



Architecting the Intelligent Edge

Tim Symonds
IoT Technical Specialist

Chimène Bonhomme
Cloud Solution Architect

IoT in Action



IoT @ Symonds House



Slide 2

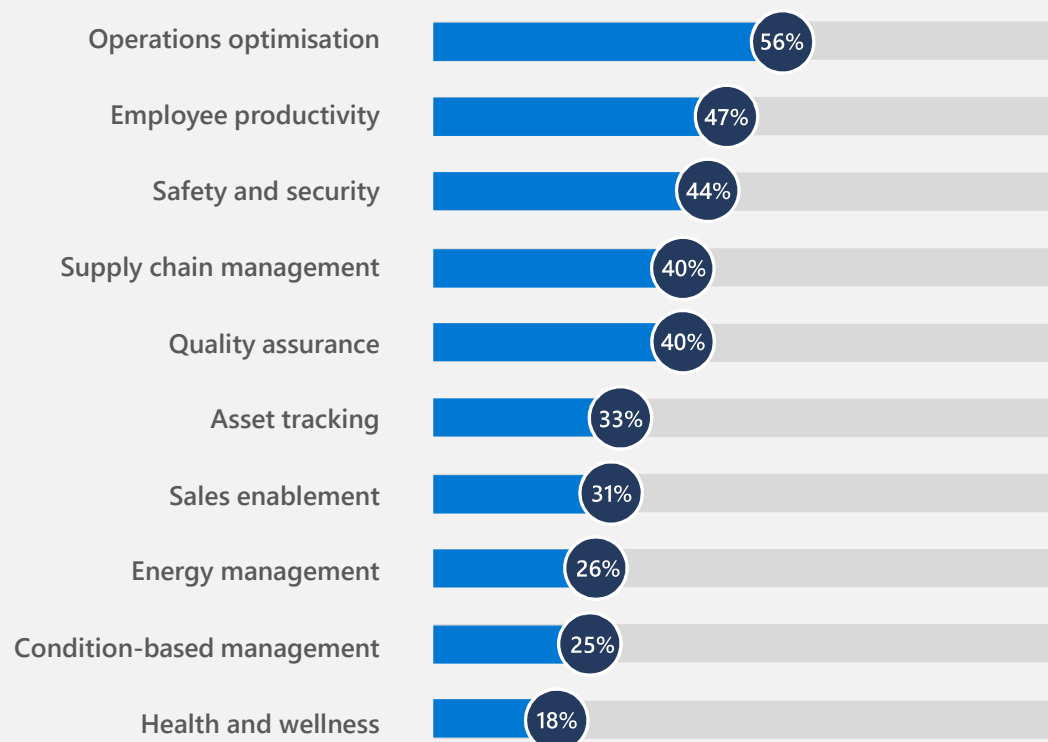
- TS5** Changed the order - Chimene what we are talking about today last
Tim Symonds, 11/3/2019
- TS6** AS you have the last point - do you want to do the segway?
Tim Symonds, 11/3/2019
- TS7** Your style
Tim Symonds, 11/3/2019



IoT Signals

SUMMARY OF RESEARCH LEARNINGS
2019

Reasons for IoT adoption





Challenge #1

Connecting devices – IoT Plug & Play

Challenge #2

Tech Complexity - IoT Central

Challenge #3

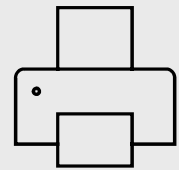
More IoT traffic creates more data

IoT in Action



We had a similar challenge in the past...

Challenge #1



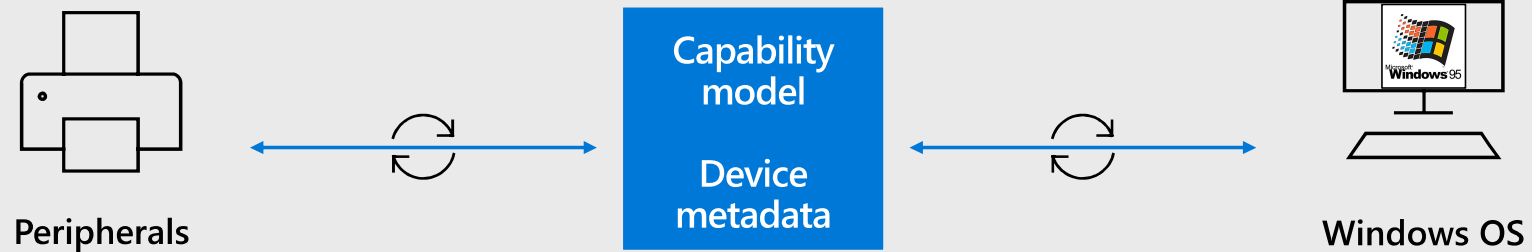
Peripherals



Windows OS

That was solved with Windows Plug and Play

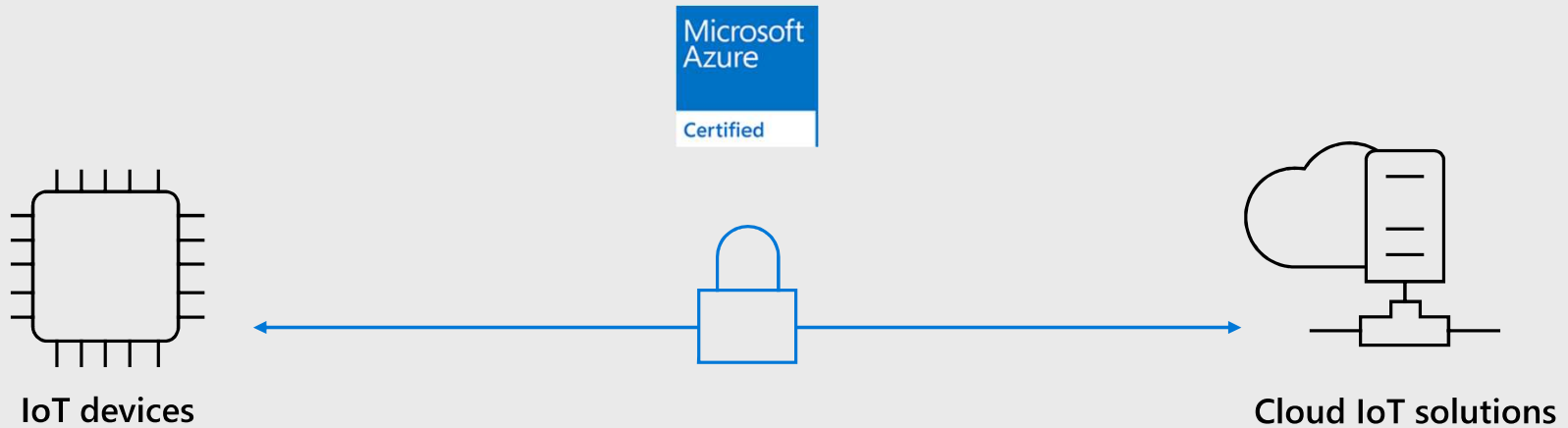
Challenge #1



Devices published their capability models and adhered to them
Windows used the capability model to know how to interact with them

