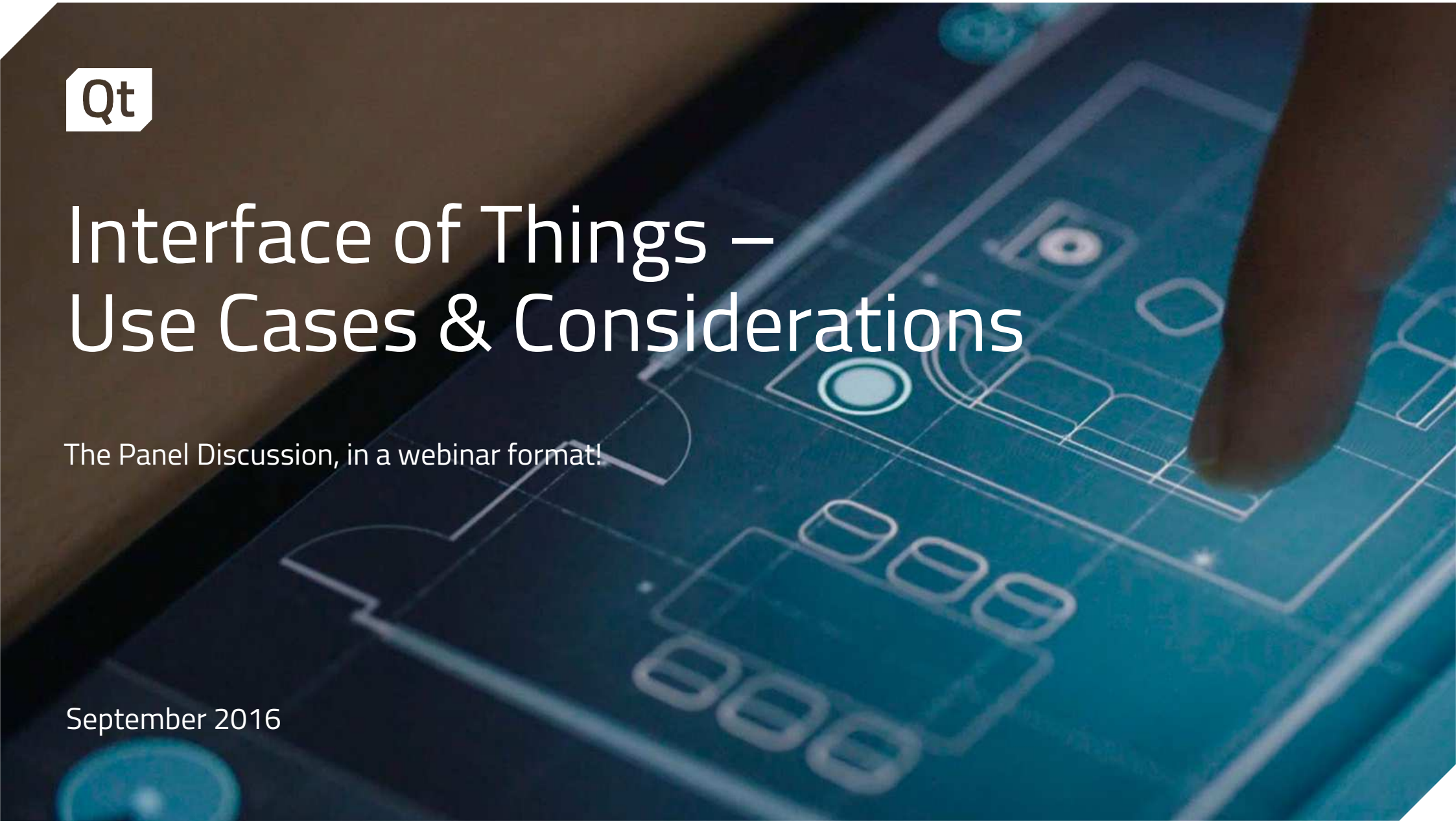

Interface of Things – Use Cases & Considerations

The Panel Discussion, in a webinar format!

