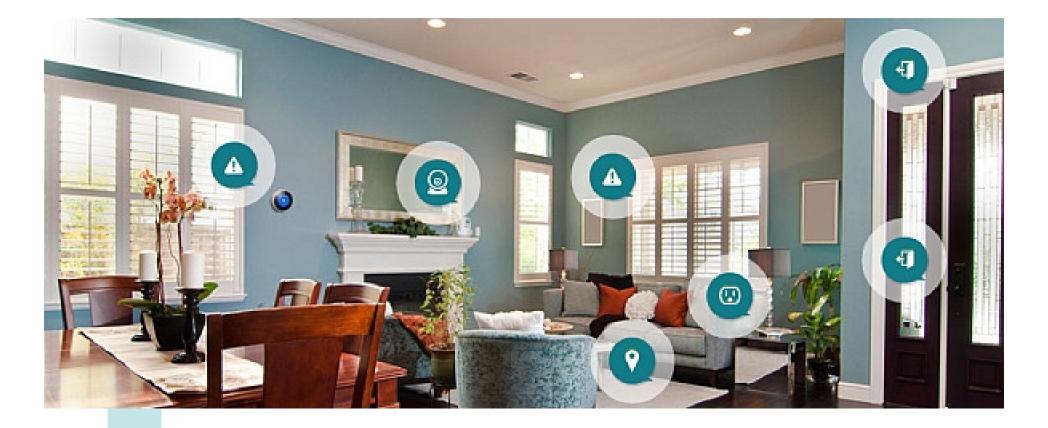


Connecting the dots

John Koot 9/25/2015



Connecting the dots

John Koot 9/25/2015

2

Introduction



John Koot Windows Embedded / IoT MVP Iot Business Development Manager

<u>John.Koot@ict.nl</u> +31 6 2708 7406



9/25/2015

3

Presentation title

What is it



What is the Internet of Things?

Things	Connectivity	Data	Analytics
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Presentation title

The Internet of Things can seem...



So many devices and so much data



...CONFUSING So many possible decisions

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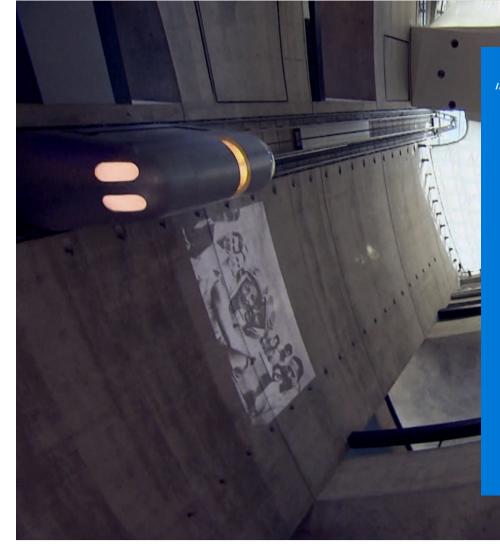


Where do our customers see the opportunity?



Presentation title

Customer



"We wanted to go beyond the industry standard of preventative maintenance, to offer predictive and even preemptive maintenance, so we can guarantee a higher uptime percentage on our elevators."

ANDREAS SCHIERENBECK CEO THYSSEN KRUPP ELEVATORS







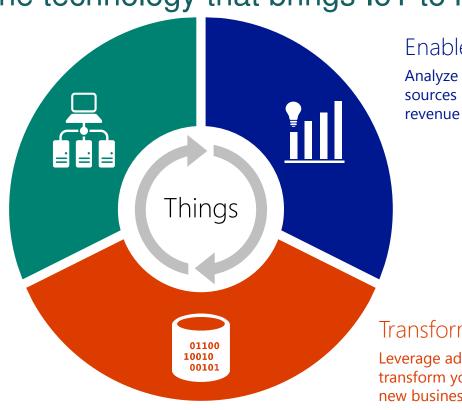


Why Microsoft?