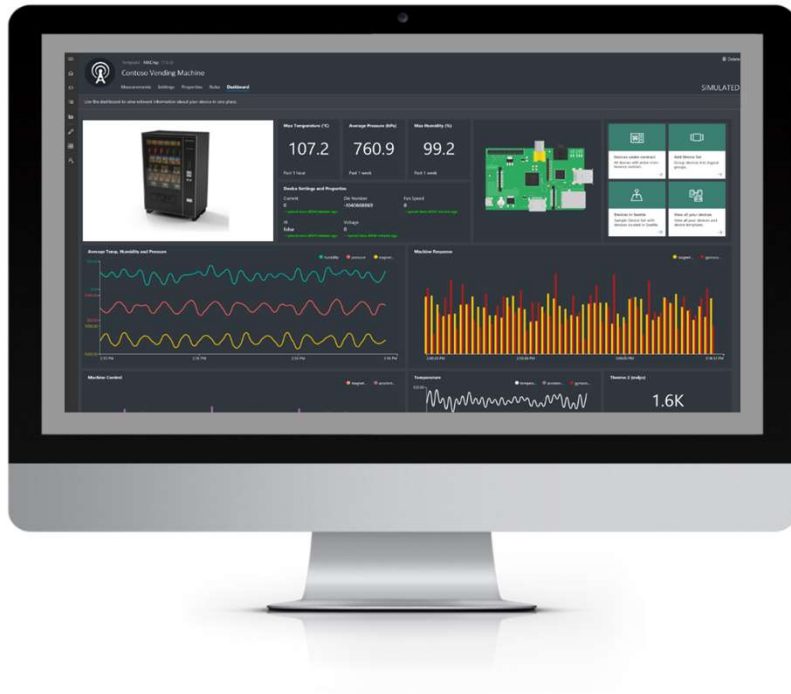
IoT today

Challenge #1 ✓











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

IoT Central



Challenge #2 ✓

-  SAAS – Industry Templates
-  User and identity management
-  No code/Low code
-  Device management
-  Analytics & dashboards
-  TSI – Azure Maps
-  Alerts and actions
-  IoT Edge

An aerial night view of a city grid, illuminated by streetlights and building lights. Overlaid on the image are several white dashed circles, each containing a white icon representing an IoT application: a lightning bolt (top left), a padlock (bottom left), a factory (top right), and a truck (bottom right). Thin white lines connect these circles to the central text area.

Challenge #3

More IoT traffic creates
more data



Architectural Design Sessions

IoT in Action



TS4



Slide 11

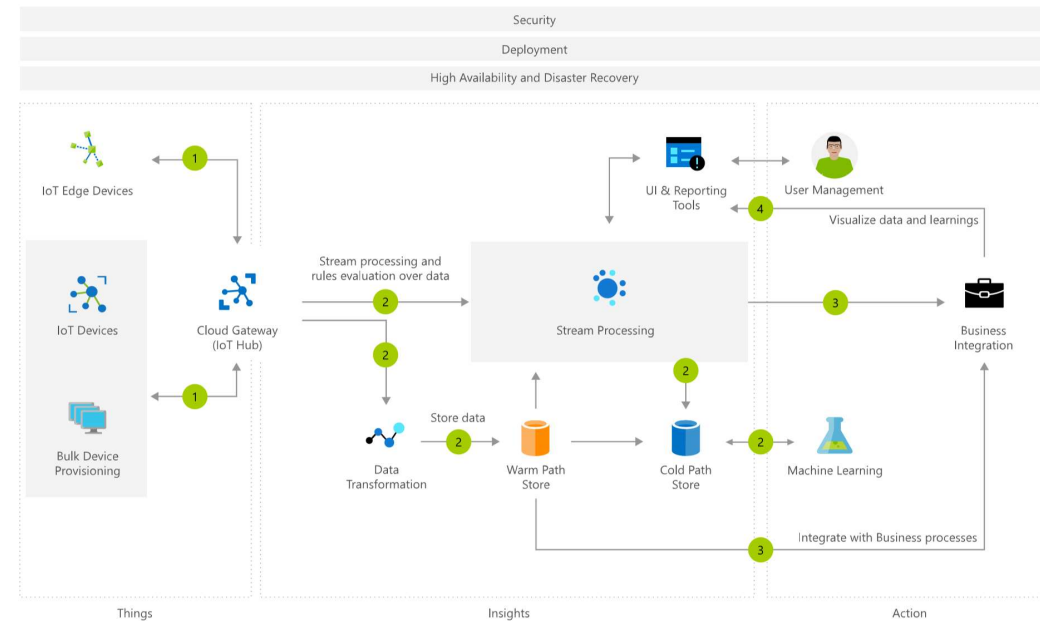
TS4

Should we move this in front of the ADS slides?

Tim Symonds, 11/2/2019

Azure IoT Subsystems

- 1 Devices send telemetry records or events to the cloud gateway
- 2 The following steps happen in parallel:
 - Stream processing & rules evaluation is done for device telemetry records & events.
 - Device telemetry data is transformed (if needed).
 - Device data telemetry is stored.
- 3 Business process integration is executed.
- 4 Device information is visualised & displayed in the UI.



Challenges for teams

Organisational

- Teams often work in a bit of a 'silo'
- Mismatch in skills to move beyond experimentation
- Limited ROI on investments
- More need for structure in projects
- Development teams not working at same release cycle

Technology / Process

- Going from experimentation to production
- Scale from local prototyping to larger data sets / compute.
- Device deployment and management
- Monitoring devices in production
- Lineage, auditing and explainability

Architectural design sessions with Microsoft

How you benefit



Get direct assistance
from Azure Experts



Learn how to develop
successful Azure deployments



Accelerate deployment
of Azure solutions

What these programs provide

DISCOVERY

Help defining your business vision
and goals and assessing your
architectural needs

SOLUTION ENABLEMENT

Proven practices, design principles,
and tools for your business applications

DEPLOYMENT

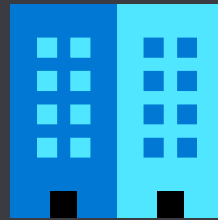
Collaboration with your
in-house resources and partners
to successfully deploy your
Azure solutions to production