September 2016

Your Hosts Today

Tuukka Ahoniemi

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Engineering Director

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Director of Product Management, VxWorks

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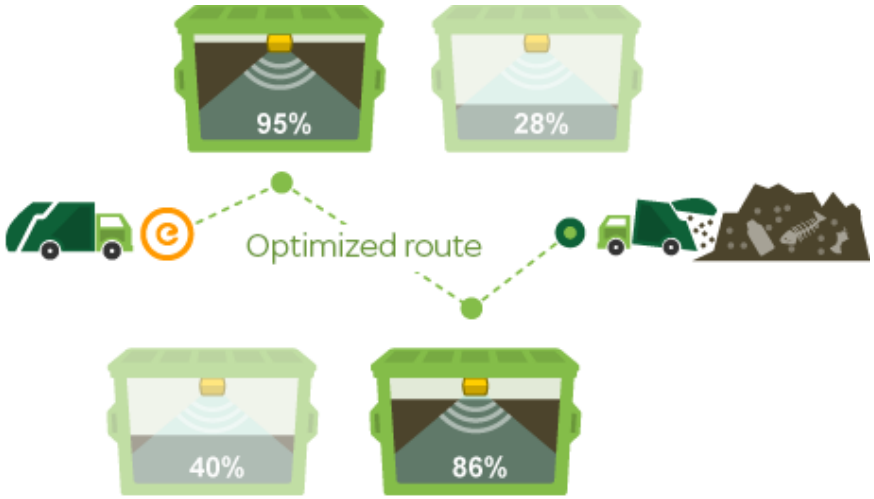
Wearables, Health sensors

