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A Foresight Exercise on Emerging Patterns of Innovation
Visions, Scenarios and implications for Policy and Practice



Innovation Futures: How Emerging Innovation Patterns Change the European Innovation Landscape

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Basic Information on the INFU Project



Funding: European Commission, FP7 Programme, Socio-Economic Science and Humanities Research, Blue Sky Research on Emerging Issues Affecting European S&T

Duration: 1st of June 2009 – 31st January 2012

Project Officer: Perla Srour-Gandon, DG Research, Unit L.2

Consortium: Austrian Institute of Technology (AIT)
Fraunhofer Institute of Systems and Innovation Research (ISI)
Strategic Design Scenarios (SDS)
Z_punkt The Foresight Company (Z_punkt)

Research Question of the INFU Project: How will innovation be organised in the future?

- We are interested in the question on how the process of the creation, development and introduction of innovation is changing, i.e. we are dealing with “innovation patterns” or new forms of innovation ...
- Little systematic exploration of new innovation models and visions and their implications for the innovation landscape, economy and society.
- With “new innovation patterns” we mean novel emerging concepts, ideas and strategies how innovation is organised but also well-known trends, which are of importance so far only in specific industries or areas but may have a larger impact on or potential for other areas in the future.
- Project approach: INFU is a foresight process combining the elements weak signal scanning, development of visions, scenario construction and scenario assessment