Microsoft has the technology that brings IoT to life

Improve efficiency

Monitor and track the health of your assets to reduce costs



Enable innovation

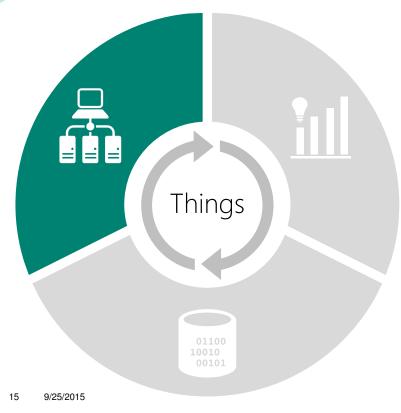
Analyze data from multiple sources in real time to drive revenue

Transform your business

Leverage advanced analytics to transform your business by creating new business models and revenue streams

ICT ⁺

Improve efficiency



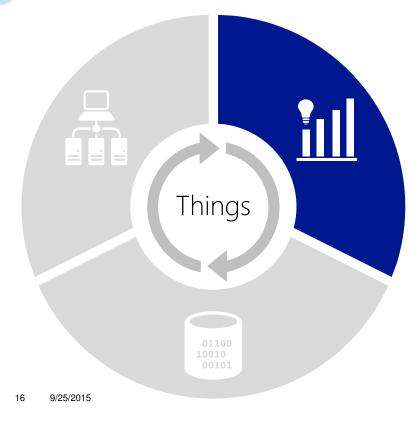
Monitor and track the health of your assets to reduce costs

Reduce the burden of connecting disparate line of business assets

Log millions of events per second in near real time

Establish rules and alerts for proactive monitoring

Enable innovation



Analyze data from multiple sources in real time to drive revenue

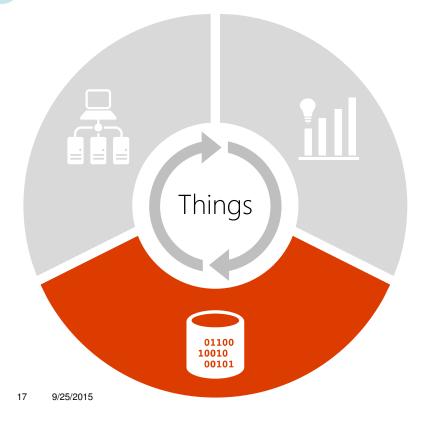
Uncover real time insights from streaming data and events

Predict future outcomes by combining live operational data with historical data

Notify the right team or department in your business when action is needed

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Transform your business



Leverage advanced analytics to transform your business by creating new business models and revenue streams

Microsoft's data platform and solutions empower enterprises to transform the raw data from its "things" into actionable insights and business results.

Microsoft's Approach to IoT



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Architecture

ІСТ≁

Comprehensive solutions from device to cloud



IoT Editions Power a Broad Range of Devices

20 years of history in embedded devices

One Windows platform for all devices

Enterprise-ready, Maker-friendly

Designed for today's IoT environments

Free IoT Core edition!