Making it happen

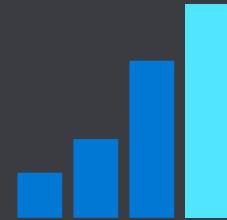
Architectural Design Sessions



Art of the possible
workshop



Business transformation
workshop



Solution accelerator
workshop



Partners make **more** possible





Jourdan Templeton
CTO

**We leverage audio, video and IoT
data to build AI solutions for
our customers.**





PORT OTAGO

+



AWARE
GROUP

Port Otago

Noise Classification

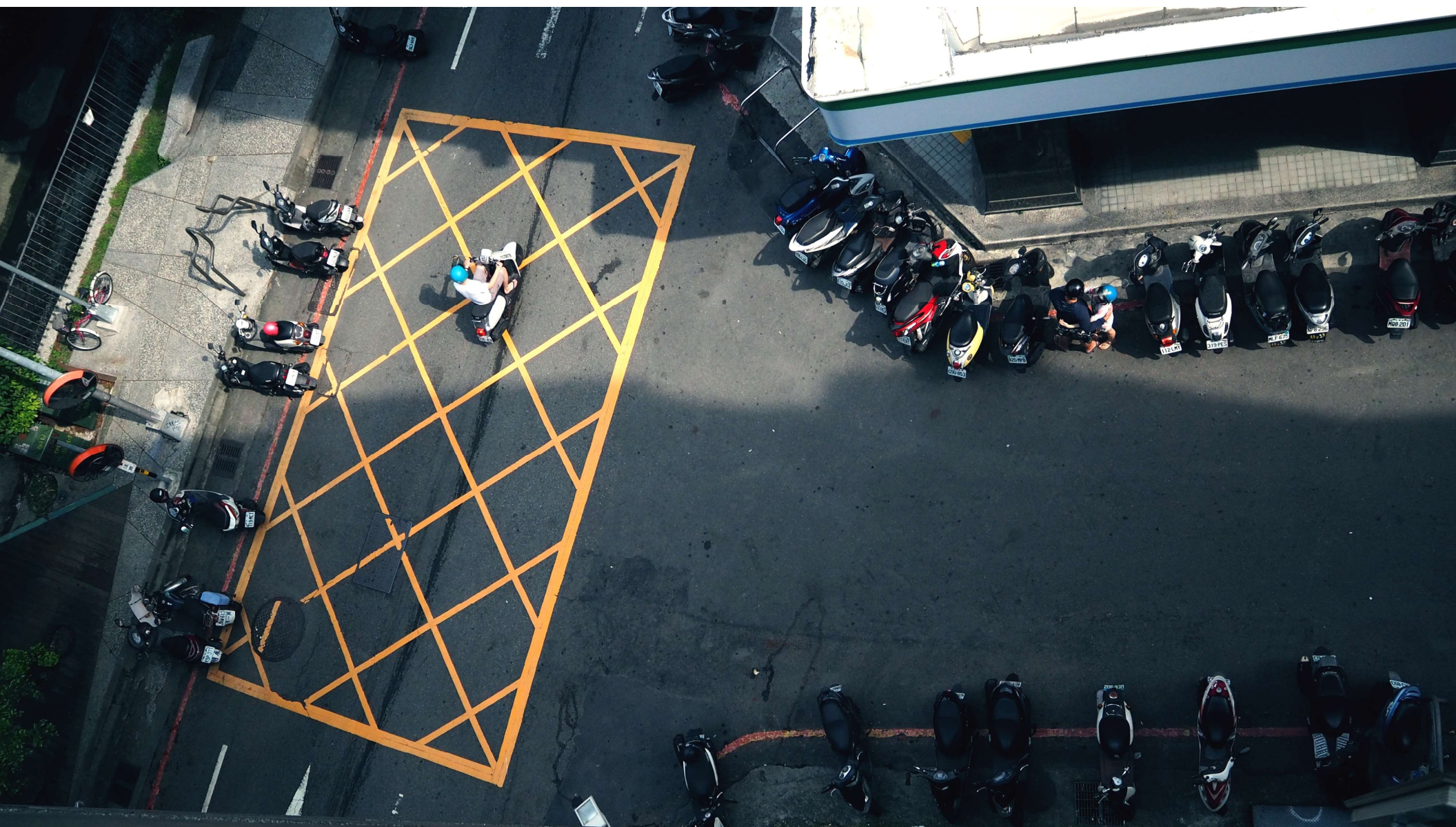








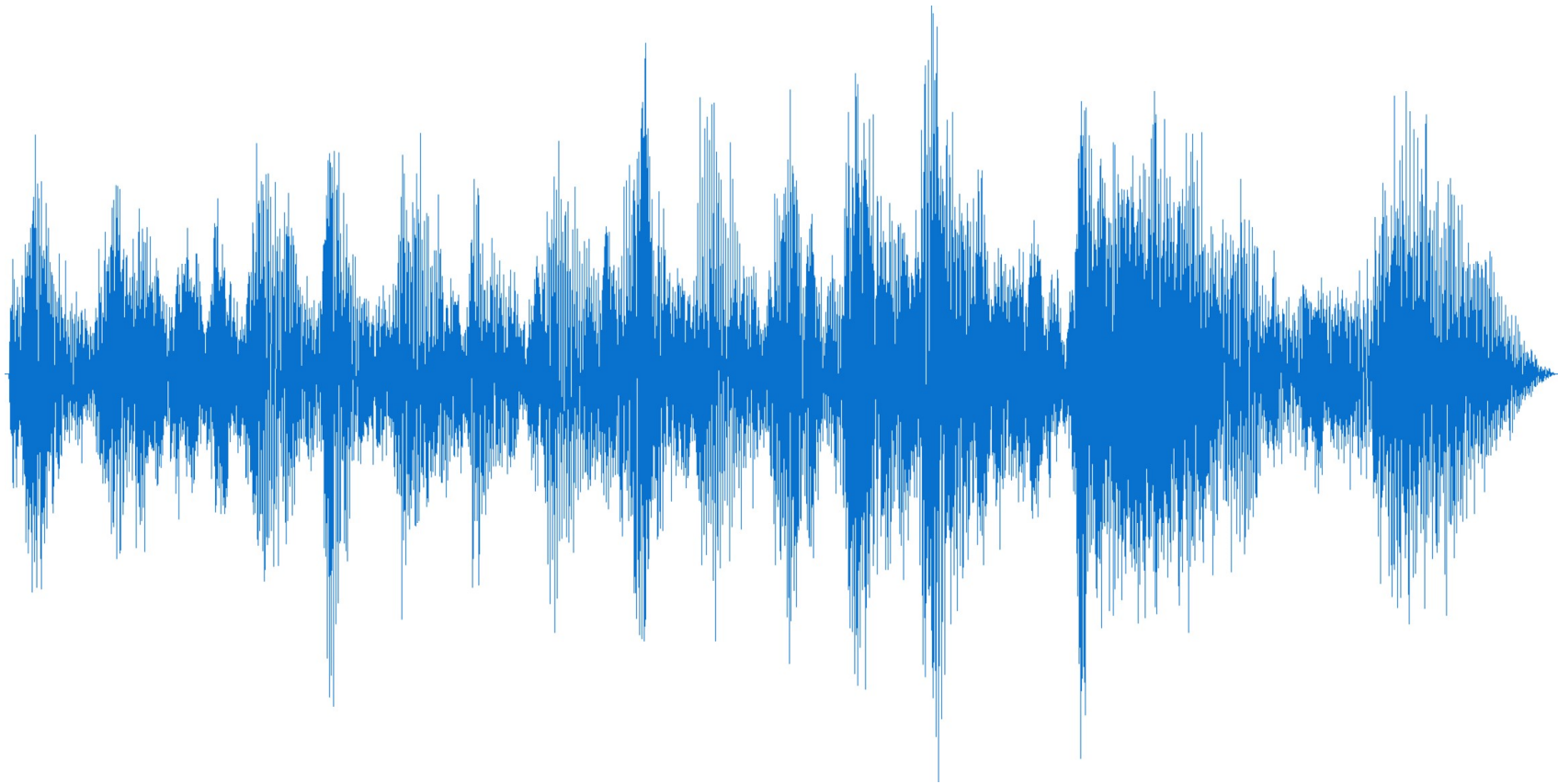






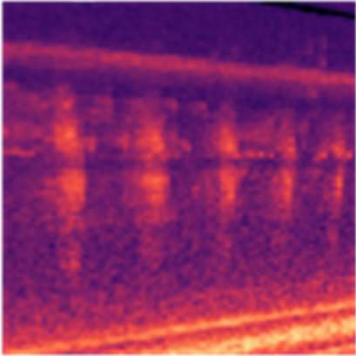


Digital Signal Processing

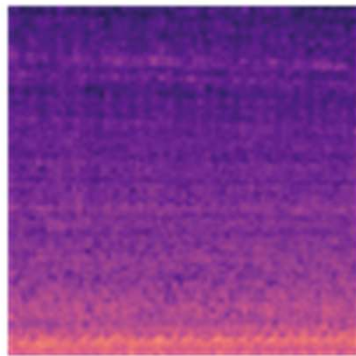


Computer Vision on Audio

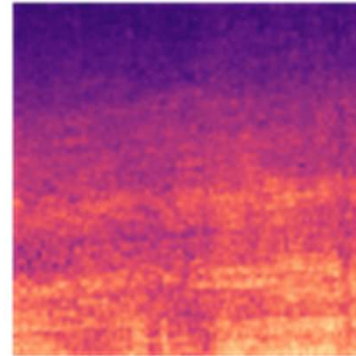
air_conditioner



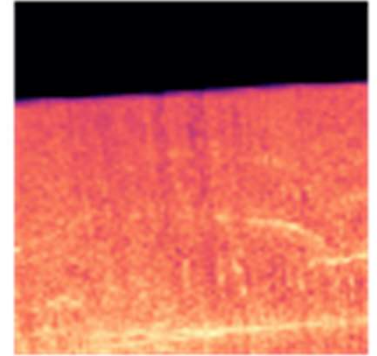
engine_idling