Smart Homes

Connected Cars

Industry

Agriculture

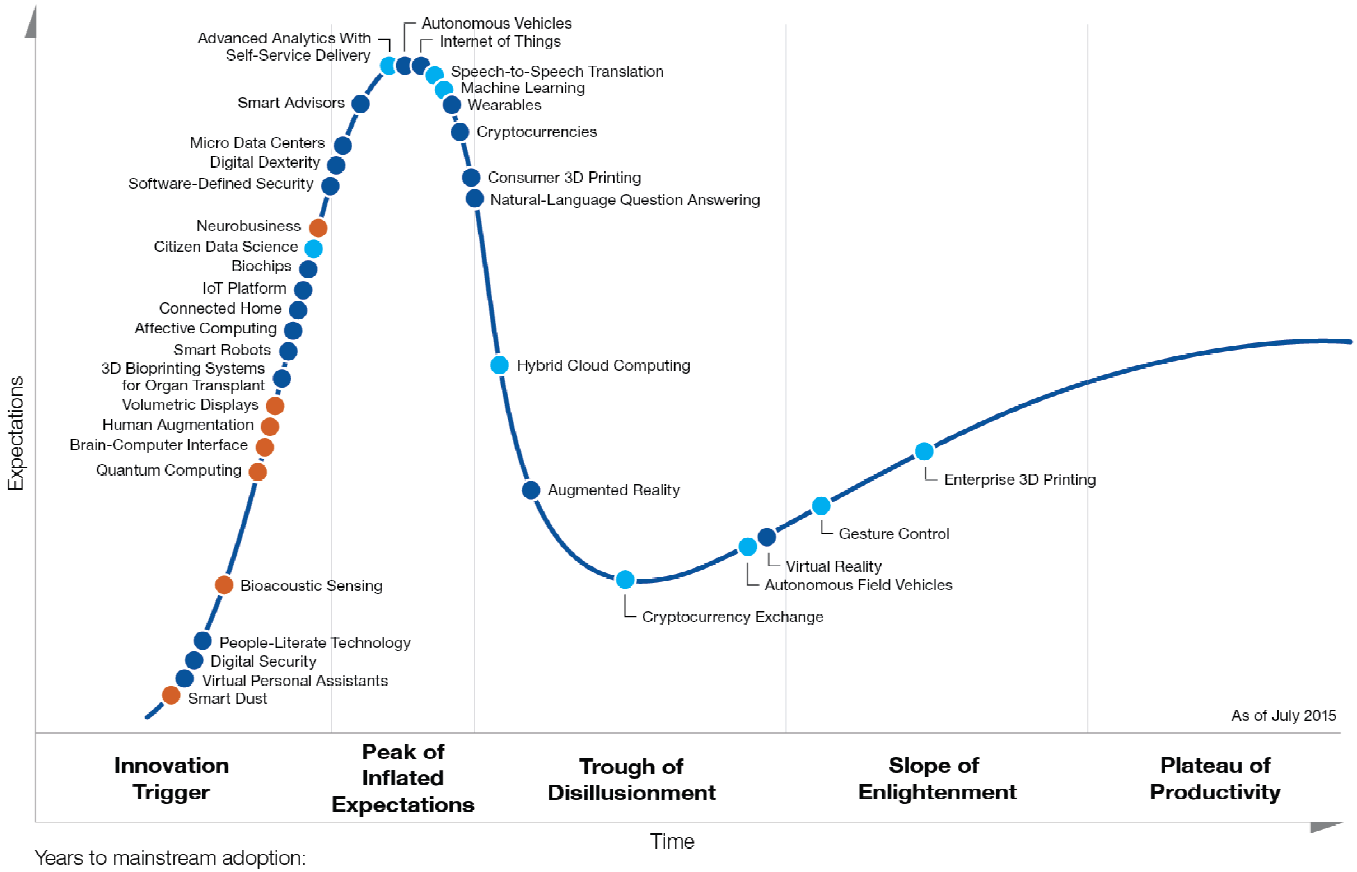


Smart Cities

(example from enevo.com, waste management)

The Role of Software in IoT

Emerging Technology Hype Cycle



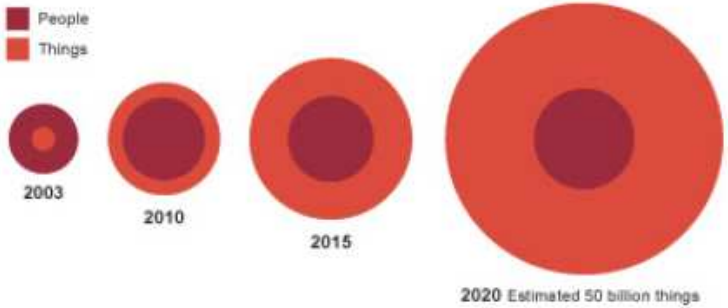
Years to mainstream adoption:

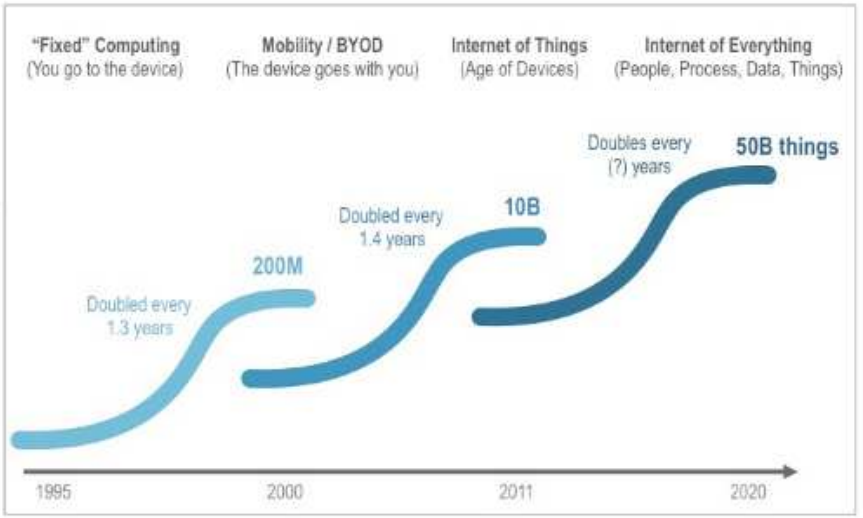
less than 2 years | 2 to 5 years | 5 to 10 years | more than 10 years | obsolete before plateau

