Internet of Things (IoT) & Industry 4.0

30th May 2017 from 16h00 – 18h00
Agenda

• Iot business update and challenges
• Collecting Production and Process data
• Connected device for industries
• Waste management
• Logistics Tracking
Industry 4.0 Challenges

Source: Deloitte

Cyber-Physical Production Systems (CPPS)
IoT will touch every business within the next 2 years

- 76% of executives worldwide are exploring IoT today.
- 36% of them have IoT initiatives in pilot or production.
- 95% of them expect their company to use IoT within the next three years.
- 63% of executives believe the IoT offers them a competitive advantage and if they don’t implement IoT they will fall behind competition.
- 38% of executives think their company’s senior leaders fully busy.

Source: The Economist – The Internet of Things Business Index
## IoT - What is your business value

### Why are companies investing in IoT?

<table>
<thead>
<tr>
<th>Business Value</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Lower Operational Costs</td>
<td>39%</td>
</tr>
<tr>
<td>Bus. Proc. Efficiency/ops optimization and control</td>
<td>26%</td>
</tr>
<tr>
<td>IT optimization / modernization</td>
<td>24%</td>
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<tr>
<td>Better supply chain management and logistics</td>
<td>15%</td>
</tr>
<tr>
<td>Better customer service and support</td>
<td>38%</td>
</tr>
<tr>
<td>Customer acquisition and/or retention</td>
<td>25%</td>
</tr>
<tr>
<td>Product and/or Service improvement and innovation</td>
<td>24%</td>
</tr>
<tr>
<td>Competitive differentiation</td>
<td>18%</td>
</tr>
<tr>
<td>Access to information we previously didn’t have</td>
<td>12%</td>
</tr>
</tbody>
</table>

### Source:
- IoT Investment Drivers – IDC Buyer Behavior Report 2015

### Key Drivers:
- **Drive operational efficiency**
  - Lower Operational Costs: 39%
- **Improve Product Performance & Enhance Customer Experience**
  - Better customer service and support: 38%
  - Customer acquisition and/or retention: 25%
  - Product and/or Service improvement and innovation: 24%
- **Develop Disruptive Business Models**
  - Competitive differentiation: 18%
  - Access to information we previously didn’t have: 12%
IoT Industrial Challenges

• The Network challenge
• The Platform challenge
• The Energy challenge
The network issues and solutions
The platform issues and solutions
IoT & Industry 4.0

• Block Chain
  • Financial transactions for identification, payment
  • Proof contract
  • Blockchain protocols for start/stop transactions
  • Device To Device transactions

• Predictive maintenance

• Customer information

• New business lines / business products
lot Industrial business cases
Three Solutions type for Industrial IoT
The production Line, The Product, The Logistic

Acquisition on PLC
 Ethernet/Wifi
 Dynamic and Agile Reporting

Product Identity Creation
 Production line testing
 Warranty

Fresh Line Logistics
 Track and Trace
Exemple 1 : Water Station

Used Technologies:
- Raspberry PI2
- Microsoft Power BI
- MyScada Technologies
- 350 datas / 5 seconds
Used Technologies

• Raspberry PI2
• MyScada Technologies

- Easy to build up
- Big data volume
- Low Cost
Examples of devices and Data’s

• Connecting to Device

• Connecting to Platform
• Production control
• Identity of product
• Post production tests
• Defaults controls
• Product life cycle management
• New business in maintenance

Exemple 2 : Pellet Stove

Used Technologies :
- Wifi Board
- TP Asset Management
- Web Dev (Client)
- 10*18 datas / seconds
Used technologies - Gateway

- Easy to build up
- No communication costs
- Unlimited data volume
Hexagone Robotics France
1000 annual robots
Private – Public Swimming pools
Offer new services
- Predictive Maintenance
- Water quality warranty
- Customer reporting
- Webs data publications

Exemple 3: Swimming pool robot
Used Technologies:
- GSM Board / GPS
- TP Asset Management
- 500 data / Day

Robot

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Used Technologies – Mobile system

- Data GPRS < 1€/mois
- Roaming Européen
- 1MB/données /mois
- Rapide
Iot and Data

- Data gathering need software data management & Data Manager
- Business and statistics
- Augmented Reality
- Product Management
- Life cycle management
- New business models
IoT and Data privacy

• If IoT Data are linked to device or to people
• Location of use is not « sensible »
• Rule of proportionality and relevant use for private data
• Risk of denied of service or unavailability
• Social and legal responsibility in case of injuries and process decision for robots
Conclusion

- All Devices are going to be connected
- Product and production lines are connected
- A Product lifecycle include logistic and delivery