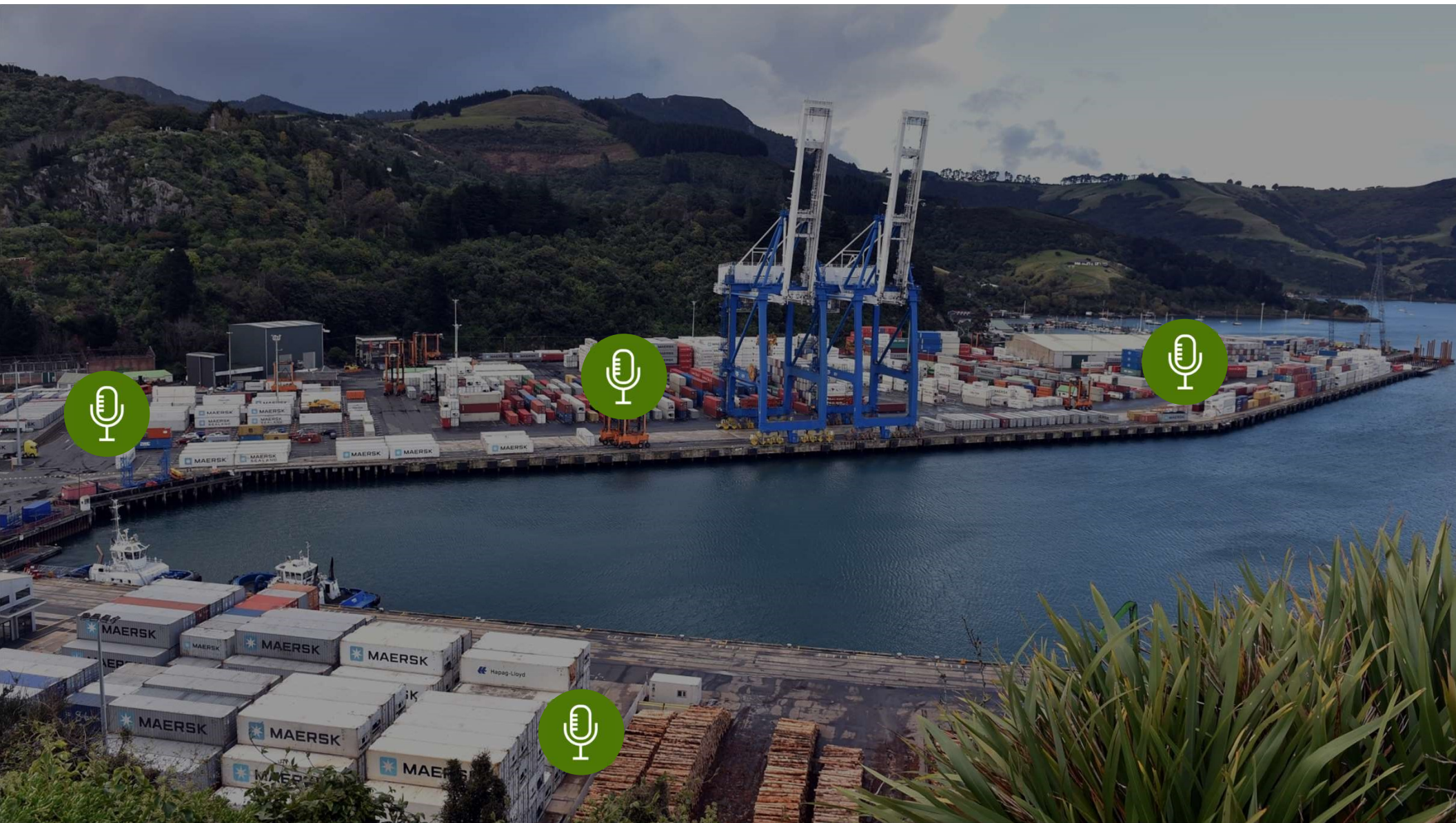


drilling



siren





Winner

AZURE INNOVATE AWARD

 **AWARE**
GROUP

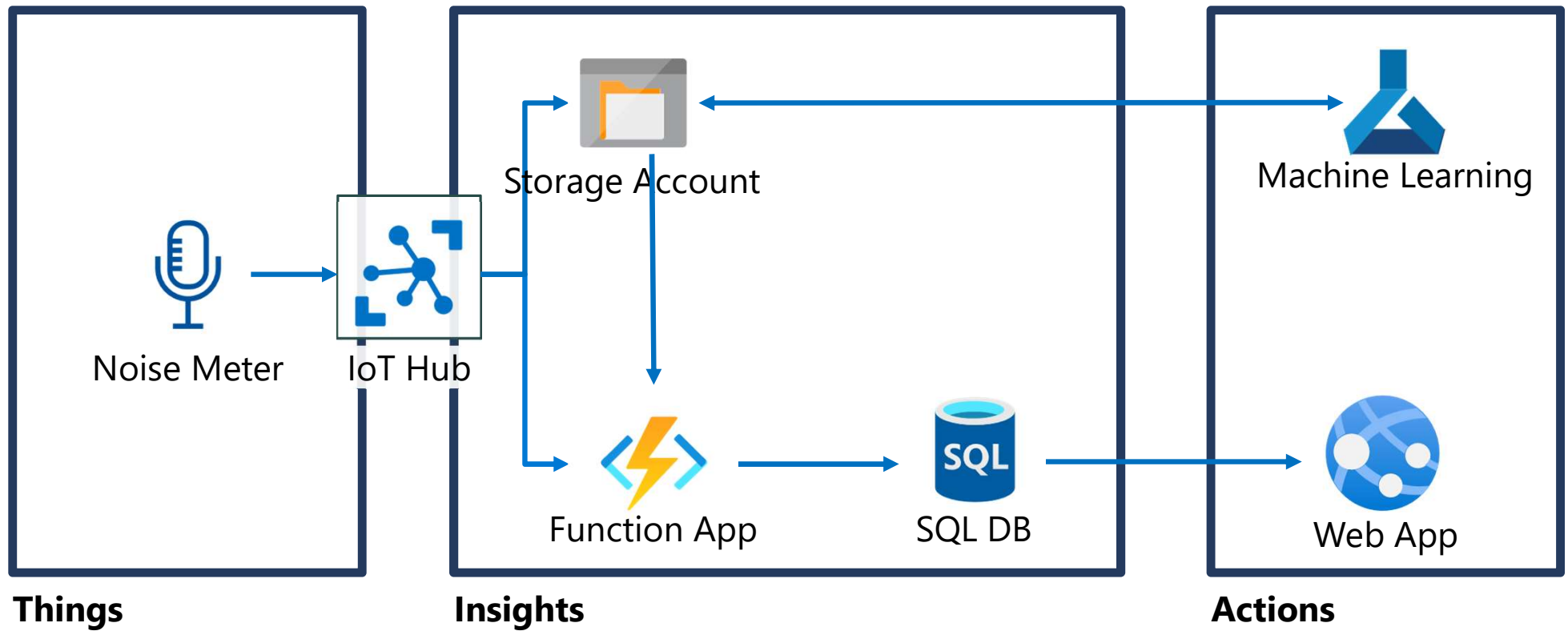
ENTRY
PORT OTAGO



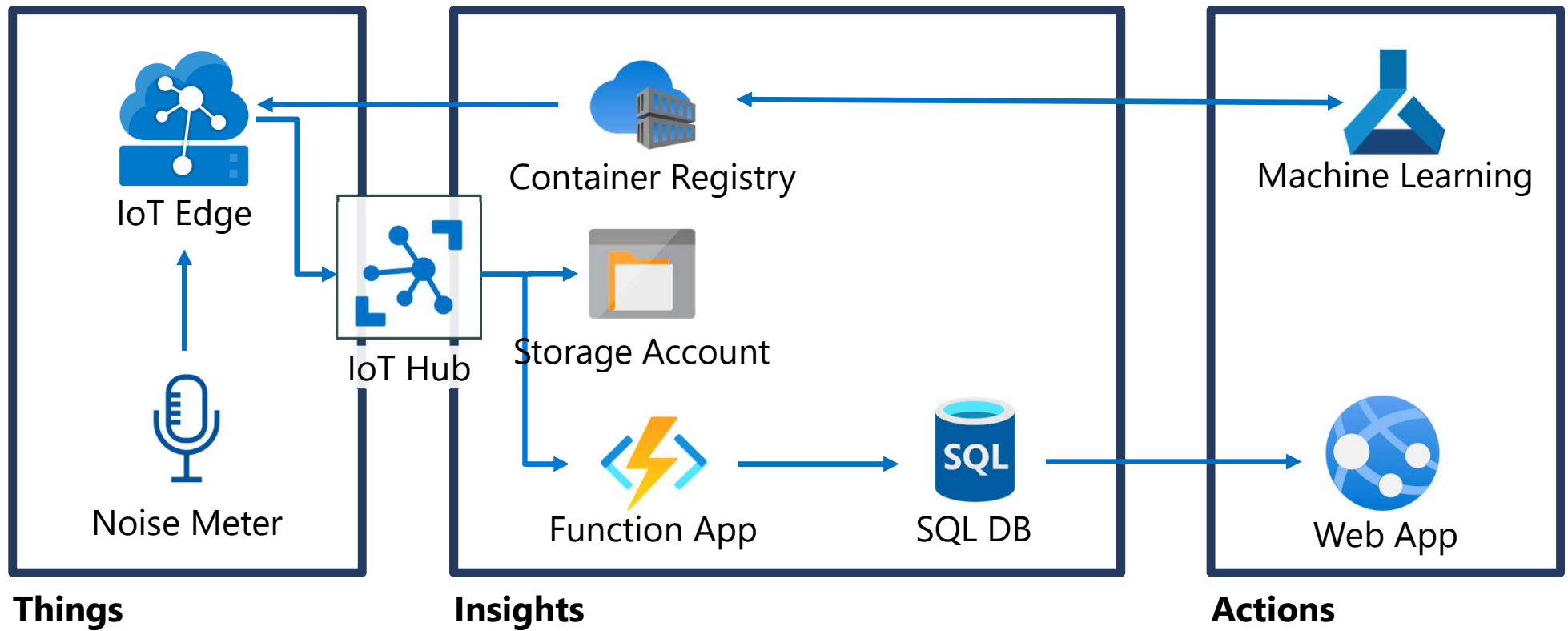
Audio Classification Demo



Architecture v1



Architecture v2



Let's work together.

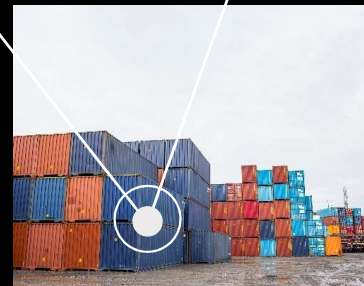
Find us at the expo area and at:

www.awaregroup.com
info@awaregroup.com



Azure IoT

Transforming your business



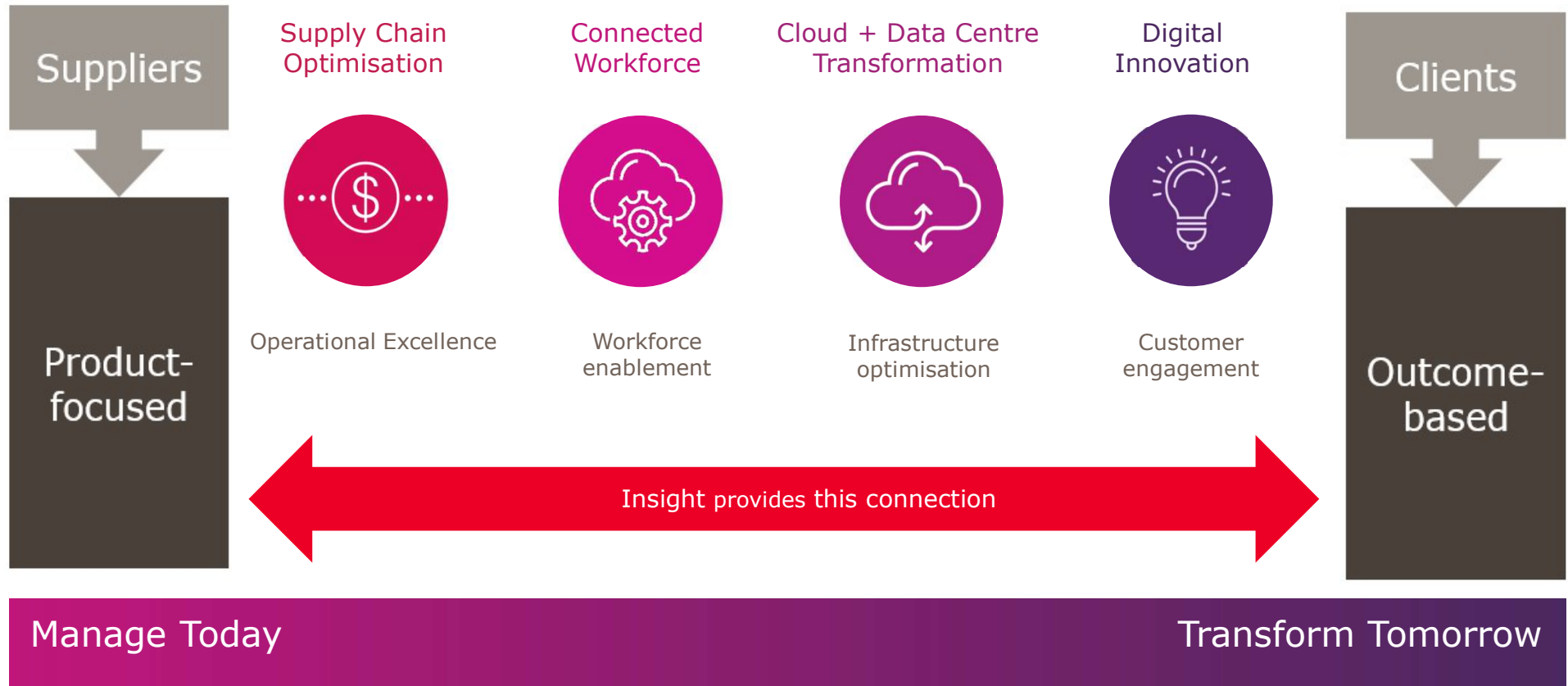


Richard Lee
Principal Consultant

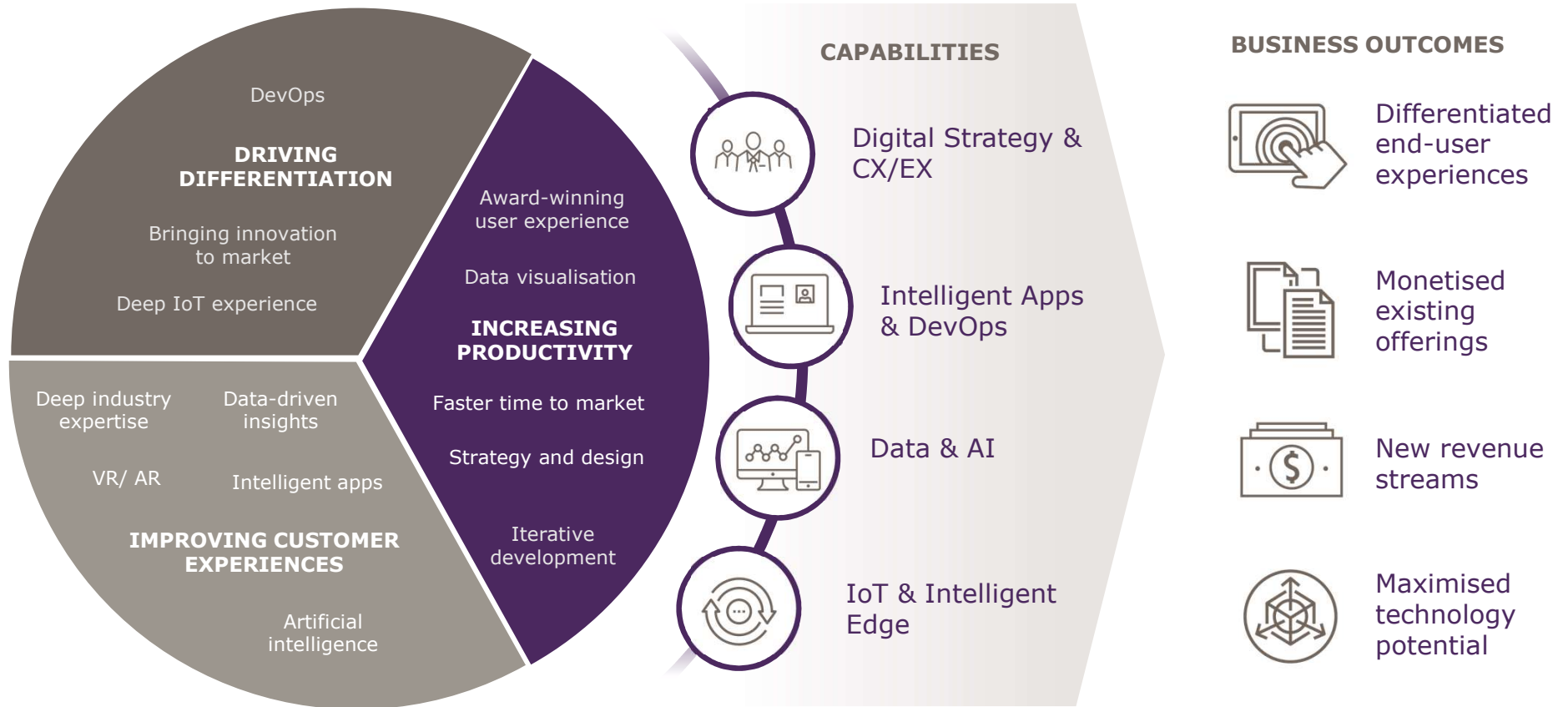
IoT in Action



We help you achieve your goals



Our approach





What's standing in the way of situational awareness?

A gap in communicating and monitoring situations

Currently, there are no reliable ways to detect threatening situations and communicate specific details about those threats to large numbers of people at the same time.

No two-way communication

Because it's difficult to manage and control mass communication, security operations are often challenged to make judgement calls to mitigate or resolve situations. Additionally, there are no formal channels of communication between authorities and the general public.

A lack of standardized processes

When it comes to public safety, it's imperative to put standardized procedures in place to maximize safety, help people remain calm and informed, and target efforts to resolve issues quickly.

So how can we create situational awareness?



Keep communities connected and in contact.



Create safety notifications and alerts.



Develop flexible and integrated safety solutions.

Examples of extending the platform



In-room buttons

Once pressed, alarms send alerts to the Safe Spaces emergency notification system.



Color-coded lights

Signals based on proximity to danger guide people to safety with red, yellow and green illumination.