Cloud-Based IoT Services & Solutions

Easy to provision, use and manage

Pay as you go, scale as you need

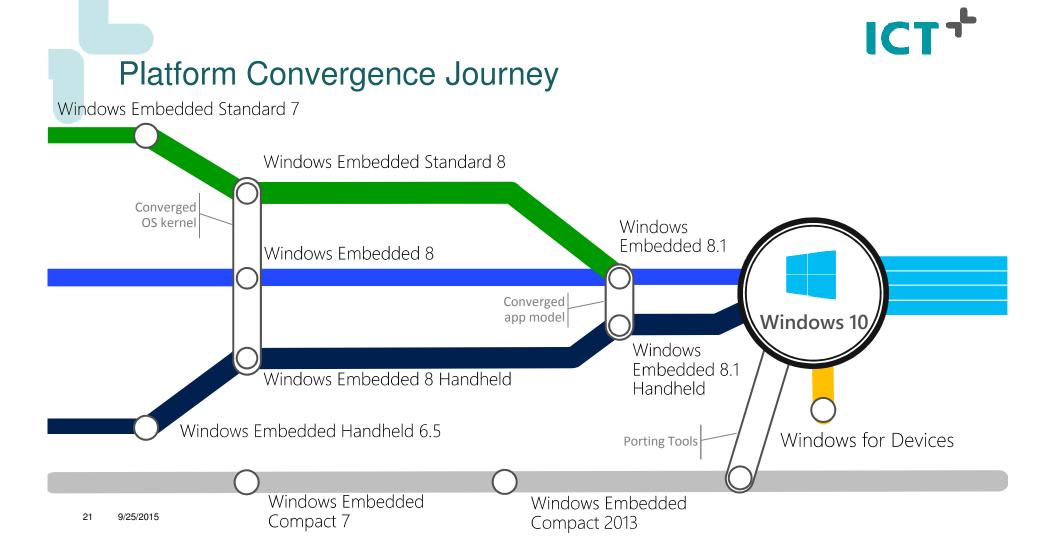
Global reach, hyper scale

Azure IoT

End-to-end security & privacy

Windows, Mbed, Linux, iOS, Android, RTOS support

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Windows 10 IoT Editions

Windows 10 IoT for industry devices

Desktop Shell, Win32 apps, Universal apps and drivers Minimum: 1 GB RAM, 16 GB storage X86/x64

Windows 10 IoT for mobile devices

Modern Shell, Mobile apps, Universal apps and drivers Minimum: 512 MB RAM, 4 GB storage ARM

Windows 10 IoT Core

Universal Apps and Drivers No shell or MS apps Minimum: 256MB RAM, 2GB storag X86/x64 or ARM



3

Windows Updates

0

Security & Identity



Visual Studio & UWP



New User Interfaces



Integrated Device Connectivity



Microsoft Azure IoT

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Cloud Based IoT Solutions

Azure IoT

Easy to provision, use and manage

Pay as you go, scale as you need

Global reach, hyper scale

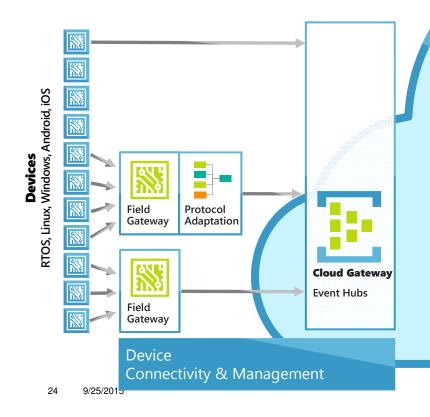
End to end security & privacy

Three parts of an IoT solution

- Device connectivity & management
- 2 Analytics & operationalized insights
- 3 Presentation & business connectivity

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IoT Device & Cloud Patterns

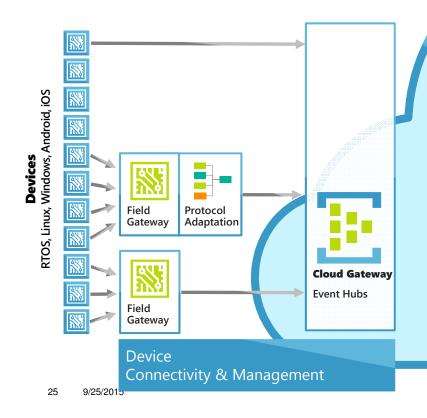


Event Hubs

- High scale telemetry ingestion service
- HTTP/AMQP protocol support
- Each Event Hub supports
 - 1 million publishers
 - 1GB/s ingress
- Generally available worldwide
 - 18 Billion messages per day
 - 60+ TB ingested per day

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IoT Device & Cloud Patterns

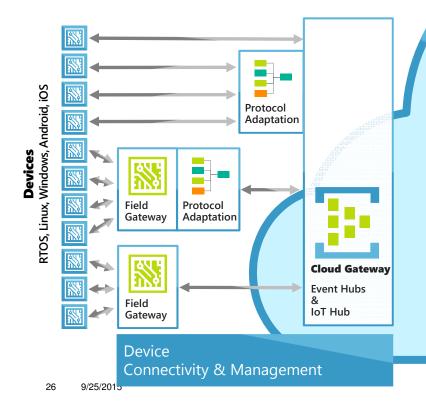


Additional IoT Needs

- Command & control
- Device identity
- Device registry
- Device management

Coming with the Azure IoT Suite...

