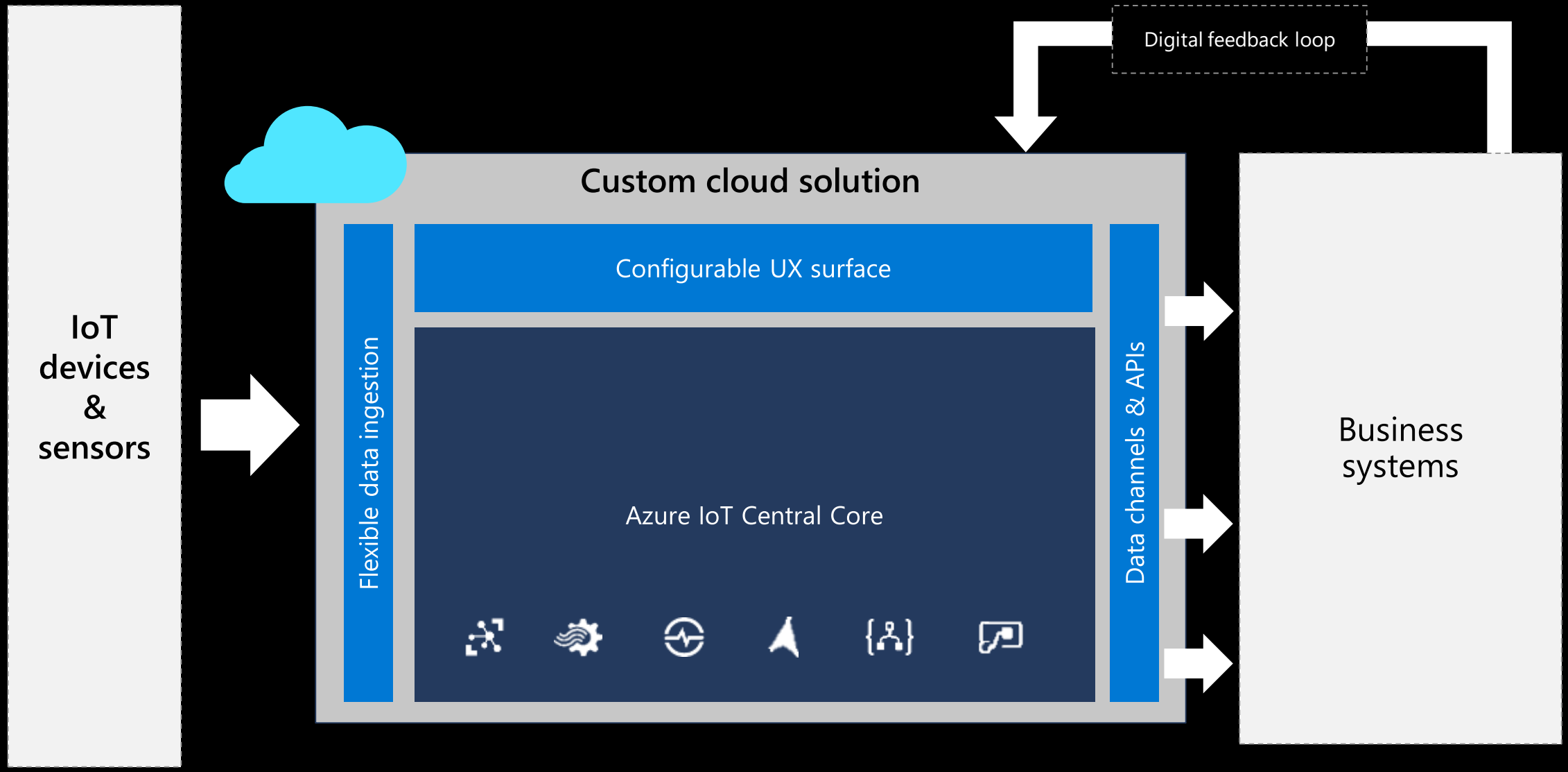
The output


Active Directory
Authentication
WWW
Traffic Manager
App Service Plan
Web App
App Service Plan
API App
Redis cache
My SQL Database
Logic App
Blob Storage (JSON)
IoT Edge Enabled Gateway
IoT Hub
Stream Analytics

Solution architecture - DIY



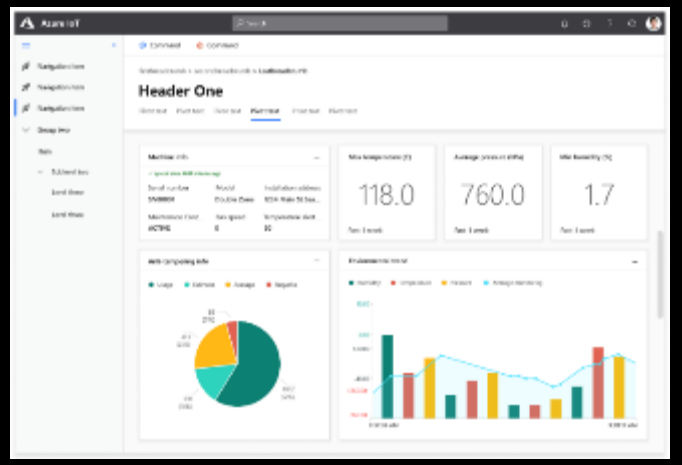
Solution architecture - IoT Central



Azure IoT Central

IoT app platform with security, global scale, high availability, disaster recovery built in

