



**MICROCHIP**

# Enabling IOT

IQRF Alliance Conference  
May 2016



Harald Weidinger – Key Client Manager

# Vision, Mission & Goals

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Vision : Make Microchip a leading provider of IoT ecosystems, primarily in the industrial segment.



Microchip Mission: Develop enabling solutions and new technologies to make the Internet of Things possible.



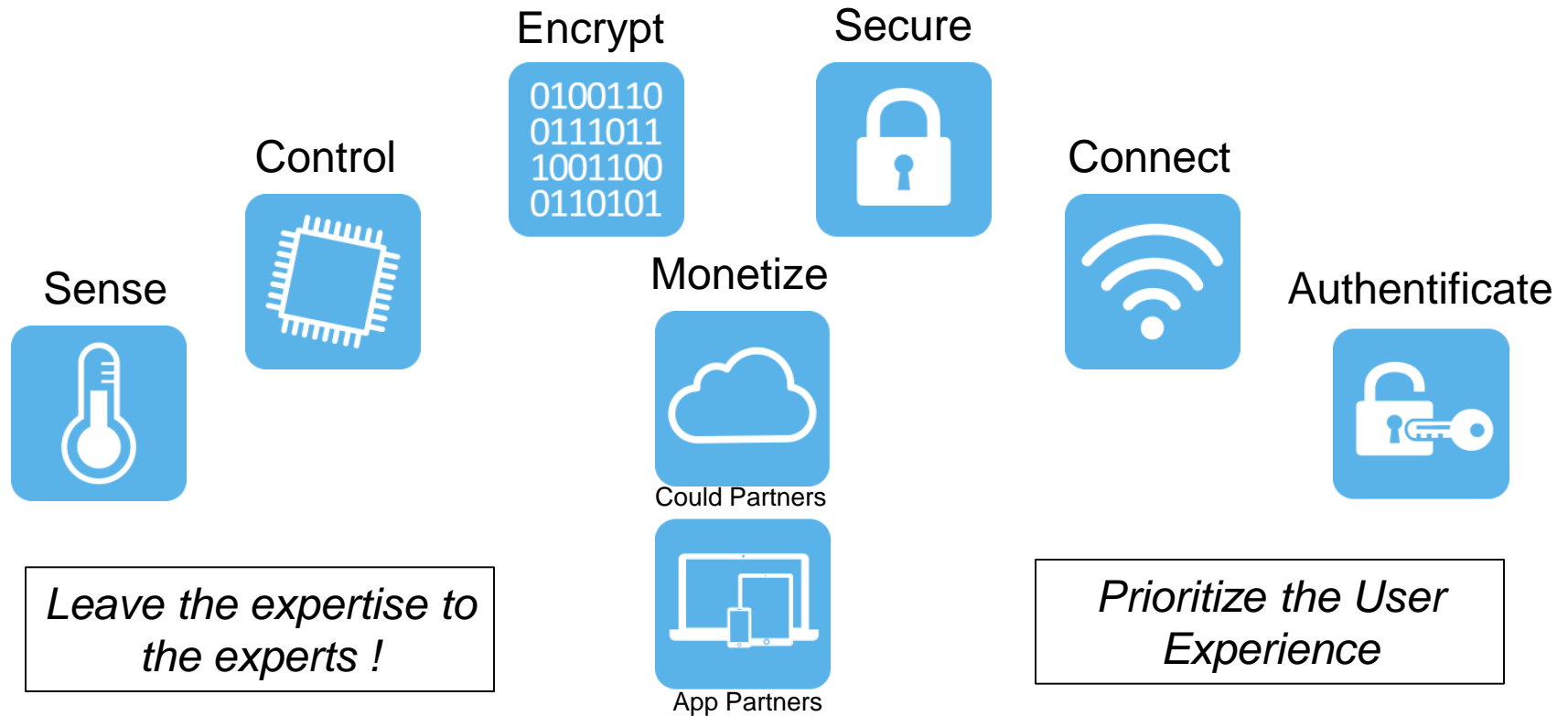
Goals : Improve existing business models, enable new ones by increasing productivity **and reducing customer time to market developments.**

# How to be successful in IoT ?

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- ❑ Propose end to end solutions or at least a framework
- ❑ Solve infrastructural challenges
- ❑ Improving businesses profitability.

