

Eur  SPI² 2014

Workshop „Innovation“

Roadmaps for Innovation and Changing of Beliefs

Luxembourg, 25/06/2014

Version 22/06/2014

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, RPIC-VIP, Czechia, Alessandra Antinori, Giuseppe Metitiero, P.Ri.Ma.Forma, Italy, Giorgos Giorgakis, EUROSC, Cyprus, Richard Messnarz, Damjan Ekert, ISCN Austria & 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

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

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

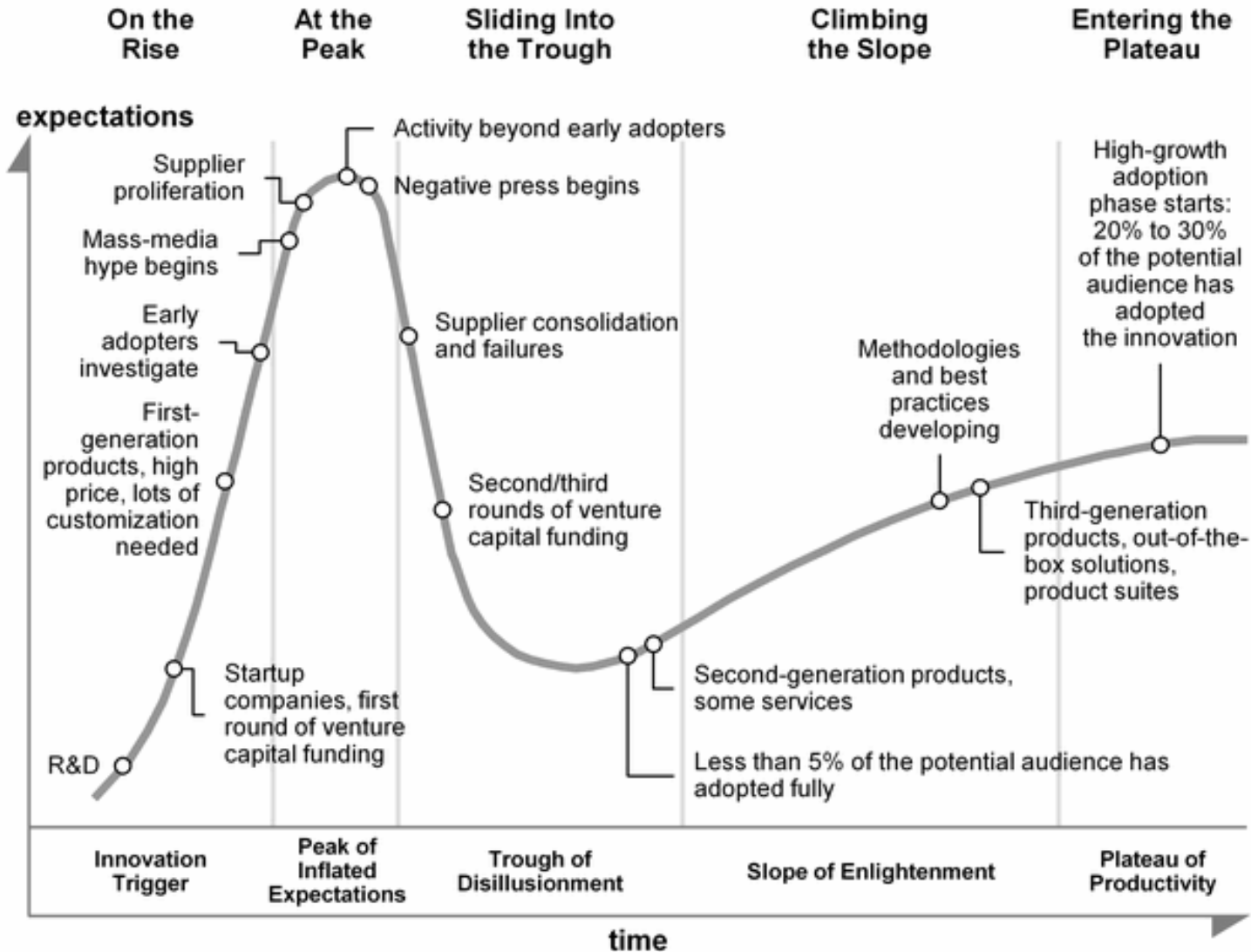
Exploration and recovery techniques that make extraction of unconventional oil and gas economical