gartner.com/SmarterWithGartner

Gartner

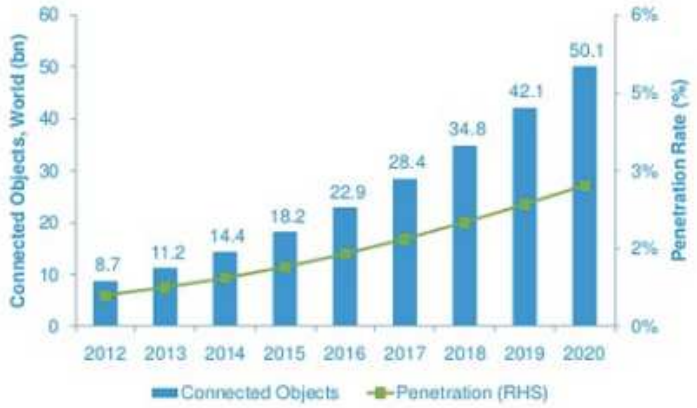
THE INTERNET OF THINGS





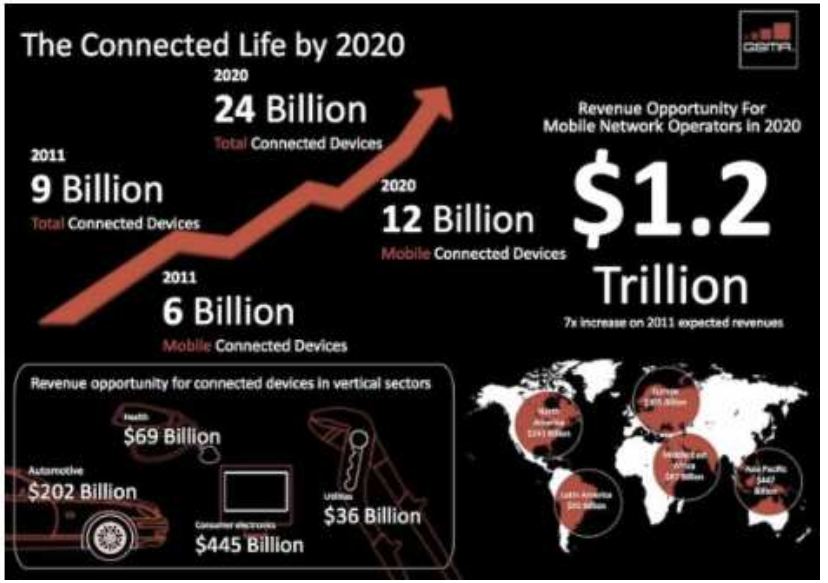
During 2008, the number of things connected to the internet exceeded the number of people on Earth.

Number of Connected Objects Expected to Reach 50bn by 2020



Penetration of connected objects in total 'things' expected to reach 2.7% in 2020 from 0.6% in 2012

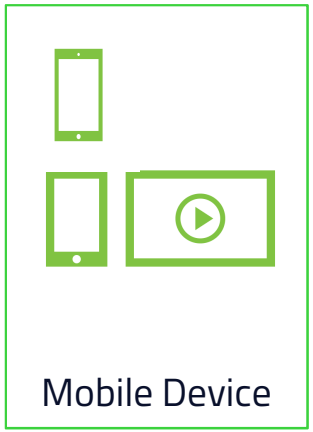
Source: CCS, 2013



Different IoT Architectures*

Thing-centric

- Real-time
- UI, logic and data in the device



Mobile-centric

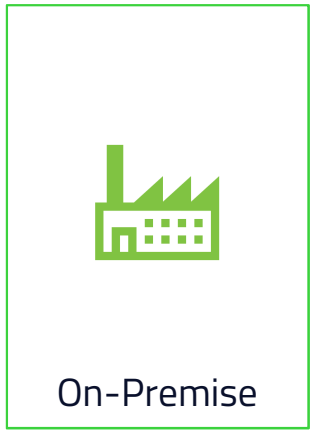
- Mobile device gathers, handles and visualizes sensor data
- Wearables, Health sensors,
- Personal use