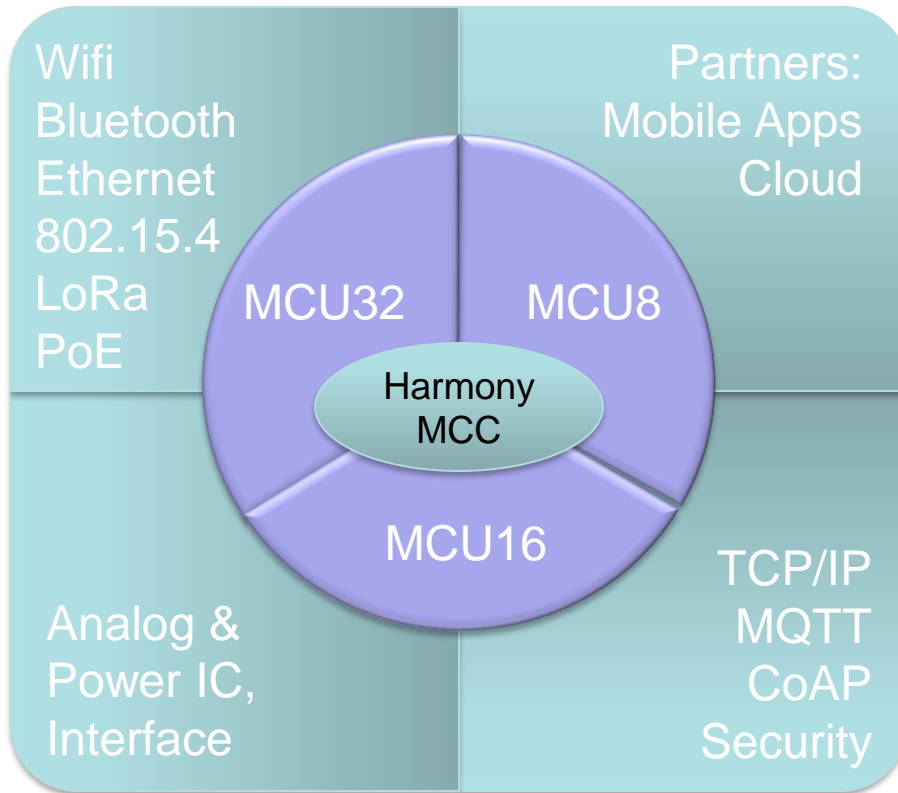
# IoT Definition



Internet of Things (IoT) – is a secured public or private network of electronic systems that :

- Acquires & Analyze data
- Communicate between the end user and/or machine
- Creates economical benefit

# IoT : Microchip is growing



Large portfolio breath to address IoT requirements :

- Scalability & Flexibility
- Low Power
- Security
- Quality Support
- Longevity (no EOL)



## Security Roadmap

- TLS/SSL
- AES 128/256
- SHA1-SHA256
- Authentication
- FS140 ...