IoT Device & Cloud Patterns

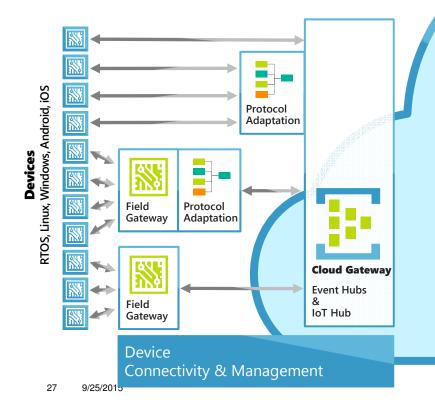


loT Hub

- Capability of the Azure IoT Suite
- Bi-directional device <-> cloud
- Up to 10 million devices
- Telemetry ingestion
- Command & control
- Device registry & identity
- Device Management
- HTTP/AMQP
- Extensible protocol support / MQTT

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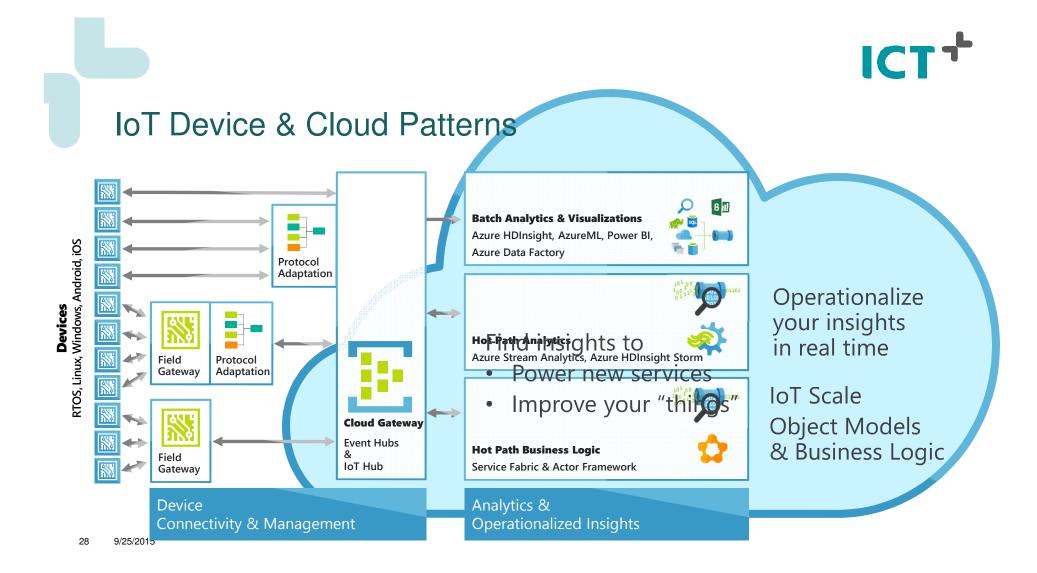
IoT Device & Cloud Patterns

