Workshop 6

Industry 4.0: are we ready?

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Time to reach 100 Million customers

years

75

7

4

2

1 month
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Cyber-Physical Systems

Industry 4.0

- Autonomous Robots
- Big data analytics
- Simulation
- Horiz. & vertical system integration
- Augmented reality
- Additive Manufact.
- Industrial IoT
- Cyber Security
Change in production systems

**Rigidly sequenced car manufacture on a production line**

- Workstation 1
- Workstation 2
- Workstation 3
- Workstation 4

**Decoupled, fully flexible and highly integrated manufacturing systems**

- Workstation A
- Workstation T
- Workstation O
- Workstation X
- Workstation H
- Workstation F
- Workstation K

Source: Hewlett-Packard 2013
Change in products

**Philips Lighting**

Users can control Philips Lighting hue light bulbs via smartphone, turning them on and off, programming them to blink if they detect an intruder, or dimming them slowly at night.

**Medtronic**

Medtronic’s implanted digital blood glucose meter connects wirelessly to a monitoring and display device and can alert patients to trends in glucose levels requiring attention.

**Ralph Lauren**

Ralph Lauren’s Polo Tech Shirt, available in 2015, streams distance covered, calories burned, movement intensity, heart rate, and other data to the wearer’s mobile device.

**Babolat**

Babolat’s Play Pure Drive product system puts sensors and connectivity in the tennis racket handle, allowing users to track and analyze ball speed, spin, and impact location to improve their game.
Change in services and sales

Today: Servitization

- Rolls Royce: “Power By The Hour”

Rolls Royce

From airplane engines to ‘power-by-the-hour’

In the airline industry, the company does not sell engines - it charges for use of the thrust they provide, on a ‘power by the hour’ basis. Where previously the company’s aerospace arm simply sold engines to plane companies, they now offer a fixed-fee maintenance back-up service for those engines, thus allowing customers to accurately project their maintenance and part replacement costs.

[www.rolls-royce.com]
Impact

- ethics
- identity
- privacy
- human relationships
- community
- territories
- governance
- operating models
- productivity
- nature of work
- labour substitution
- employment
A shift of paradigm

Industry 4.0

Enterprise 4.0

Society 4.0
Are we ready?

- Industry 4.0, or 0.4?
- What about equipment and facilities?
- What about people, what about teachers and trainers?
- Are we aware that the change is already on-going?
Three key issues

1. What is the role of VET with regard to Industry 4.0?

2. What are the obstacles for VET providers, that hinderance/slow down being ready for Industry 4.0? What are possible solutions?

3. What are the needs of VET providers, in order to get/keep ready for Industry 4.0?
Thank you for your contribution