+9200 Employees

Revenue: \$2.16B

HQ: Chandler, AZ

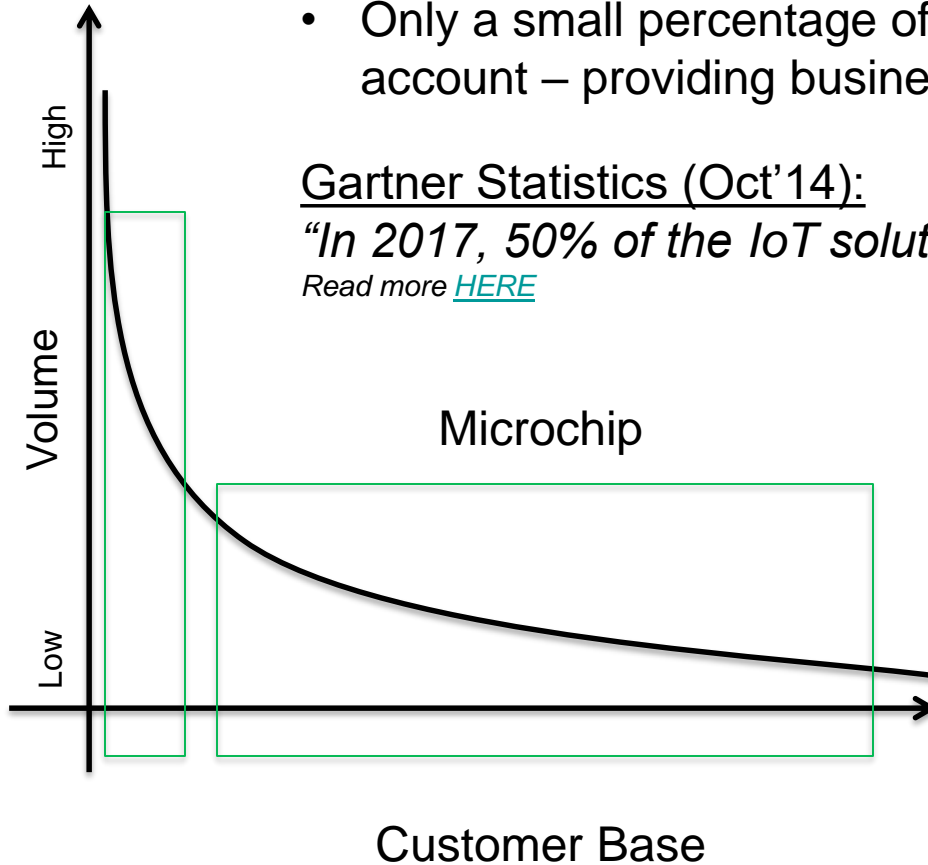
# Microchip DNA for the IoT space

- Diversity : 90,000 Customers
- Only a small percentage of customers represent high volume account – providing business stability

Gartner Statistics (Oct'14):

*“In 2017, 50% of the IoT solutions will come from the startups”*

Read more [HERE](#)



IoT is already in Microchip DNA

*IoT will require long product lifecycle time. MCHP is the only semiconductor corporation with a NO EOL policy*



**MICROCHIP**

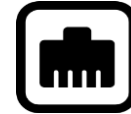
**IoT Standards**



[microchip.com/wifi](http://microchip.com/wifi)



[microchip.com/bluetooth](http://microchip.com/bluetooth)



[microchip.com/ethernet](http://microchip.com/ethernet)



[microchip.com/miwi](http://microchip.com/miwi)



[microchip.com/zigbee](http://microchip.com/zigbee)



IQRF Alliance



[microchip.com/lora](http://microchip.com/lora)

- Long Range (10miles)
- Low Power
- Low data rate



[microchip.com/ethernet](http://microchip.com/ethernet)

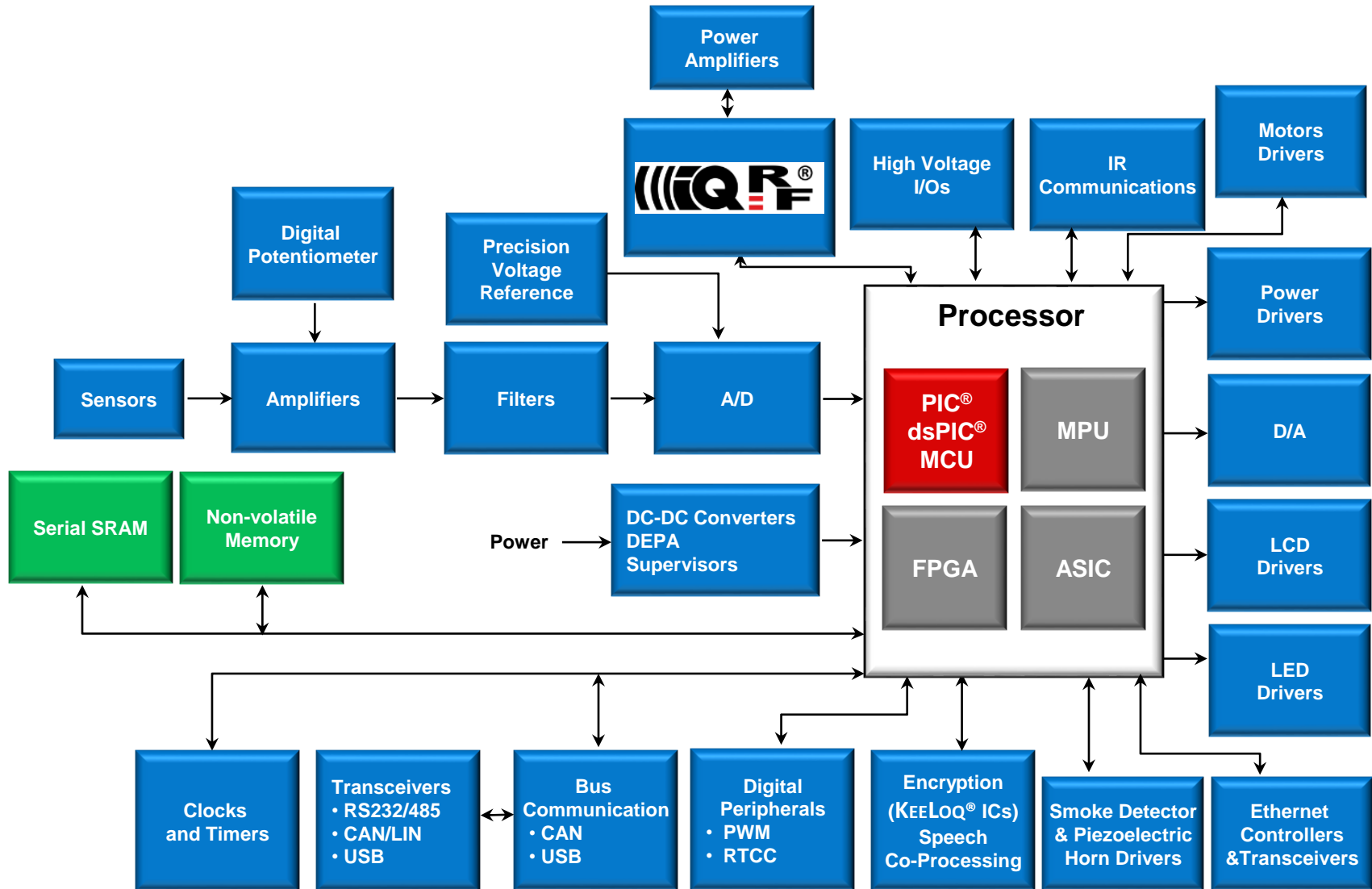
- Power over Ethernet
- CoAP (one to many)