INFU Methodology

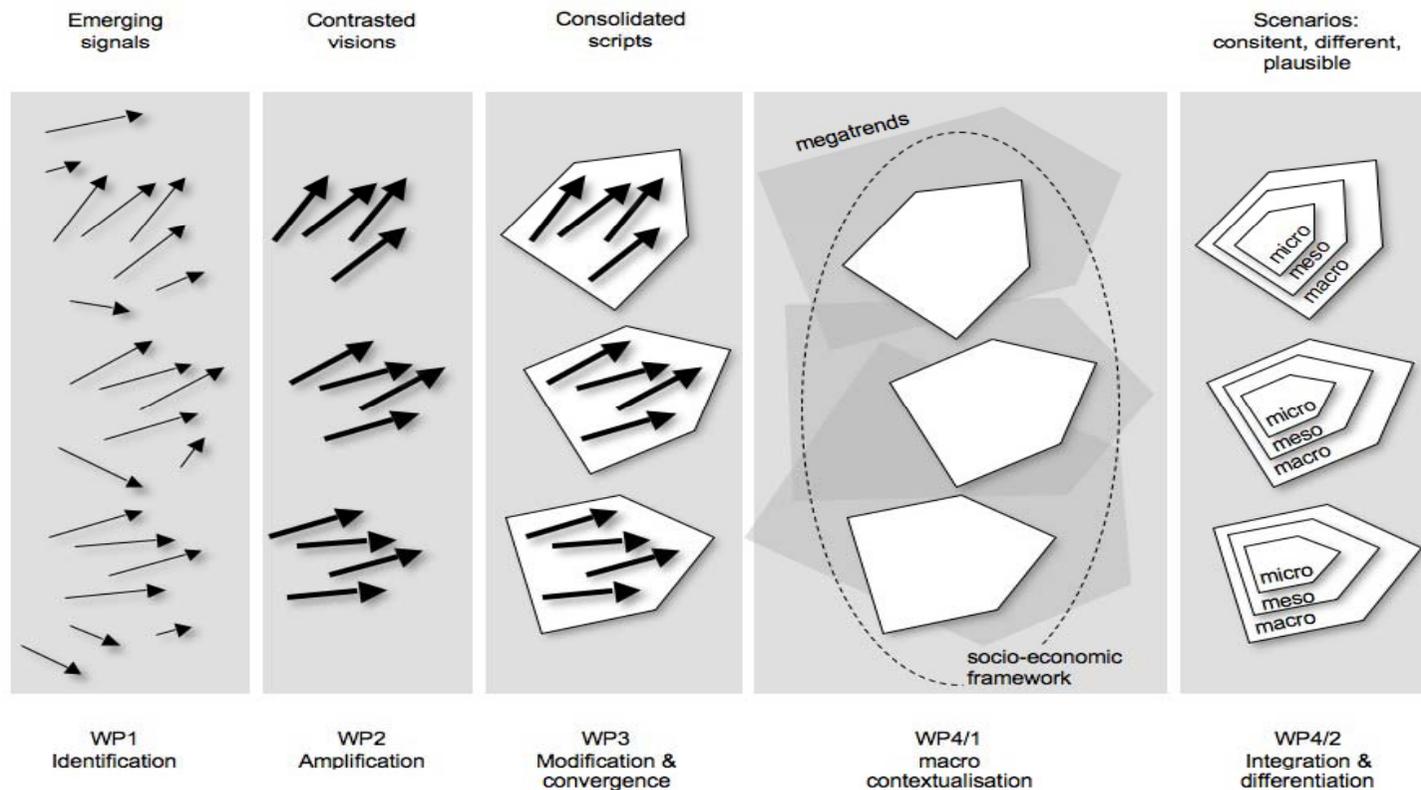
From Weak Signals to Scenarios



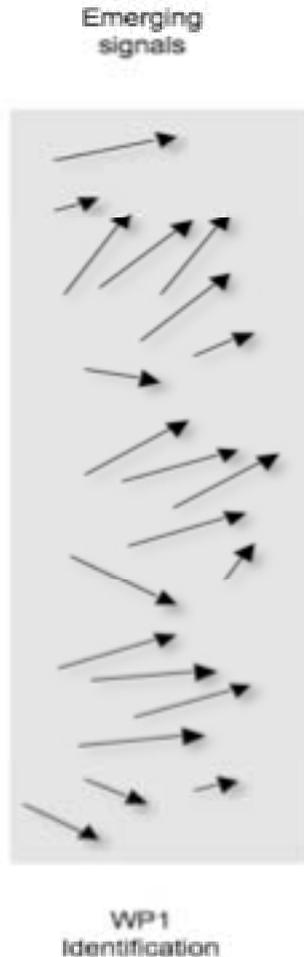
Oct. 2009

Nov. 2010

March 2011

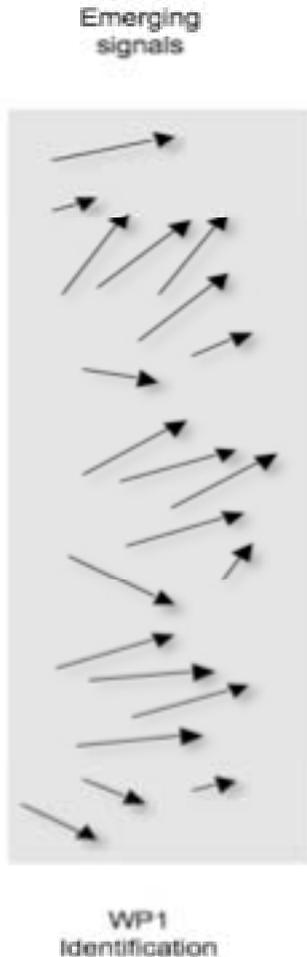


New innovation patterns: Academic literature



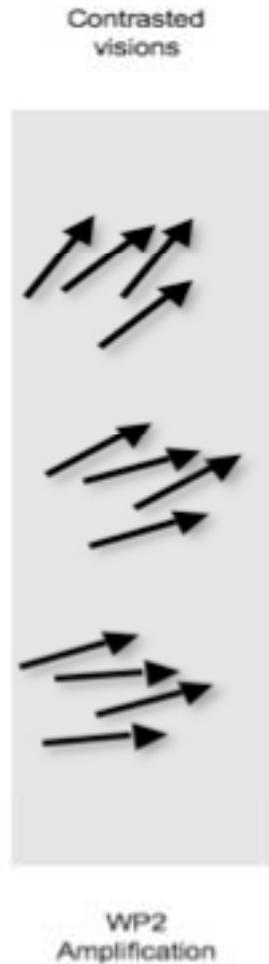
- Open Innovation (Chesbrough)
- User Innovation (von Hippel)
- Virtual Customer Methods (Dahan & Hauser)
- Innovation communities (Tuomi)
- Commons-based Peer-Production (Benkler, Herstatt & Raasch)
- Crowdsourcing (Howe, Brabham)
- Personal Fabrication (Gershenfeld)
- Soft Innovation (Stoneman)
- Design Innovation (Verganti)
- User Created Content (OECD)
- Value innovation (Kim and Malbourgne)
- Eco-Innovation Models (Stahel, Braungarth & Lovins)
- Service Innovation Patterns (Miles)
- Innovation in the Public Sector (Windrum & Koch)
- Social Innovation (Young)

New Innovation patterns: Scanning weak signals



- Ideas in Action – High Transparency at Dell Idea Storm
- MINATEC Ideas Lab
- US-\$ million Reward in Open Innovation Competition
- Idea Contest “Save our Energy – The energy efficient city 2020”
- 24 hours of Innovation
- Fully Sponsored Innovation Camp for Young People
- Innovation Culture of the Tata Group
- Design Thinking in MBA programs
- Breeding Tables
- Bildr – Do it Yourself electronic kit
- Venlo – A Whole Town Adopts the Principle of “Waste is Food”
- Petitions for a New European Patent System
- From Closed Innovation to Top-Secret Innovation
-

Development of innovation visions



- Clustering, selection and integration of weak signals by amplification
- Applying three principles for amplification:
 - i) Radicalisation 
 - ii) Transfer 
 - iii) Generalisation 

Outcome: 19 Innovation Visions



1_Open Source Society...

What if open source development became an all encompassing innovation pattern?



