Workshop „Innovation“

Roadmaps for Innovation and Changing of Beliefs

Luxembourg, 25/06/2014
Version 22/06/2014
Agenda

09.00 - 10.00 Opening Keynote: The Need for a Structured Approach towards Production Technology - Roadmaps in Innovation-driven Industries (ECQA)
Andreas Riel, France, Martina Flatscher, ZF Lenksysteme, Germany

10.00 - 10.30 Game Changing Beliefs… For the Product Developing Organization
Morten Elwang, DELTA, Denmark

10.30 - 11.00 Coffee Break

11.00 - 11.30 Leadership in Sustainability (ECQA)
Tomi Rozman, BICERO, Slovenia, Gabriela Fistis, Denkstatt, Romania, Andreas Riel, EMIRACLE, France, Richard Messnarz, ISCN Austria & Ireland

11.30 - 12.00 Empowering Entrepreneurship in Europe (ECQA)
Ana I. Azevedo, Marissa Pais, ISQ Portugal, Andreas Riel, Serge Tichkiewitch, Grenoble INP, France, Eva Homolova, RPI-C-VIP, Czechia, Alessandra Antinori, Giuseppe Metitiero, P.Ri.Ma.Forma, Italy, Giorgos Giorgakis, EUROSC, Cyprus, Richard Messnarz, Damjan Ekert, ISCNAustria & Ireland

13.00 - 13.30 Project valorisation through agility and catering for stakeholder expectations (ECQA)
Elli Georgiadou, Kerstin Siakas

13.30 14.00 Linguistic Analogy for Software Process Innovation
Kouichi Kishida, SRA, Japan
14.00 - 17.30  Workshop Style

Game changing beliefs, a game organised by Morten Elwang from DELTA:

- If you should build and sustain a successful product development organization, which are the 3-5 most powerful things you would bring into play?
- Sharing personal condensed experiences.
- Grouping them in a moderated game.
- Summarising an innovation story board.

17.30  End
Why to deal with Trends?

12 disruptive Technology Trends

- Mobile Internet: Increasingly inexpensive and capable mobile computing devices and Internet connectivity
- Automation of knowledge work: Intelligent software systems that can perform knowledge work tasks involving unstructured commands and subtle judgments
- Internet of Things: Networks of low-cost sensors and actuators for data collection, monitoring, decision making, and process optimization
- Cloud technology: Use of computer hardware and software resources delivered over a network or the Internet, often as a service
- Advanced robotics: Increasingly capable robots with enhanced senses, dexterity, and intelligence used to automate tasks or augment humans
- Autonomous and near-autonomous vehicles: Vehicles that can navigate and operate with reduced or no human intervention

MGI Analysis
Why to deal with Trends?

12 disruptive Technology Trends

- **Next-generation genomics**: Fast, low-cost gene sequencing, advanced big data analytics, and synthetic biology ("writing" DNA)
- **Energy storage**: Devices or systems that store energy for later use, including batteries
- **3D printing**: Additive manufacturing techniques to create objects by printing layers of material based on digital models
- **Advanced materials**: Materials designed to have superior characteristics (e.g., strength, weight, conductivity) or functionality
- **Advanced oil and gas exploration and recovery**: Exploration and recovery techniques that make extraction of unconventional oil and gas economical
- **Renewable energy**: Generation of electricity from renewable sources with reduced harmful climate impact

MGI Analysis
Why to deal with Trends?

The Hype Cycle of Emerging Technologies

Gartner 2013
The Hype Cycle of Emerging Technologies
Why to deal with Trends?

Societal Trends

- Lack of Skilled Workers
- Lack of Interest in Manufacturing Job Roles
- Establishment of “Learning/Teaching Factories"
- Replacement of Knowledge Workers by IT-Systems
- Sustainable Energy and Resource Consumption
- Healthy Working Conditions
- etc.
Why to deal with Trends?

Economic Trends

- New Business Models
- Dynamic Supply Chains
- The Networked Enterprise
- Globalisation of Businesses
- Volatility of Markets
- etc.
EFFRA Challenges in Manufacturing Industries

- **Manufacturing the products of the future:** Addressing the ever changing needs of society and offering the potential of opening new markets

- **Economic sustainability of manufacturing:** Combining high-performance and quality with cost-effective productivity, realising reconfigurable, adaptive and evolving factories capable of small scale production in an economically viable way

- **Social sustainability of manufacturing:** Integrating human skills with technology

- **Environmental sustainability of manufacturing:** Reducing resource consumption and waste generation
Why to deal with Trends?

From Industry 1.0 to Industry 4.0: Towards the 4th Industrial Revolution

1. Industrial Revolution
   through introduction of mechanical production facilities powered by water and steam
   
   End of 18th Century

2. Industrial Revolution
   through introduction of mass production based on the division of labour powered by electrical energy
   
   Start of 20th Century

3. Industrial Revolution
   through introduction of electronics and IT for a further automation of production
   
   Start of 70ies

4. Industrial Revolution
   based on Cyber-Physical Production Systems
   
   today