Sound sensors

Installed sound indicators help you monitor unusually loud noises so you can send someone to investigate.



Interactive floorplans

Provide administrators and first responders with immersive building plans for accurate reporting.

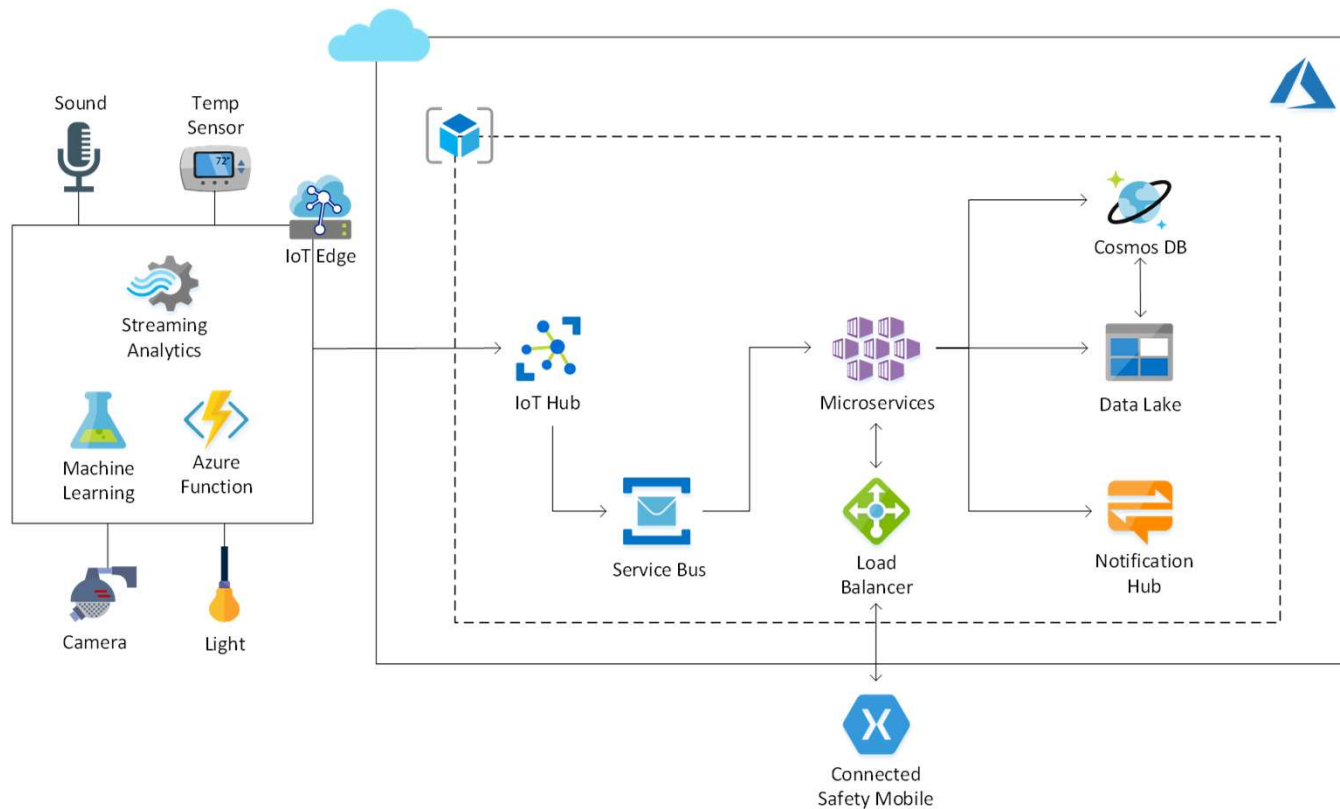


Security systems

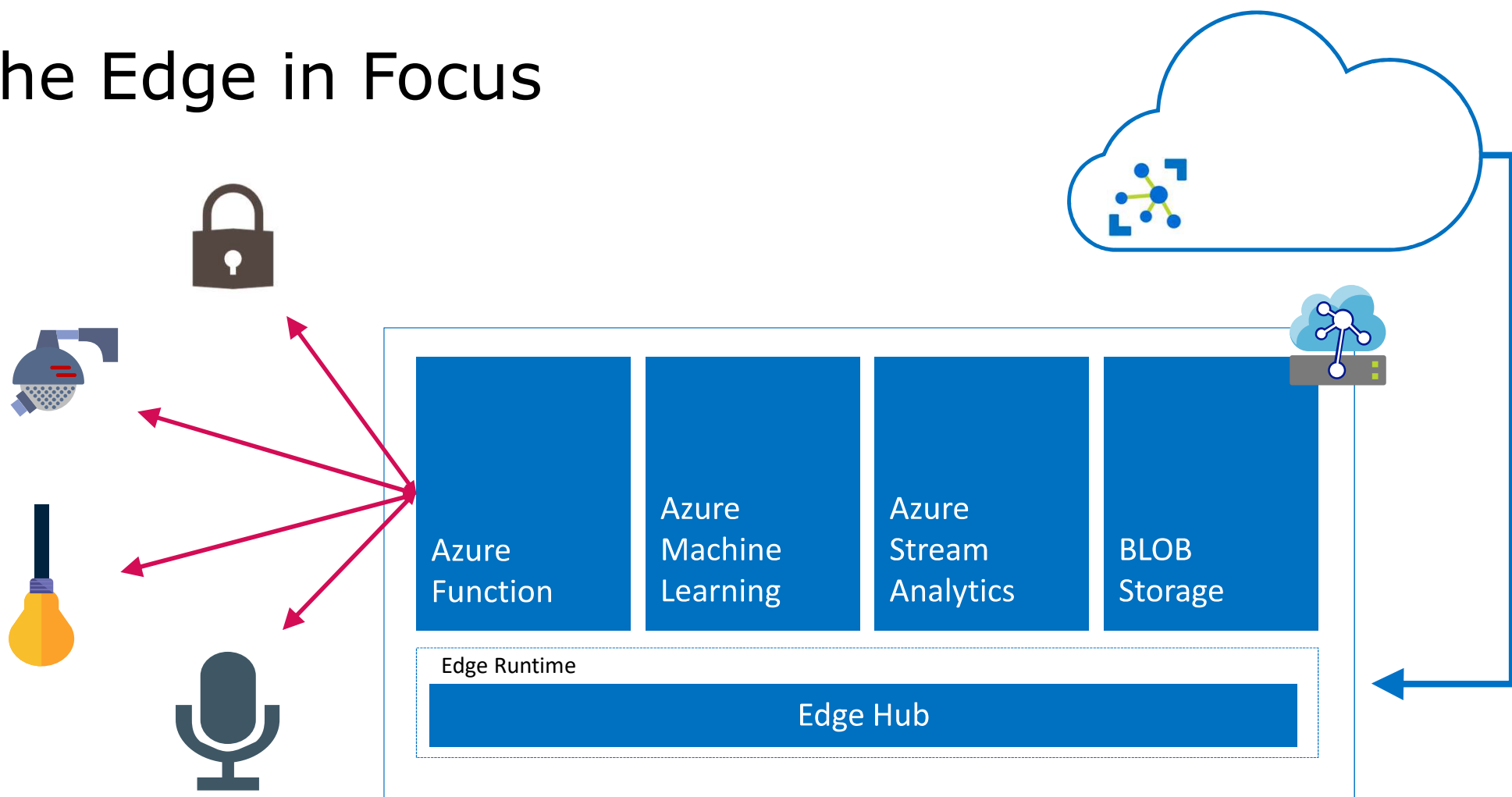
Integrate security camera systems, alarms and access control panels to ensure safety across buildings.

