# accenturedigital

Pharma Process Innovation Forum in Pharmaceutical Process

How to be an efficient Digital Plant

28<sup>th</sup> October 2015

#### High performance. vered. De

Strategy | Consulting | Digital | Technology | Operations

### Industry 4.0: Cyber Physical Systems & Internet of Things

### The four industrial revolutions



Mechanical Assistance powered by Water and Steam

#### Mass Production through Automation of

through Automation of muscle work

#### Electronics and IT for Control and further

Automation

**Internet of Things** with the Automation of knowledgeable work



# What is IoT?

Internet of Things. A collection of smart, connected devices or products that, when pieced together well, can yield new functionality, reliability, utilization, and capabilities that were previously not deemed possible.



### Four Enabling factors are fueling the growth of IoT

Decreasing cost in computing Over the last ten years...



#### Proliferation of smart devices 2013 2015



Ubiquitous connectivity In 2014...



27% of mobile devices were IPv6 capable

15% penetration of

4G connections

54% of mobile devices will be IPv6 capable

By 2019

26% penetration of 4G connections

Rise of cloud and big data By 2020... In 2012...







## **Internet of Things: Enablers**



#### Connecting

- Remotely and Locally
- Generally Wirelessly



#### Computing

- Predictive analytics to make sense to large data sets from multiple devices and sources
- At the edge and distributed on the cloud



#### Communicating

- Machine to Machine
- With humans, through dashboards and natural interactions recognition

### Can drive...

#### Top-Line Growth

New digital products and services generate entirely new sources of revenue

#### **Operational Efficiency**

Automation, more flexible production techniques, optimization and predictive maintenance ...when integrated together



### Expanding Ecosystem: IoT vendor landscape has grown 3x in the last 3 years



August 2015, +612 vendors

May 2013, 199 vendors



### IoT Economic Impact forecast: measured in thousands of millions



**Cisco**: "Internet of Things (ed: which is a superset of Industrial Internet) will increase privatesector profits 21 percent by 2022 and add \$14.4 trillion to the global economy." "Gartner predicts that the total economic value add for the Internet of Things will be \$1.9 trillion dollars in 2020, benefiting a wide range of industries, such as healthcare, retail, and transportation."

#### McKinsey Global Institute:

\$36 trillion operating costs of key affected industries (manufacturing, health care, and mining) could be impacted by Internet of Things



### Internet of Things: Value Proposition

#### Sense and Act Through sensors and actuators



Visualize Utilizing Big Data and Analytics

Communicate Through a wide variety of networks



Real-time tracking and monitoring of resources such as where they are, their status, overall usage.



#### Optimize

Optimizing the use resources based on the monitored activities which may involve replanning or change of business process at the system level.



#### Predict

Based on historical usage and current condition, predict the overall "health" of the resource and how soon it needs to be serviced.



### Video



Vorld Economic Forum, The Industrial Internet of Things: https://www.youtube.com/watch?v=8NGzrtK7eV0

### Efficient Digital Plant: Connected Worker & Connected Assets





### **Digital Plant: Life Sciences companies have a huge potential** for improving their operations by leveraging digital solutions



Dynamic **Robotic Workforce** Infrastructure Inventory and Replenishment

Cloud Hosted Digital Data Movement Hyper Scale R&D

Al driven product optimization

**External Data Exploitation** 

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# Wearables & Augmented Reality with KPN

KPN engaged Accenture to explore how Google Glass can support engineering activities, and which mobile technologies KPN can utilize to improve their field force.

Accenture delivered a solution that helps KPN engineers better manage and execute their work orders, and enable expert collaboration and data capture in the field. 20-40% of productivity improvements were identified.



## National Utility Company Digital Plant Refresh

A national utility worked with Accenture and Intergraph to complete a digital data plant refresh proof of concept.

The national utility company looked to improve project execution and maintenance at its fossil power plants, but was challenged with an outdated document management process resulting in inefficiencies and risk exposure. Accenture demonstrated the value of conducting a digital plant refresh proof of concept (PoC) at one power plant by taking one million of the client's unstructured, unintelligent engineering documents and identifying 10,000 relevant files for selected plant systems.



### Esteve Digital Plant Transformation

Esteve is an international pharmaceutical company headquartered in Barcelona.

Now this company has around 2,900 employees and operates in different countries and continents, through subsidiary companies in Europe and the US and through production centers in Mexico and China, with products directly present in 40 countries and indirectly present, through licensing and distribution agreements, in over 60 countries around the world.

Accenture is helping Esteve in the process of digital transformation in the industrial area, leveraging Accenture Digital skills, knowledge and assets.



### **Demo: Connected Worker in Pharma**



Start Work Order: Launch current task



**Expert Help:** Overt the shoulder coaching



Approach Work Area:

Beacons in-door proximity detection



Connection with expert: Live streaming video with expert



Task Description:

Details list and task overview



Finish Work Order: End current task



Instruction Video:

Step by step work instructions



Work Oder completed: Current task appears as completed