- Device connectivity and management
- Telemetry ingestion and command and control
- Monitoring rules & triggered actions
- User roles and permissions
- Dashboards, visualization and insights
- Fully hosted and managed by Microsoft

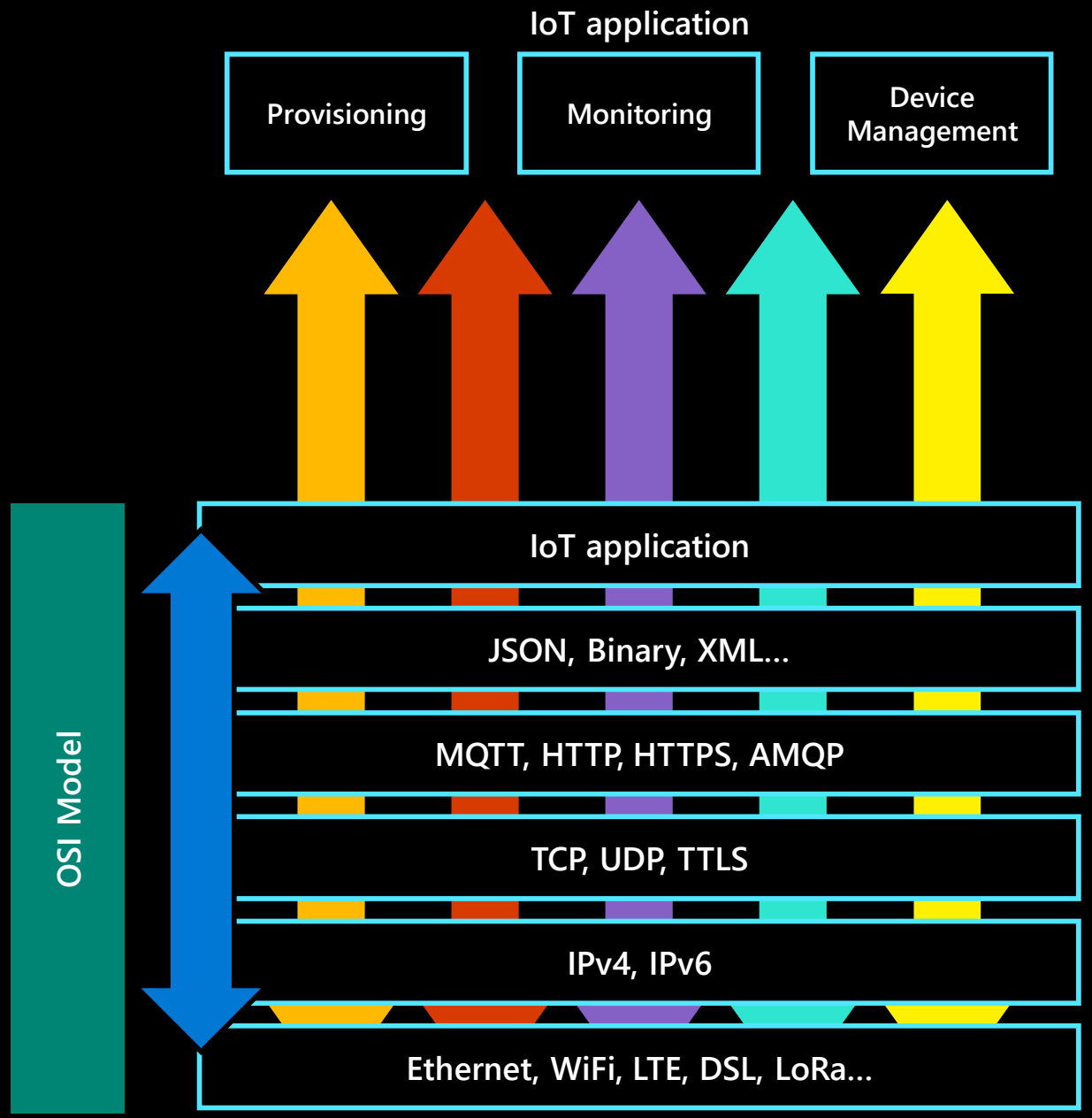


- Maps, location telemetry and geofencing
- Device Bridge
  Ingest data from other clouds
- Continuous Data Export
  Bring data into downstream business applications

- White labeling
  Your SaaS – Your Brand
- IoT Plug-and-Play
  Public Preview
- IoT Edge support
  Incl. Module Management
- Multi-tenancy & RBAC
- Extensibility
  APIs
- Solution Builder App Templates

Connecting hardware is very "hard"