DEMO HERE

Overall Architecture



The Edge in Focus





Richard Lee

Principal Consultant



richard.lee@insight.com



[in/richardleeaus/](https://www.linkedin.com/in/richardleeaus/)



???!



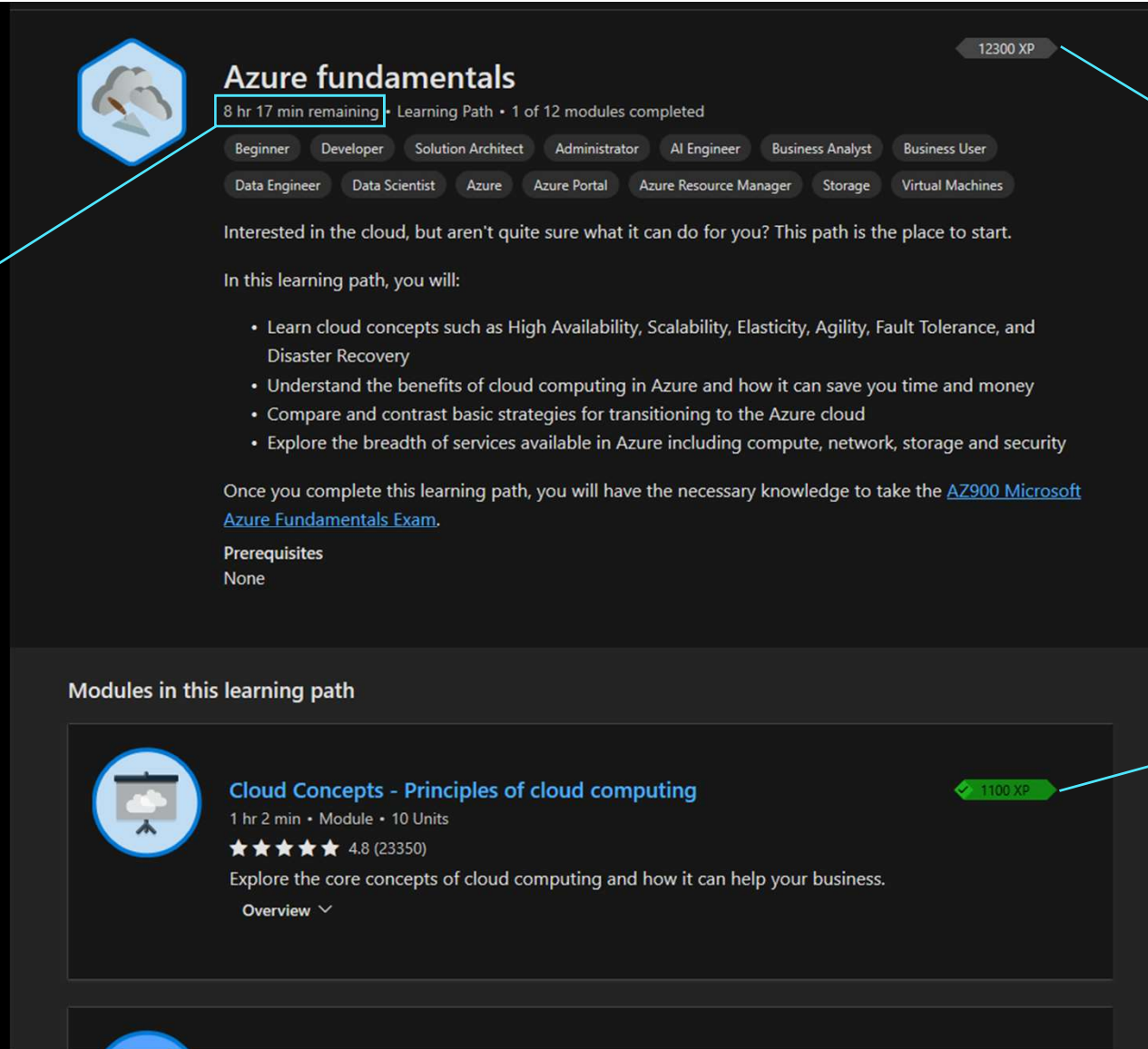
Welcome to Microsoft Learn

microsoft.com/learn



Microsoft.com/learn

Time
investment
expectation



The screenshot displays the 'Azure fundamentals' learning path on the Microsoft Learn platform. At the top, a profile icon is followed by the path title 'Azure fundamentals' and a progress indicator showing '8 hr 17 min remaining' and '1 of 12 modules completed'. A row of role-based filters includes Beginner, Developer, Solution Architect, Administrator, AI Engineer, Business Analyst, Business User, Data Engineer, Data Scientist, Azure, Azure Portal, Azure Resource Manager, Storage, and Virtual Machines. Below this, a brief introduction states that the path is for those interested in the cloud but unsure of its capabilities. A list of learning outcomes follows, covering cloud concepts, benefits of Azure, transition strategies, and available services. A completion note mentions the 'AZ900 Microsoft Azure Fundamentals Exam'. The prerequisites are listed as 'None'. The 'Modules in this learning path' section features a card for the first module, 'Cloud Concepts - Principles of cloud computing', which includes a presentation icon, duration (1 hr 2 min), unit count (10 Units), a 4.8 star rating from 23350 reviews, a description, and an 'Overview' dropdown. A green XP badge for 1100 XP is shown next to the module card.

Azure fundamentals

8 hr 17 min remaining • Learning Path • 1 of 12 modules completed

Beginner Developer Solution Architect Administrator AI Engineer Business Analyst Business User
Data Engineer Data Scientist Azure Azure Portal Azure Resource Manager Storage Virtual Machines

Interested in the cloud, but aren't quite sure what it can do for you? This path is the place to start.


In this learning path, you will:

- Learn cloud concepts such as High Availability, Scalability, Elasticity, Agility, Fault Tolerance, and Disaster Recovery
- Understand the benefits of cloud computing in Azure and how it can save you time and money
- Compare and contrast basic strategies for transitioning to the Azure cloud
- Explore the breadth of services available in Azure including compute, network, storage and security

Once you complete this learning path, you will have the necessary knowledge to take the [AZ900 Microsoft Azure Fundamentals Exam](#).

Prerequisites
None

Modules in this learning path

 **Cloud Concepts - Principles of cloud computing** 1100 XP

1 hr 2 min • Module • 10 Units
★★★★★ 4.8 (23350)

Explore the core concepts of cloud computing and how it can help your business.

Overview ▾

Total XP=
12,300

Module XP=
1,100

Leveling up your Azure skills with Microsoft Learn