Renewable energy

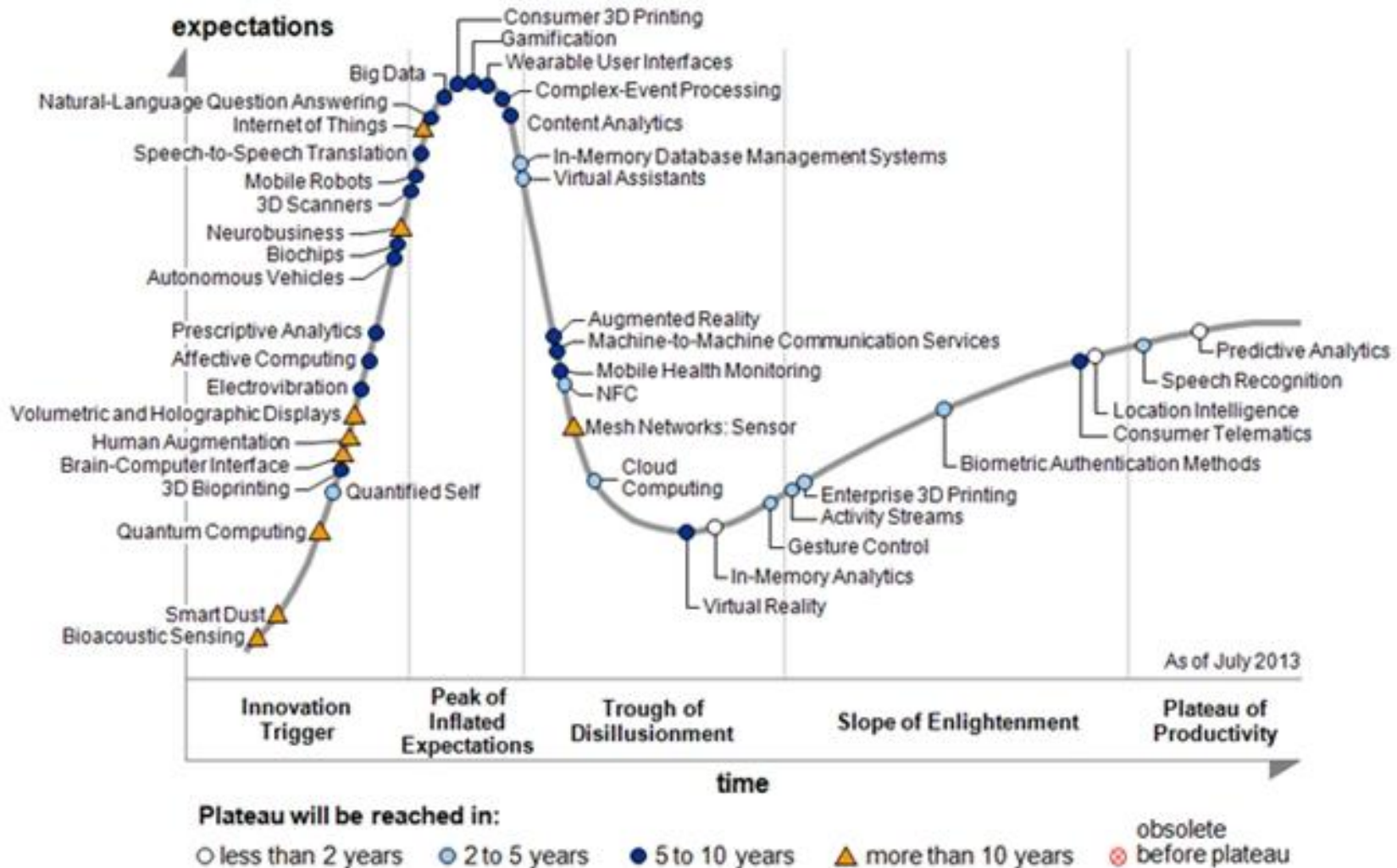
Generation of electricity from renewable sources with reduced harmful climate impact

The Hype Cycle of Emerging Technologies



Gartner 2013

The Hype Cycle of Emerging Technologies



Gartner 2013

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.



Economic Trends

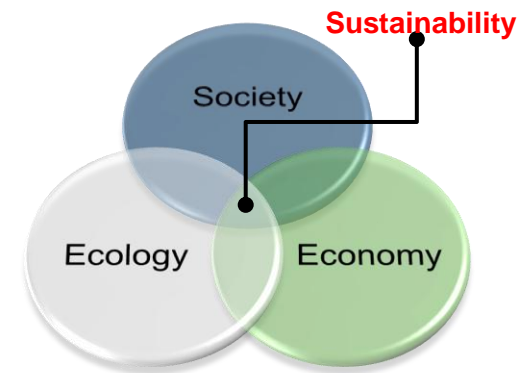
- New Business Models
- Dynamic Supply Chains
- The Networked Enterprise
- Globalisation of Businesses
- Volatility of Markets
- etc.



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



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