Provisioning
Configuration
Device management
Deployment
Monitoring

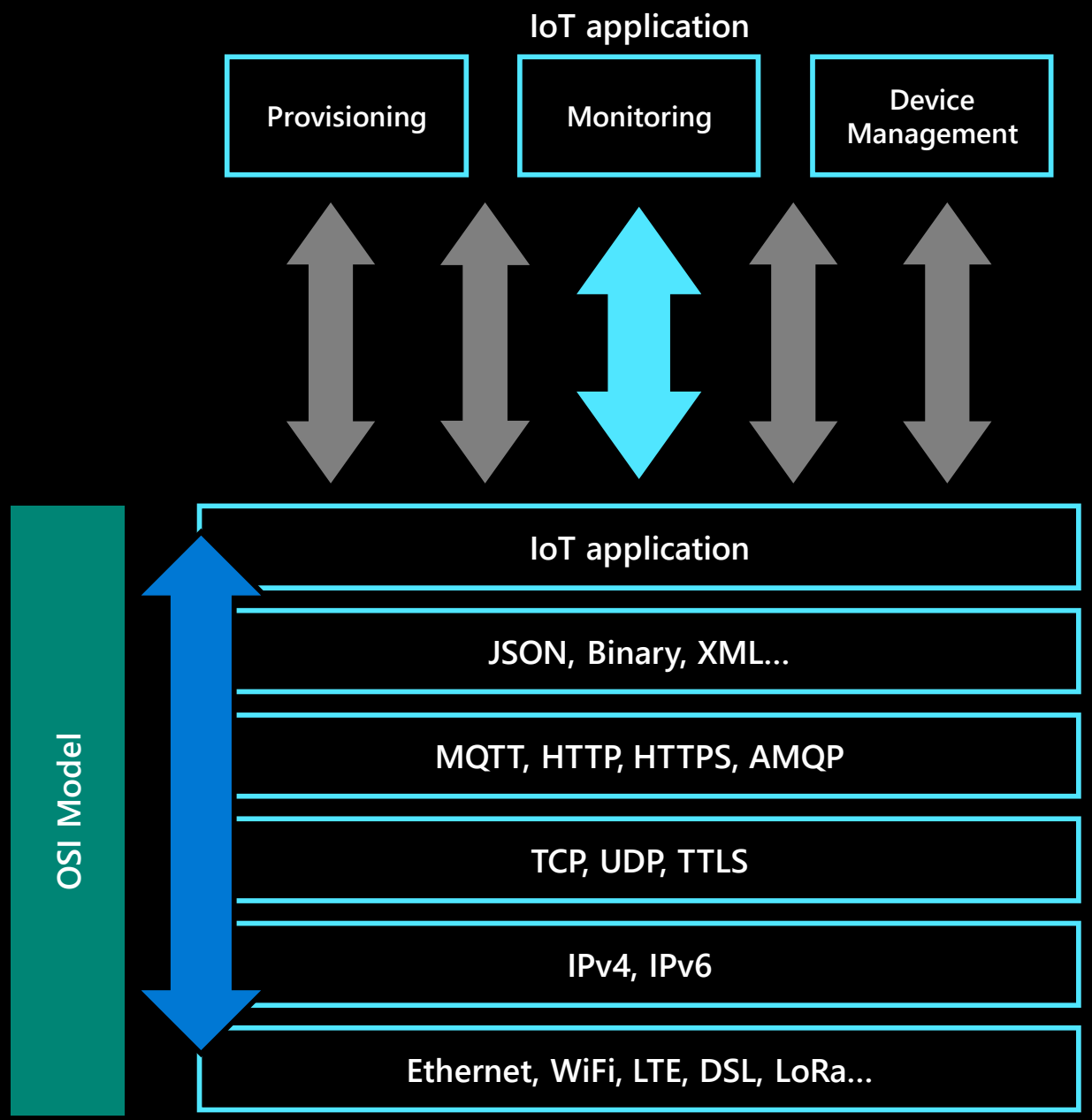


IoT Plug and Play defines common language

A platform feature to describe models and capabilities to Cloud

Based on Digital Twin definition language

Open source based on open standards (JSON-LD, RDF)