- Secured backend

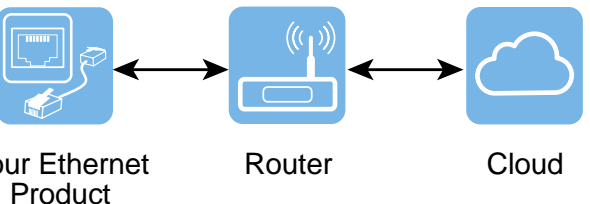
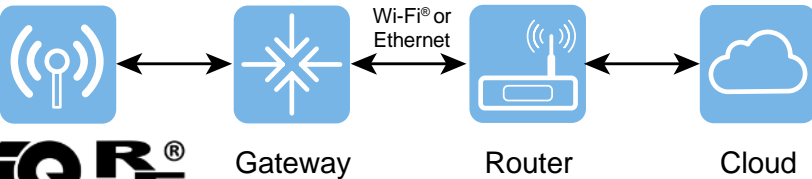
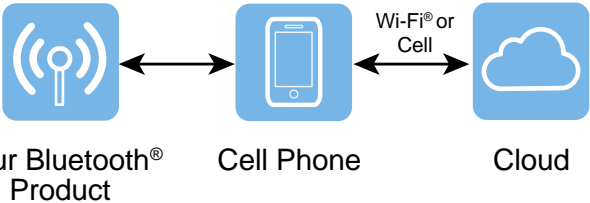
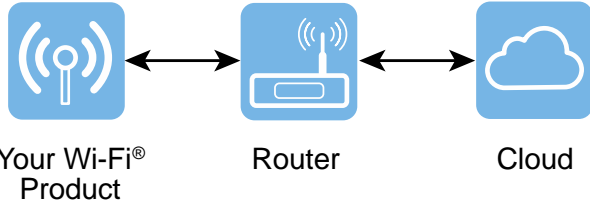


# Complete Solutions Focus



# Primary Configurations

## CONFIGURATIONS



## ADVANTAGES

- Existing Infrastructure
- Customer Familiarity

- Smartphone Availability
- Low Power
- Easy Setup
- Native Security

- Light Stack
- Multi-Radio Support
- Multi-Proto Support
- Good Range
- Very Low Power