Gateway-centric

- Gateway gathers and handles all sensor data

Cloud-centric

- UI anywhere
- Logic, data and analytics in the cloud

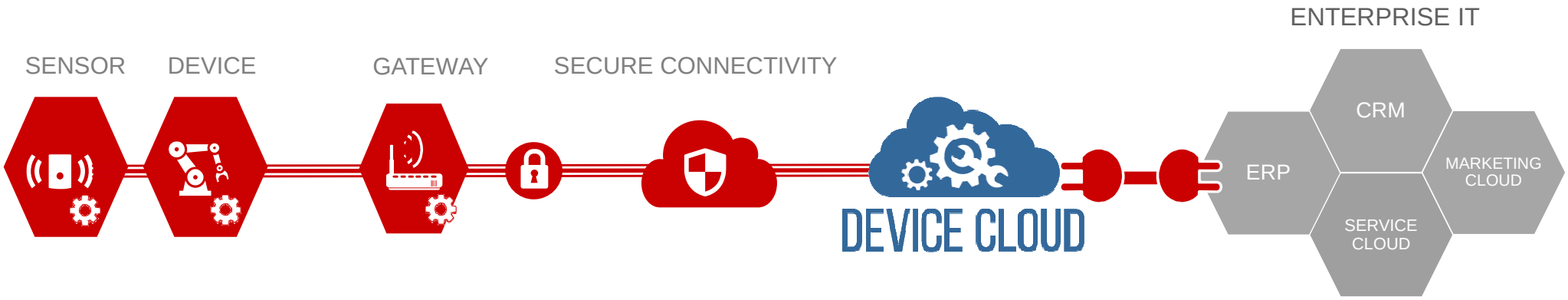


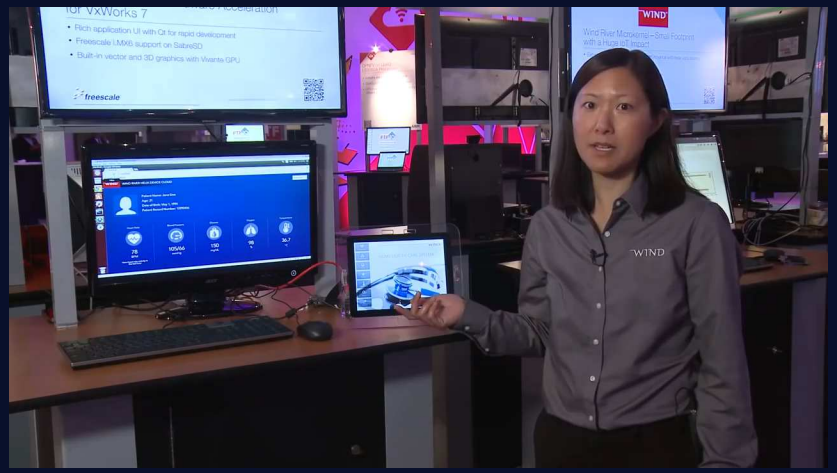
Enterprise-centric

- Closed environment
- Any kind of device combination but all in private networks

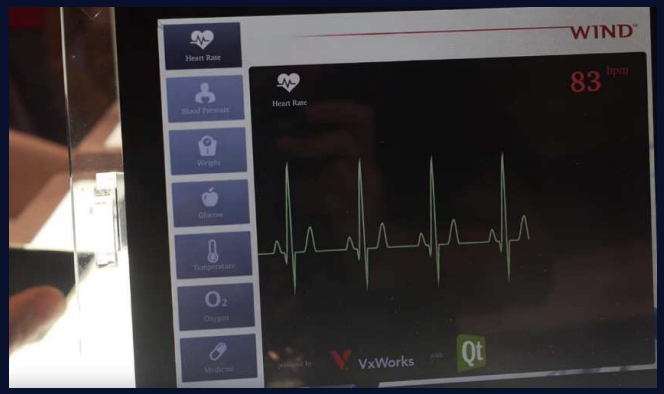
**From: Gartner LINE (Marketvisio) IoT-arkkitehtuurit 2015, October 2015*
https://www.marketvisio.fi/fi/tutkimukset/it-palvelut/2322-iot-ratkaisujen-arkkitehtuurimallit

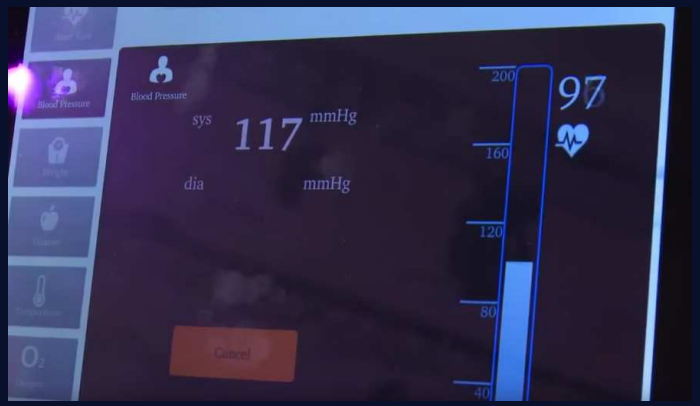
Wind River Helix




for VxWorks 7
• Rich application UI with Qt for rapid development
• Freescale i.MX6 support on SabreSD
• Built-in vector and 3D graphics with Vivante GPU
freescale
WIND
WIND