Benefits

Solution developers

Dramatically reduces the effort needed to build software on devices

Customers and partners

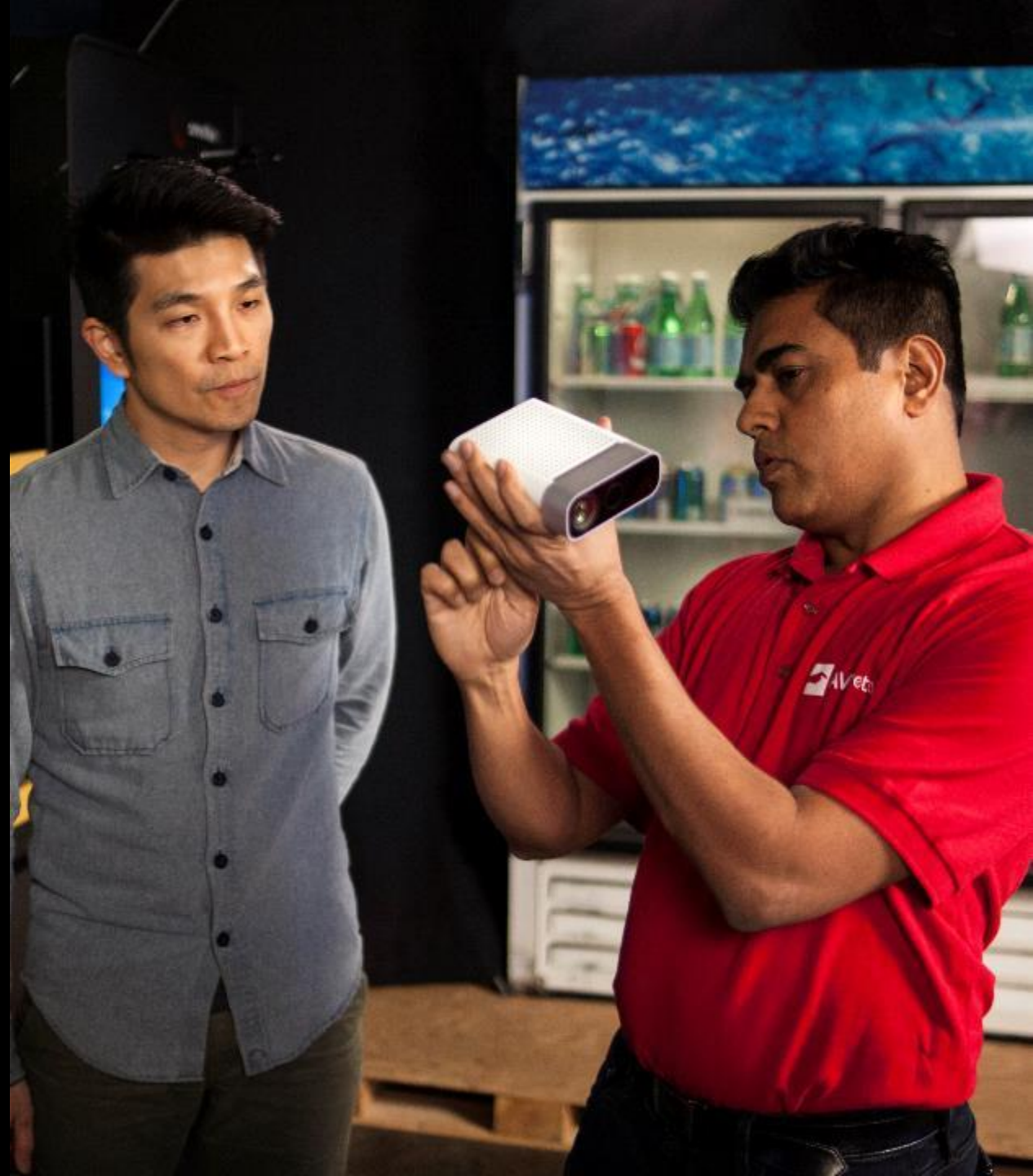
Large ecosystem of devices that just work with Azure IoT solutions, without any development required

Device builders

Certify your device for IoT Plug and Play and it can be used with thousands of Azure IoT solutions

In public preview

http://aka.ms/IoTPlugandPlay



Partners make it possible

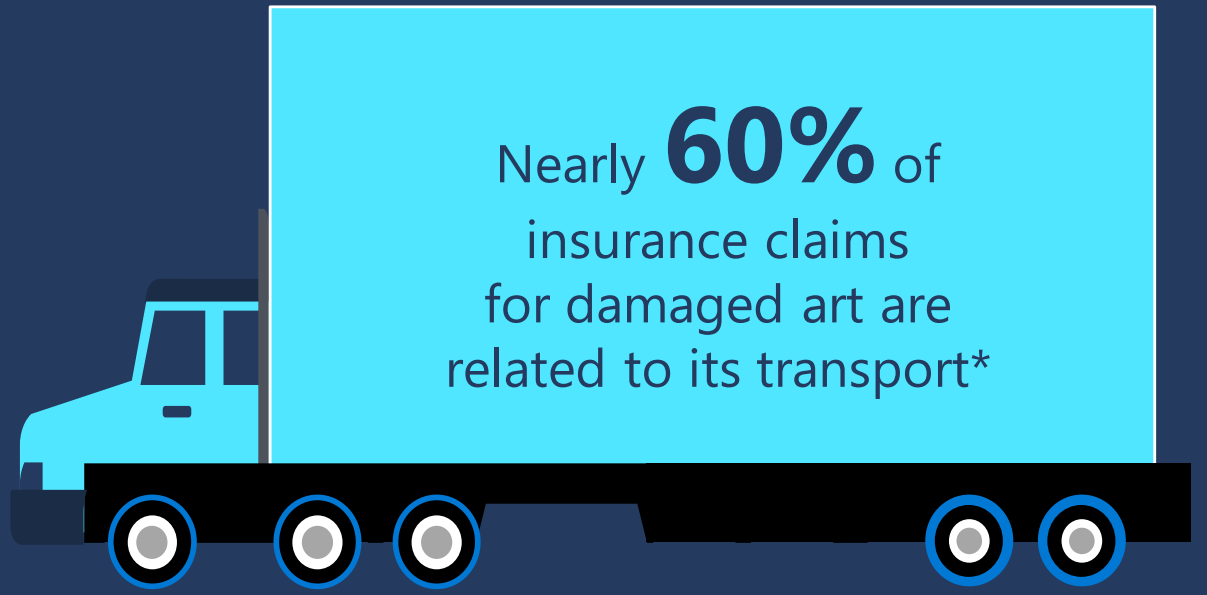
Microsoft

Architecting the Intelligent Edge

Augustin Monsaingeon
Sierra Wireless

IoT in Action

Problem Statement



* *2019 Art Basel and UBS Global Art Market Report*

Problem Statement

Worldwide shipments: require a global connectivity

Flexible hardware and software configuration
(sensors, thresholds, reporting rate)