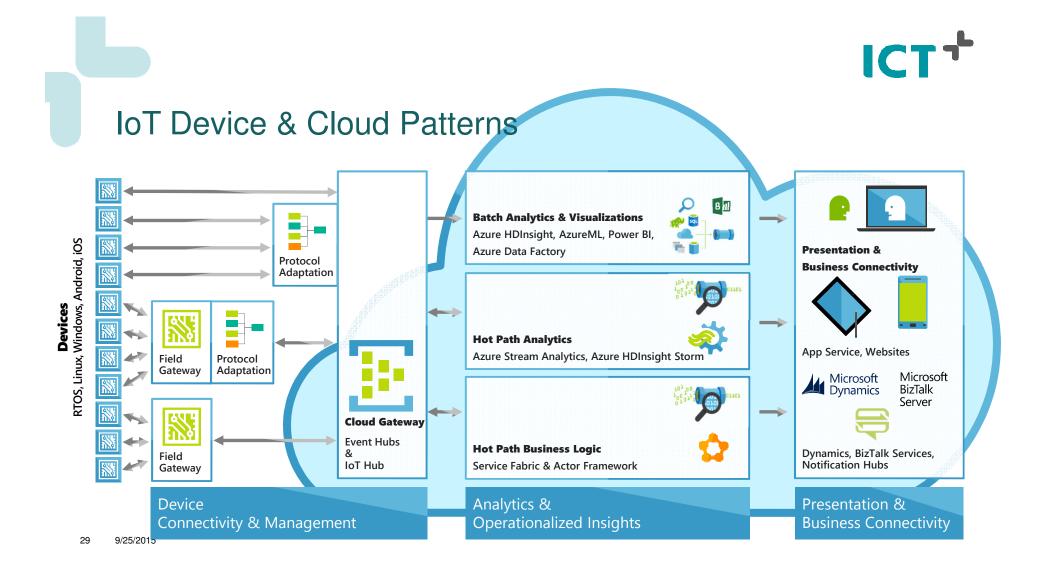


Cross-Platform Device Support

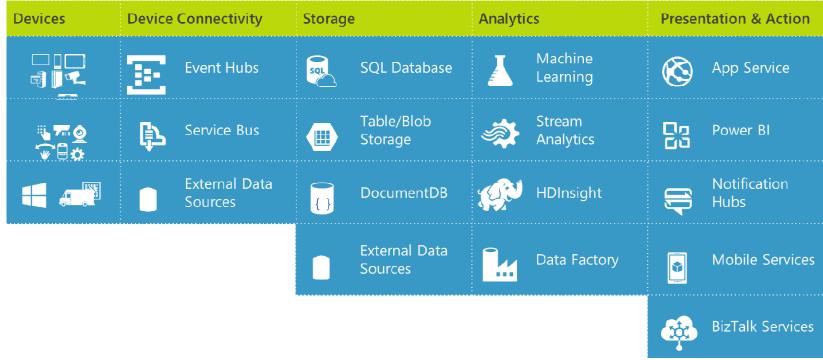
- Open source "agent" framework
- Simple, secure device <-> cloud connectivity & management
- RTOS, Linux, Windows, Android, iOS
- Easy to use, not required







Microsoft Azure IoT services



Coming Soon: Microsoft Azure IoT Suite

Accelerate time-to-value

- Easy deployment of IoT applications for the most common use cases
- Remote monitoring, asset management, and predictive maintenance

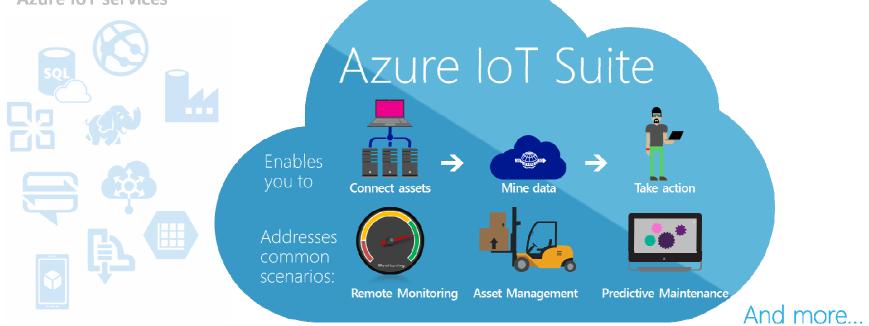
Simplified & predictable billing

- Plan and budget appropriately through a simple predictable business model
- Scale to meet your needs without redesigning
 - Start with a proof of concept
 - Grow and extend to support millions of assets without redesigning

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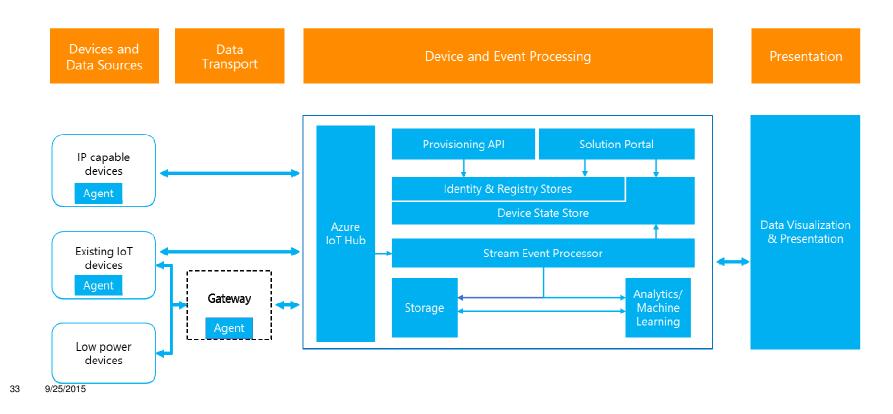
Accelerate your business transformation