Example Case: WR IoT Demo





Wind River Helix Device Cloud

QML

Qt / C++

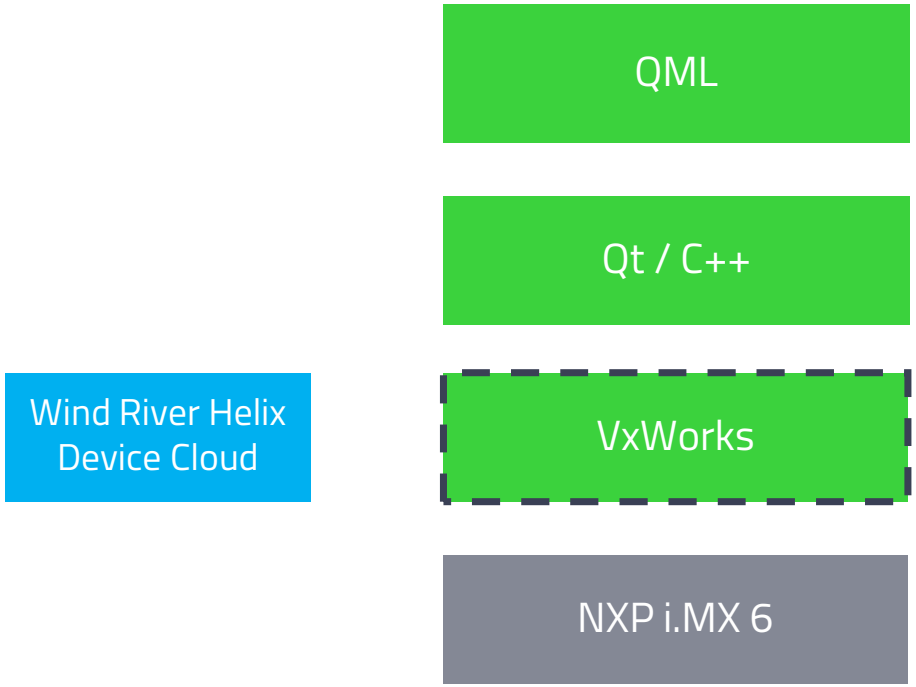
VxWorks

NXP i.MX 6

Choice of OS for IoT systems

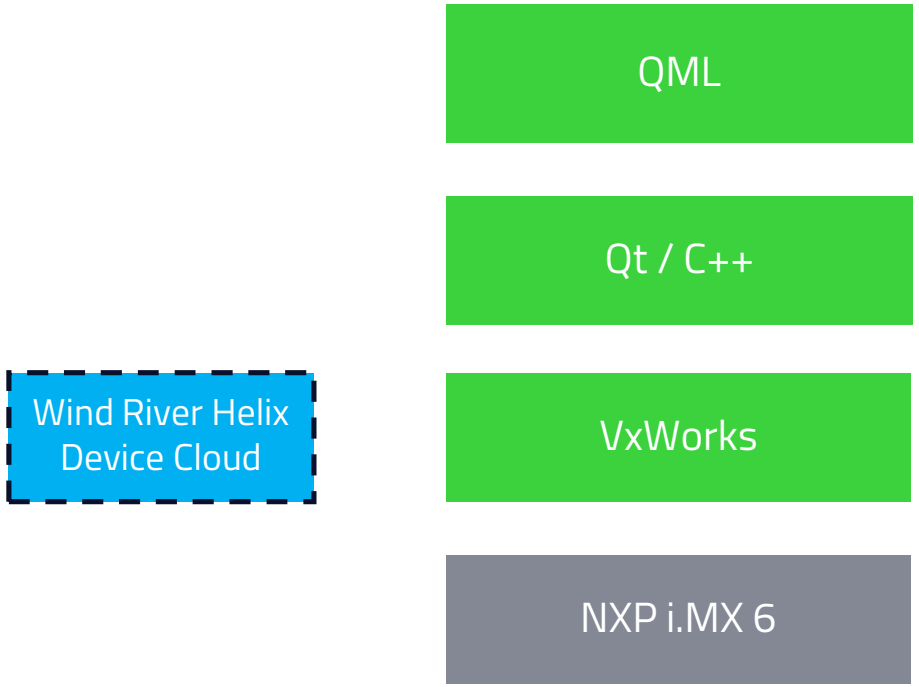
- Linux
- RTOS
- Android

What Does it Matter?