Fast time to market and Fast End-user App development

End-to-end security and device management at scale

Reminder: Traditional Approach

✓ Initial cellular contract

✓ International contracts

✓ Provision and manage device and cellular subscription

Contoso

Establish Global Connectivity

Contoso Challenges

Large upfront investment

Long implementation cycle

- ✓ Data orchestration at scale
- ✓ Security
- ✓ Scalability
- ✓ FailOver
- ✓ Maps
- ✓ Dashboards and KPIs

Develop mobile apps

✓ High-cost developers

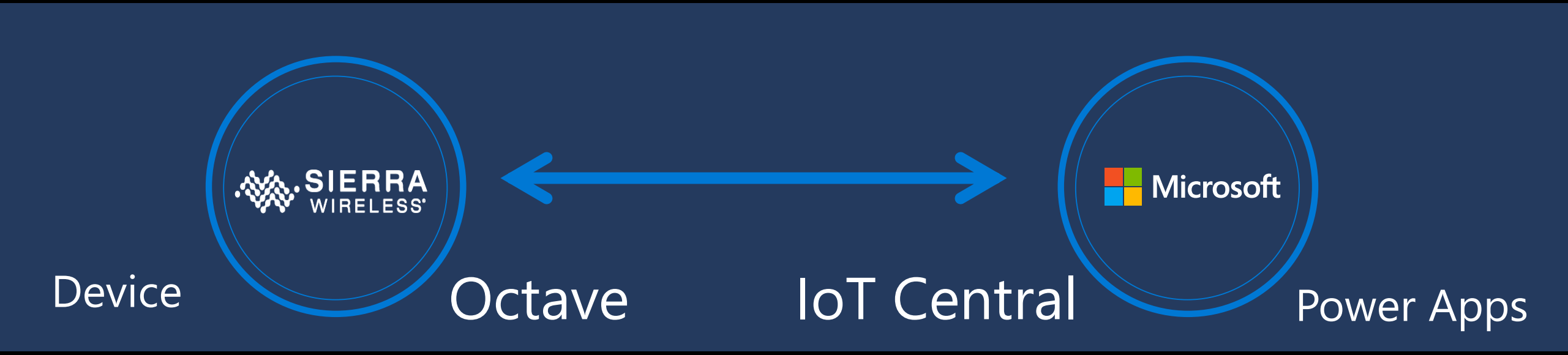
✓ Android

✓ iOS

Contoso

Develop cloud application

Solution Provided by Sierra & Microsoft



- Global cellular connectivity
- Ready to connect pre-provisioned SIM
- Data orchestration
- Flexible Edge computing
- Edge sensors and devices ecosystem

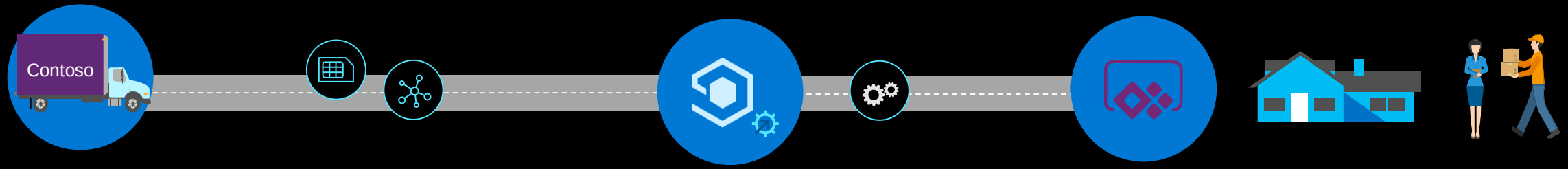
- Azure Cloud platform
- Power Platform: Mobile apps, BI
- Connected field services
- Connected workplace
- Microsoft partner ecosystem