- Plug-and-Play
- Flexible Design
- High Bandwidth
- Immune to High RF Traffic

## DISADVANTAGES



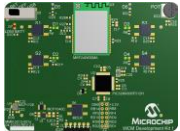

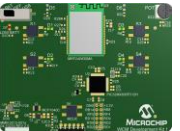





- Power Consumption
- Limited Range
- Large Stack
- Costly Radio
- Difficult Setup

- Limited Range
- Royalties

- Additional Concentrator Required

- Cumbersome Wiring

# Current Microchip IoT Solutions







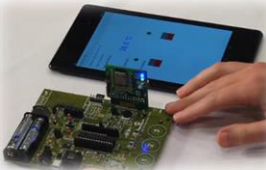

Board	Tools	Description	Benefits
 	<p>LPCM</p> <p>DM182022</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 32-bit controller</li> <li><input type="checkbox"/> RN1723 Wifi</li> <li><input type="checkbox"/> Exosite Cloud option</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Wifi with Cloud connection through Exosite</li> <li><input type="checkbox"/> Very Low Power Wifi</li> </ul>
 	<p>WCM</p> <p>DM182020</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Wifi (G) MRF24WG0</li> <li><input type="checkbox"/> 32-bit controller</li> <li><input type="checkbox"/> Cloud connected by AWS and Exosite</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Easy to use demo</li> <li><input type="checkbox"/> Cloud connected with basic AWS servers</li> <li><input type="checkbox"/> Uses light weight MQTT</li> </ul>
   <p>Will replace WCM with new AWS techno</p>	<p>WCM 2</p> <p>DM990001</p> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Q1'16</div>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Wifi (N)</li> <li><input type="checkbox"/> 32-bit controller</li> <li><input type="checkbox"/> Cloud connected by AWS latest service</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Easy to use demo</li> <li><input type="checkbox"/> Cloud connected with latest AWS service</li> <li><input type="checkbox"/> Uses light weight MQTT</li> </ul>
  	<p>ECM</p> <p>DM182021</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 32-bit controller</li> <li><input type="checkbox"/> Ethernet connection with LAN8740</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Immune to High RF</li> <li><input type="checkbox"/> Cloud connected with latest AWS service</li> <li><input type="checkbox"/> Uses light weight MQTT</li> </ul>

 = mikrobus

 = IoT ready

 = IoT capable

# Current Microchip IoT Solutions


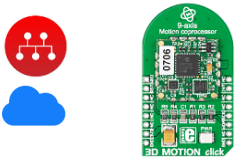

Board	Tools	Description	Benefits
  	<p><b>Explorer 8</b> DM160228</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 8-bit controller</li> <li><input type="checkbox"/> Wide package/configuration options</li> <li><input type="checkbox"/> Gold finger expansion</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Easy to use</li> <li><input type="checkbox"/> Main code framework</li> <li><input type="checkbox"/> Good for simple IoT nodes</li> <li><input type="checkbox"/> All in One solution</li> </ul>
  	<p><b>Curiosity</b> DM164137</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 8-bit controller</li> <li><input type="checkbox"/> Mikrobus footprint</li> <li><input type="checkbox"/> Integrated Prog/Debug via USB</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Flexible sensor add-on via Mikrobus</li> <li><input type="checkbox"/> Rapid prototyping</li> <li><input type="checkbox"/> Good for simple IoT nodes</li> </ul>
 	<p><b>PIC24 Bluetooth Smart</b></p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 16-bit controller</li> <li><input type="checkbox"/> Bluetooth</li> <li><input type="checkbox"/> SSL/TLS via smartphone</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Good for medium complexity IoT nodes</li> <li><input type="checkbox"/> Quick and flexible development kit</li> </ul>

 = [mikrobus](#)

 = IoT ready

 = IoT capable

# Current Microchip IoT Solutions

Board	Tools	Description	Benefits
 <p>DM182020</p>	<p>BLECM DM182022</p> <p>Q4'15</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Bluetooth RN4020</li> <li><input type="checkbox"/> SSL/TLS via smartphone</li> <li><input type="checkbox"/> 32-bit controller</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Native Security</li> <li><input type="checkbox"/> Low Power</li> <li><input type="checkbox"/> Smartphone access</li> <li><input type="checkbox"/> Easy to setup</li> </ul>
		<ul style="list-style-type: none"> <li><input type="checkbox"/> Mikroelektronika Click with IQRF</li> </ul> 	<ul style="list-style-type: none"> <li><input type="checkbox"/> Mikrobus compatible</li> </ul>