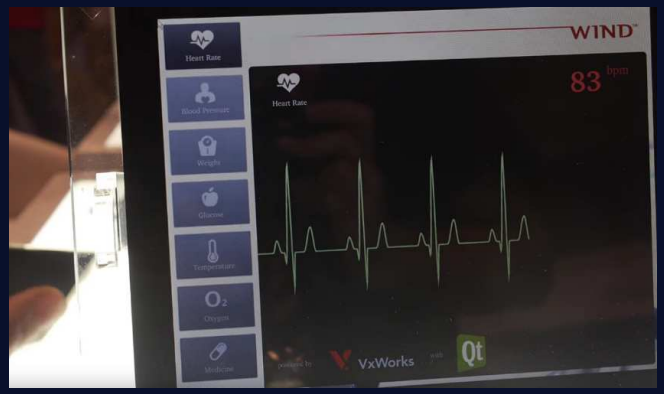


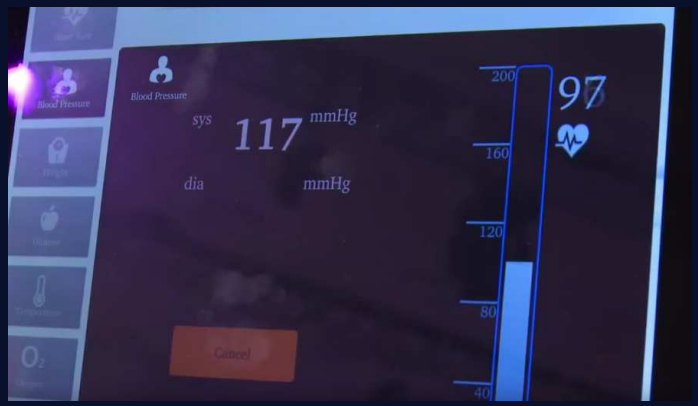
Cloud Integration

- Different Cloud service providers
- Should you hook up into one vendor, or keep your SW "cloud agnostic"?
- Telemetry and security/privacy concerning the devices



Software/Application side





Wind River Helix Device Cloud

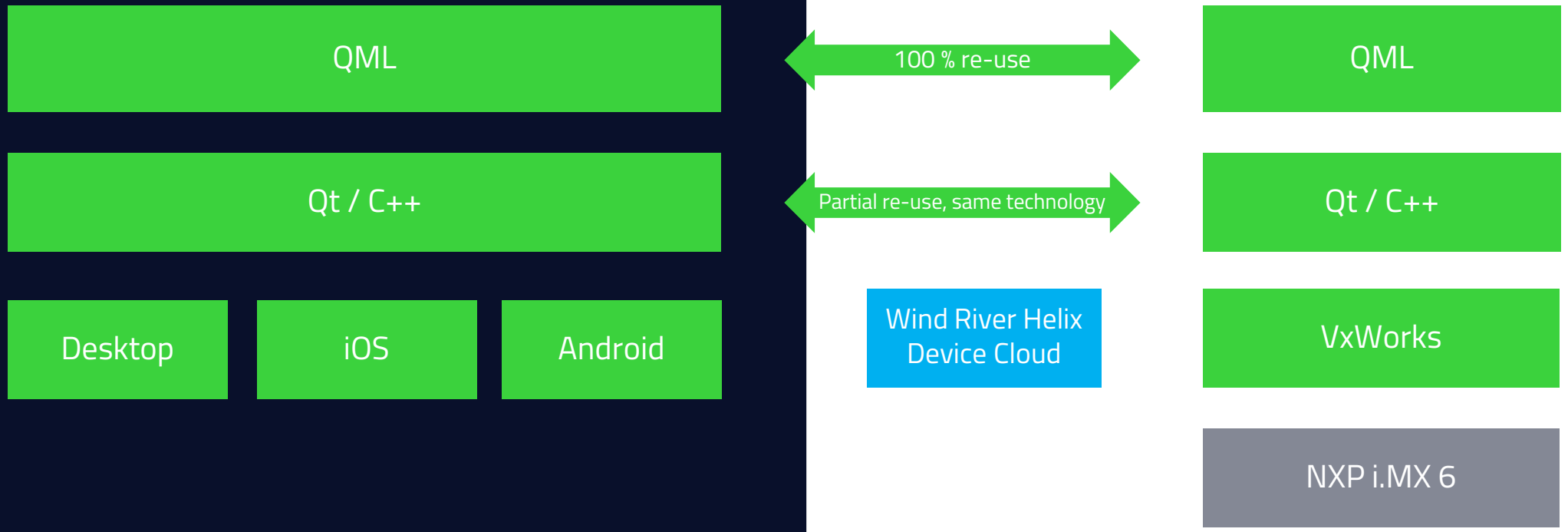
QML

Qt / C++

VxWorks

NXP i.MX 6

Extending the Use Case with Mobile Client



Industrial IoT

- What's the main difference between home IoT "gadgets" and so called industrial IoT?
- As these industries are being revolutionized by IoT, what implications does it have?


Qt
Additional Questions & Topics?