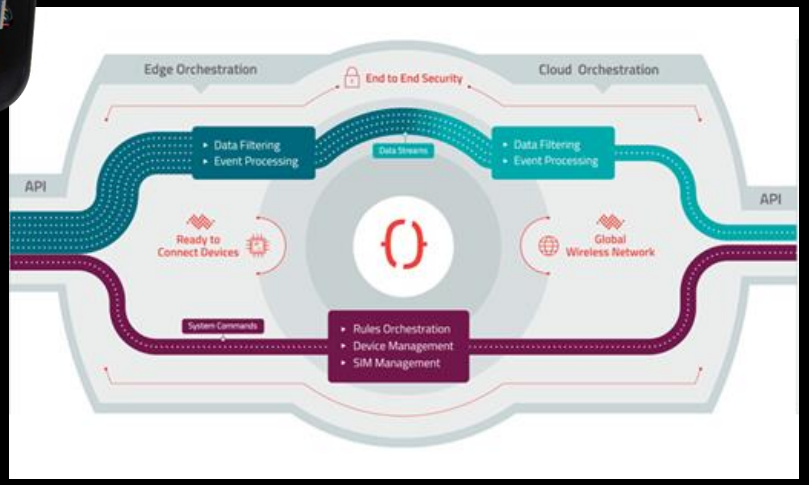
Octave + IoT Central

Connect assets using Octave

IoT Central

Develop App using no-code Power Platform





APIs

Custom cloud solution

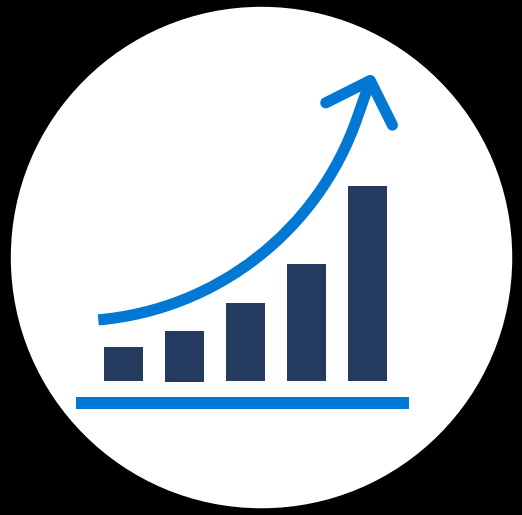
Flexible data ingestion

Configurable UX surface

Azure IoT Central Core

Data channels & APIs

Solution Provided by Sierra & Microsoft



SCALABLE

INTEGRATED

GLOBAL

Come see the demo

Microsoft

Architecting the Intelligent Edge

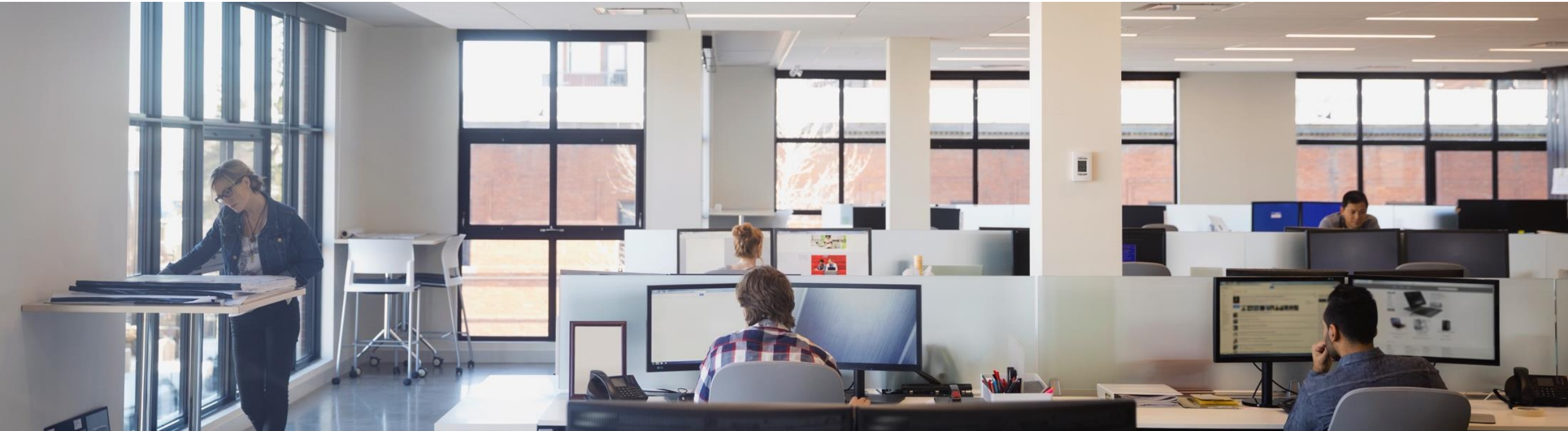
Alastair Worth
Avnet Integrated Solutions

IoT in Action

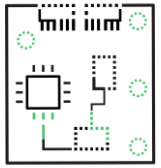
Avnet Integrated Solutions

Alastair Worth – IoT Director

AVNET® INTEGRATED



Avnet Integrated – What we do



Embedded Boards	Display Solutions	Embedded Systems	Appliances
System on Modules, Computer on Modules, Single Board Computers, Embedded Motherboards, Industrial Temp Motherboards, Wireless Technologies, Memory, Embedded OS	Industrial Monitors, Open Frame Displays, Touch Screens, Display Controllers	Industrials PCs, All-in-Ones, Memory, HDDs, SDDs, Chassis, Cooling Fans, SFF PCs, Wireless Technologies Storage Technologies, Embedded Operating Systems, Gateways	Branded Servers, Whitebox Servers, Server Chassis, Storage Arrays, Network Switches, Racks, Power Supplies, HDDs, SSDs, Memory, Embedded Operating Systems, Cooling Systems

SOFTWARE SOLUTIONS

Focus markets & applications

Embedded Systems

Industrial Automation	Medical	Building Security & Automation	Gaming	Transportation	Retail
Printer HMI Control Pump HMI Control Machine Tool Control Power Station Control	Dialysis System Endoscopic Monitor Dentist Chair HMI Electrocardiography Device Image Analysis CT Data Transmission	Airport X-Ray Server Home Server IoT Gateway Home HMI Control Wall Mount Radio	Digital Table Display Slot Machine HMI	Flight Attendant Panel Tractor Driving Panel Railway Control System Helicopter Navigation Drone Control	Point-of-Sale Vending Digital Signage