 = mikrobus

 = IoT ready

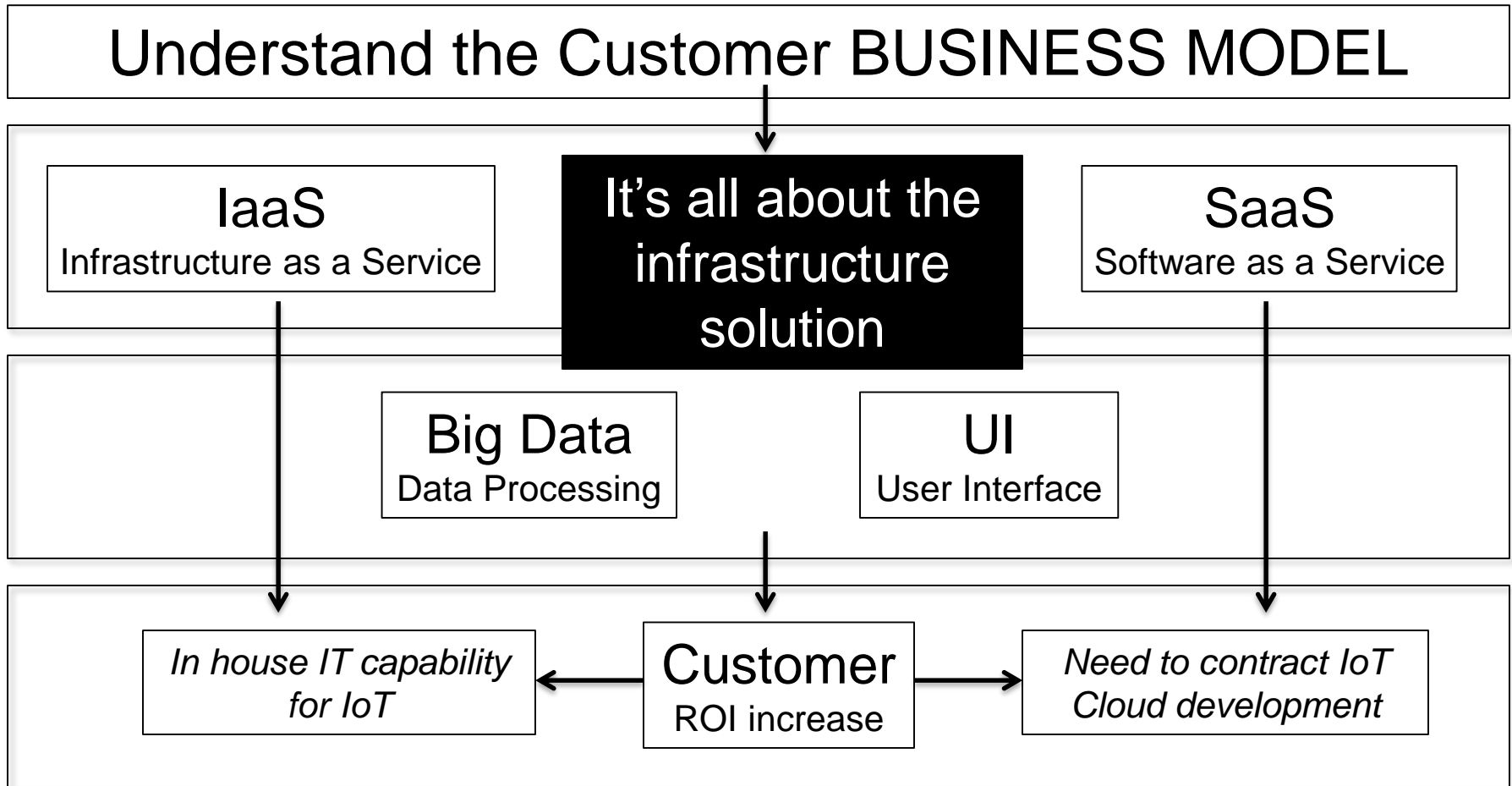
 = IoT capable



**MICROCHIP**

**Strategy**

# A new business model



# Why Wireless?

- **System cost**
  - Eliminate wires
- **Ease of Installation**
  - No wiring infrastructure
- **Portability**
  - Mobile positioning
  - Freedom and Flexibility



**IQRF Makes it Easy!**





**MICROCHIP**

***Thank You !!!***