Road2CPS – Workshop on Future Platforms

Are platforms a solution for our industrial competitiveness?
How can they benefit from CPS, IoT and Big data?
sCorPiuS Consortium

Project funded by European Commission to define the roadmap for CPS4MFG (CPS for Manufacturing) in Europe
• 17 Guru interviews
Gurus are both from Academia and Industry world
(i.e, University of Cincinnati, HP, FESTO, IBM, etc.)

• 3 Knowledge Capture Events
(in Stuttgart, Munich and Milan)
More than 100 strategic breakthroughs CPS adoption can bring into Manufacturing Industry have been identified...

- Enhance companies cooperation through ecosystems of partners for service execution
- Linking data & manufacturing
- Adaptive Graphical User Interfaces (GUIs) to give the right info to the right person
- Inclusion of customers needs & usage directly in product development & production
- Responsiveness: late delivery of material, early adoption of product schedule
- Ubiquitous sensing, better understanding of the ecosystem
- Efficient production for small batch sizes
- More comprehensive product and production
- New options for service related business along the whole life cycle of digitalized products, "digital twin"
...and then categorised according to six main clusters:

1. New data-driven services and business models
2. Data-based improved products
3. Closed-loop manufacturing
4. Cyberized™ plant/ “Plug & Produce
5. Next step production efficiency
6. Digital ergonomics
About 80 key CPS related enabling technologies that can bring the bigger impact to Manufacturing Industry have been identified.
About **90 obstacles** to CPS deployment and integration within existing systems have been identified.

Between them, a **need for standards** and related **platforms** arises.

- **Smooth migration from existing environments**
- **Safety & security of manufacturing and product data**
- **Integration of CPS with actual technology**
  - transforming actual technology into CPS
  - Interaction CPS with actual technology
- **Interfaces remain proprietary**
- **No standards**
• **ICT 2015, Lisbon 21st October, 2015**

  Launching the European community for CPS in manufacturing

  Networking Session Wednesday Oct 21st, 16:00 – 16:45 Room 10

• **Knowledge Capture Event, Brussels**
Two-sided Market Platforms: the two sides of the same coin?

The OFFER side (usually IT)

The DEMAND side (usually OT, FoF)

How thick is the metal of the coin and what does it include?
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Technology Transfer

- Commercialization
  - Extended operation of production hardware
- TRL 9
- TRL 8
- TRL 7
- TRL 6
- TRL 5
- TRL 4
- TRL 3
- TRL 2
- TRL 1

- TRL 9
  - Commercialization
- TRL 8
  - Extended operation of production hardware
- TRL 7
  - Demonstration of pre-production hardware
- TRL 6
  - Prototype demonstration ("looks like" hardware)
- TRL 5
  - Breadboard demonstration ("acts like" hardware)
- TRL 4
  - Proof of concept validation (integrating components)
- TRL 3
  - Proof of concept research (bench scale)
- TRL 2
  - Academic Research

Technology Adoption Lifecycle

- Innovators
- Early Adopters
- Early Majority
- Late Majority
- Laggards

Area under the curve represents number of customers

14MS
*The Chasm*
Two-sided Market Platforms: the two sides of the same coin?

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- Need for an objective, scientific Method for MRL (Market Readiness Level) or Manufacturing RL to Digital Automation
- Need for MIGRATION reference processes towards new technologies (toSDN, to5G, toCPS, toIOT, toCLOUD, toOSS, toBData)
- Need for Innovative BUSINESS MODELS which will facilitate the seamless/disruptive transition between current and new business avoiding the risk of business cannibalisation
- Need for intensive and extensive EDUCATION programs for elderly workers up-skilling and young talents attraction
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