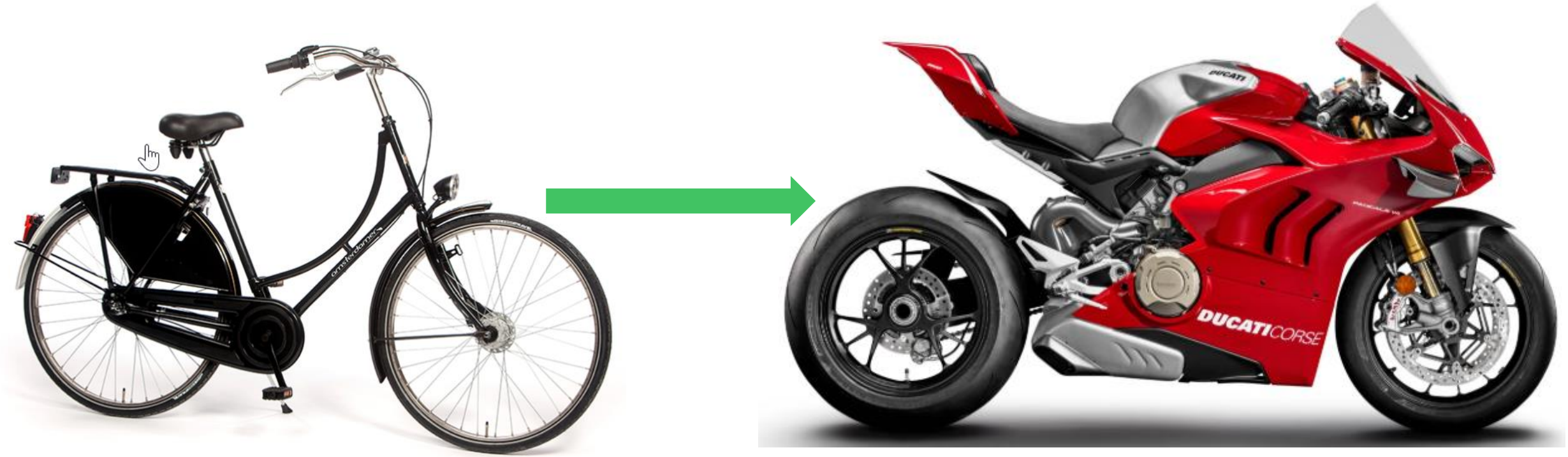
Servers and Appliances

Network Security	Telco	Enterprise Storage	Media & Entertainment
Network Firewall Threat Detection Appliance	Session Border Controller Virtual Router Unified Comms Solution	Storage Appliance Storage Virtualization Secure Backup Appliance	Media Server Streaming Media Server Graphics & Branding Solution