Azure IoT services



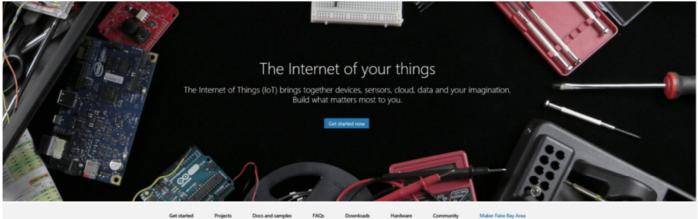
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Azure IoT Services Reference Architecture



Start small, grow fast

Windows Developer Program for IoT



Device connectivity

Leverage the power of open frameworks like Connect-

Leverage the power of open mameworks like Connectthe-Dots to help connect your devices to Microsoft Azure. Microsoft Azure allows you to implement great solutions by leveraging advanced analytics services.

Windows IoT device

Rapidly prototype and build your Windows IoT solutions on a variety of devices running Windows 10 IoT Core. Windows 10 gives you powerful tools that let you develop fast and deploy to your device.



Connect with other makers to share code and make contributions through GitHub. Join the community to influence future releases of the SDK.

https://dev.windows.com/en-US/iot

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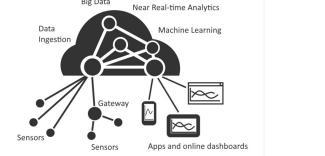
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ConnectTheDots.io

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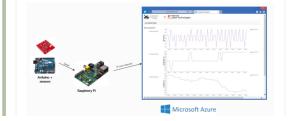


Microsoft Open Technologies



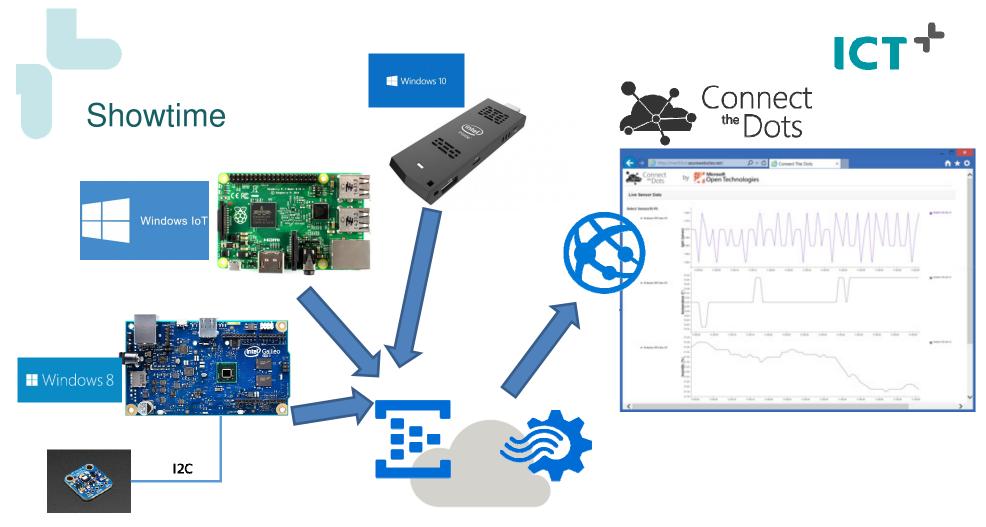
In this project there are code samples, configuration scripts and guides that will help you set up devices and sensors, and configure Microsoft Azure services to view and analyze the data produced by those devices. Some of these samples have been provided by MS Open Tech, others by third parties; we encourage everyone to submit code samples or configuration documentation to grow this project.

A good first task, which we are calling the "Connect The Dots starter solution" is to build a simple temperature sensing network. It can be built quickly and easily with minimal knowledge of programming or Microsoft Azure, using commodity devices available locally or online - for example an Arduino UNO board with a weather shield, connected to a Raspberry Pi sending data to an Azure website.



~

ShowTime



Intelligence Connected Together