Read More about Wind River & IoT and Qt/VxWorks

- http://blogs.windriver.com/wind_river_blog/2016/09/wind-river-announces-vxworks-integration-with-ibm-watson-iot.html

- https://www.youtube.com/watch?v=zxkV4jyqylk
  - The demo video shown before, title:

    Wind River's VxWorks 7 with IoT Cloud Connectivity and Qt's Accelerated Graphics

September 20, 2016 Internet of Things

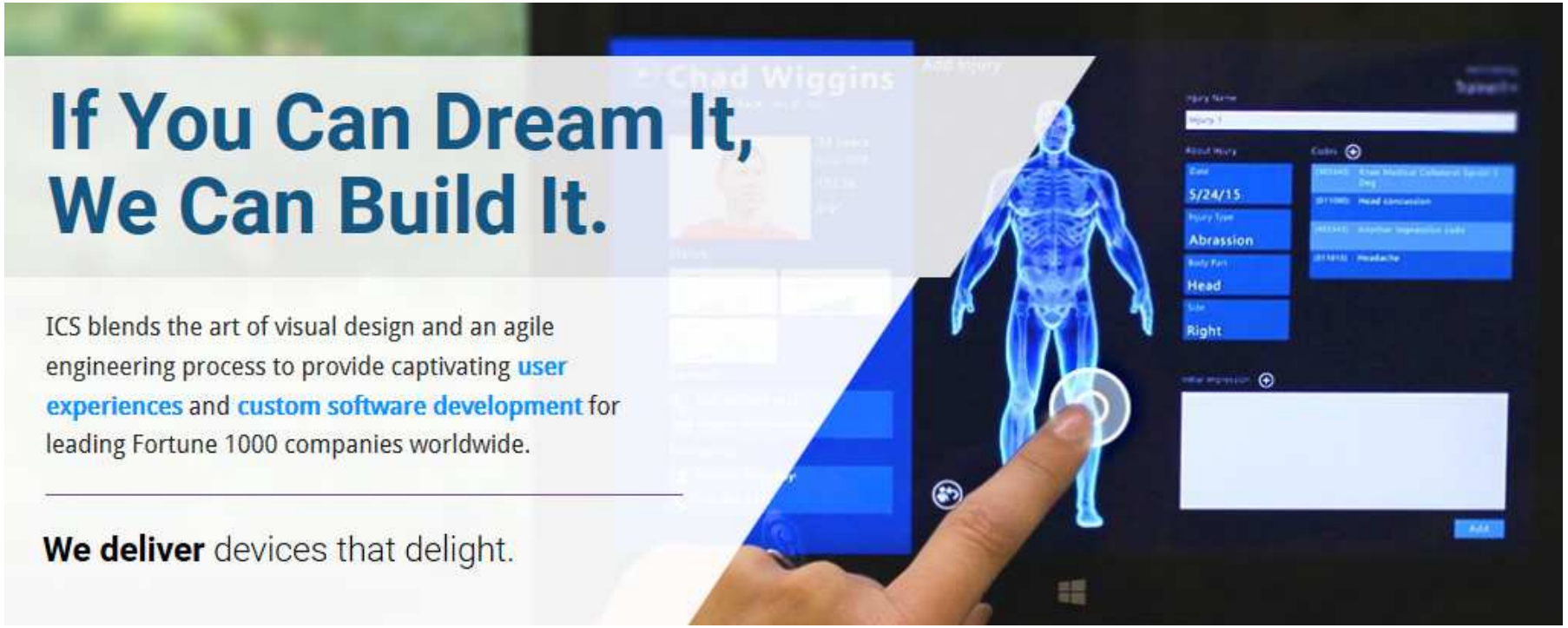
Wind River Announces VxWorks Integration with IBM Watson IoT

By Paul Chen

Wind River is pleased to announce availability of the VxWorks real-time operating system (RTOS) client for the IBM Watson IoT platform. This is part of the IBM/Wind River collaboration to advance IoT deployments for industrial customers with new "edge-to-cloud" recipes designed to simplify and accelerate the development of smart connected devices. This integration marks the first in a series of VxWorks clients for cloud service providers to follow.

The VxWorks client for IBM Watson IoT enables VxWorks-powered IoT devices to connect directly to the IBM Watson IoT platform. The client is based on the IBM Watson IoT SDK, and enables IoT developers to create devices using VxWorks that can leverage the IBM Watson IoT platform and IBM Bluemix cloud services. The addition of this client further makes VxWorks the ideal RTOS for IoT, in addition to the safety, security, and virtualization capabilities already provided to meet today's development challenges for building intelligent, connected systems – while at the same time, helps make the planet smarter and greener!

Check out ICS – www.ics.com

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