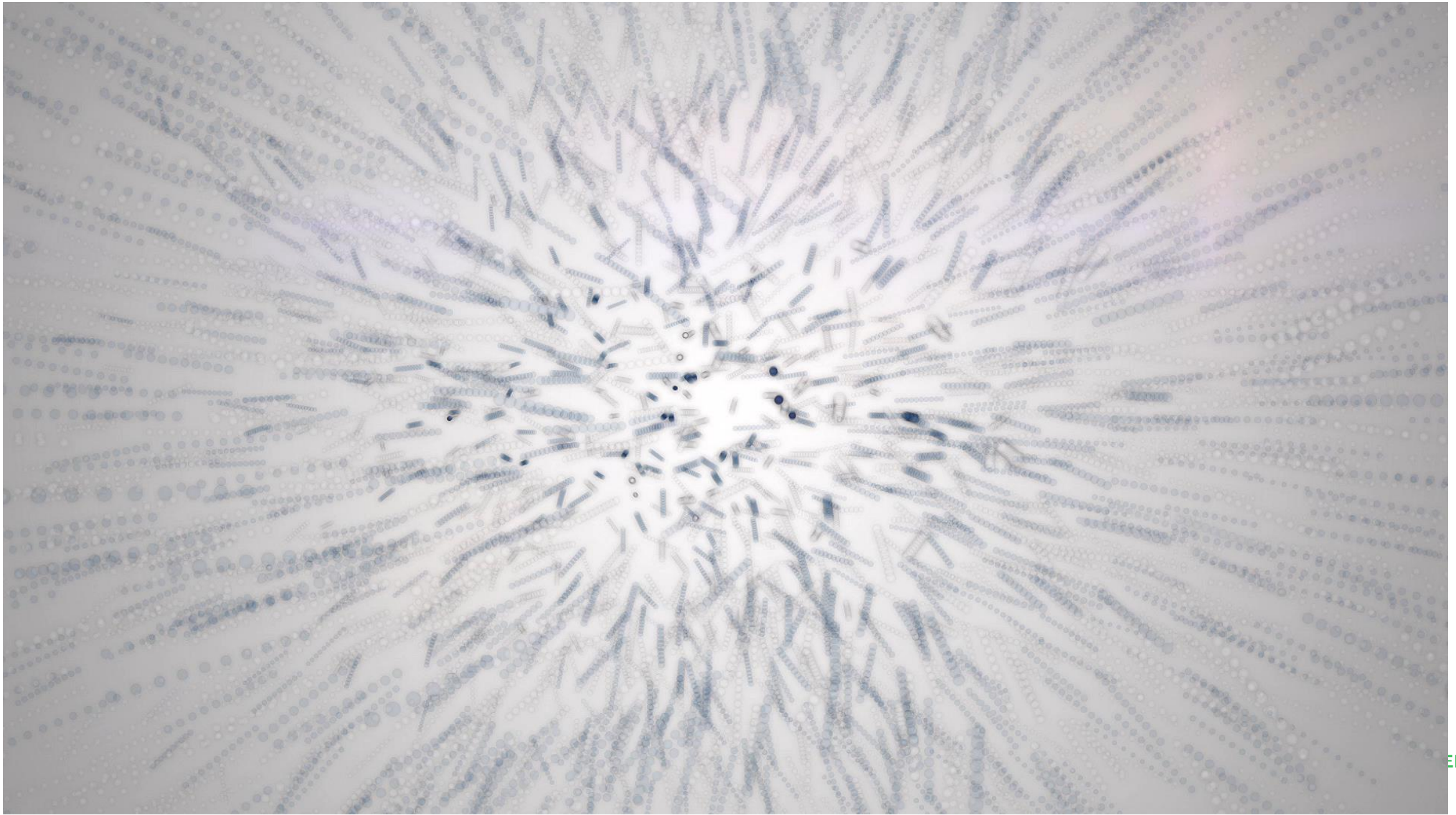
AVNET INTEGRATED

Customer case study

Post an IoT seminar hosted by Avnet we were approached by a well known highways maintenance provider to see how Avnet Integrated may be able to help them apply IoT technologies to digitally transform their surveying and man-power based business.



The Result

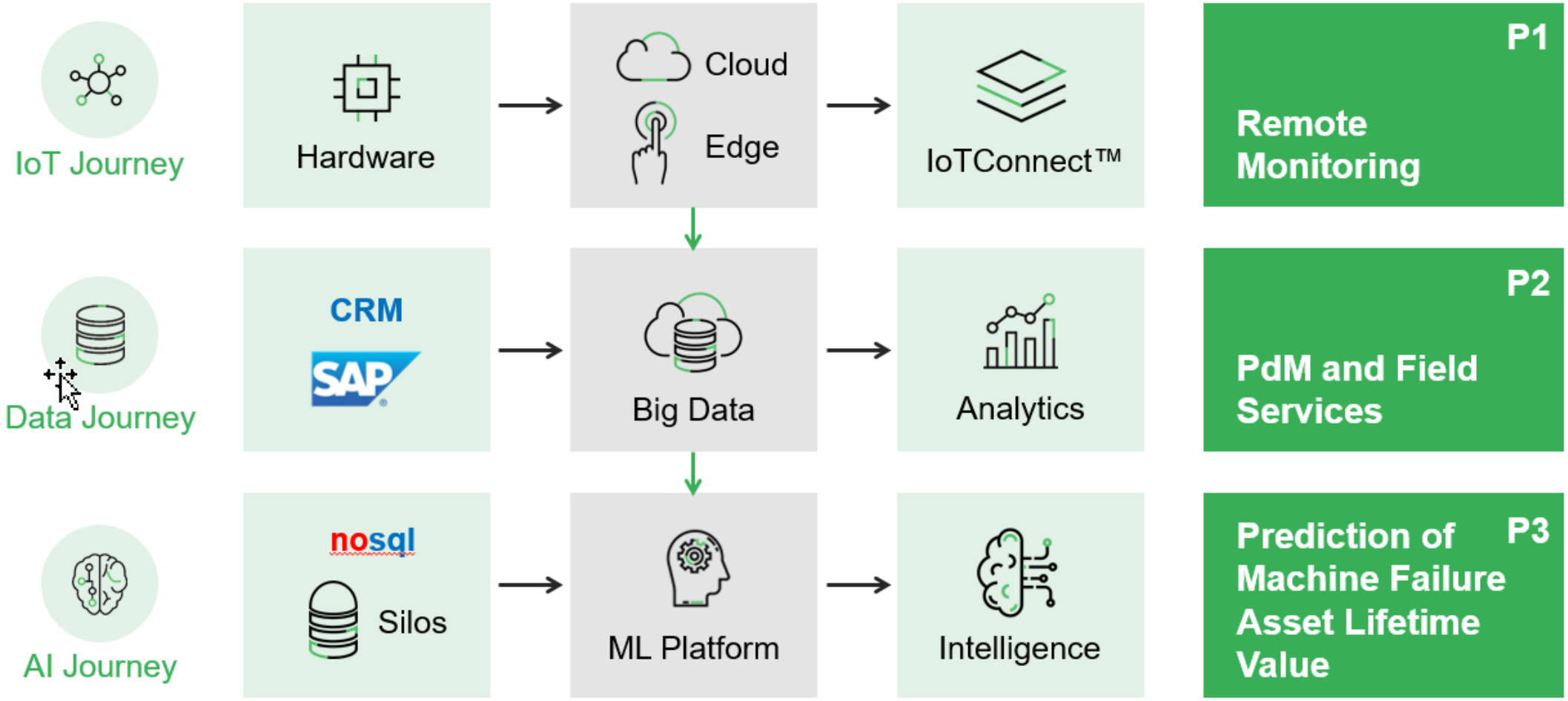


Customer Challenges

Tools used:

HOW TO **MONETIZE** THE IDEA	**Build With Program**: Business model workshops
HOW TO **ARCHITECT** THE SOLUTION	**Build With Program**: Architectural consultancy
HOW TO **BUILD** THE SOLUTION	**Avnet Integrated:** Design, Labs and BDM teams
HOW TO **SCALE** THE SOLUTION	**GTM:** Marketing Tune up and sales readiness

IoT Connect: A quick demo



Link to our IoT Connect knowledgebase https://knowledgebase.iotconnect.io/videos/

Reach Further™

Alastair Worth
+447872118257

AVNET®

Microsoft

Thank you!

© Copyright Microsoft Corporation. All rights reserved.