2_Virtual-Only Innovation...

What if many innovations were enjoyed only virtually?



3_Negotio-Vation...

What if innovation became publicly negotiated?



4_Innovation on request...

What if companies generated innovations from user communities?



5_Public Experimentation...

What if experimentation was at the core of innovation?



6_No-innovation...

What if innovation fatigue took over and No-Innovation was en vogue?



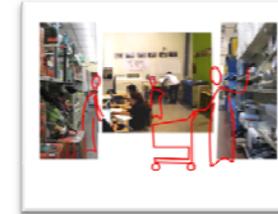
7_Innocamps...

What if people innovated together in proper places?



8_90% Innovation...

What if innovation was directed at population living in poverty?



9_CIIY Create It Yourself...

What if people produced products themselves in fabrication laboratories?



10_Innovation Imperative...

What if the emphasis on innovation spread to all workplaces?



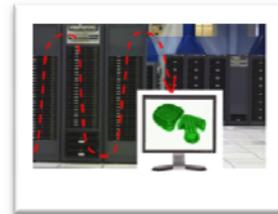
11_Innovation Marketplace...

What if companies externalised innovation to an open innovation marketplace?



12_Innovation Campus...

What if companies collaborated in joint innovation places?



13_Darwin's Innovation...

What if companies used digital systems to randomly create and test innovation?



14_Web-Extracted Innovation...

What if we scanned the internet for ideas and automatically picked the best ones?



15_Innovation meets Education...

What if innovation skills were on the education agenda of kindergarden?



16_Relocated Innovation...

What if the bulk of innovation were to come from today's emerging markets?



17_Waste-based Innovation...

What if the principle of "Waste equals Food"/"cradle to cradle" was widely adopted?



18_Laboratory Stores...

What if stores were to become laboratories where companies and customers co-developed innovations?



19_City driven Innovation...

What if cities became stronger actors in the field of innovation?

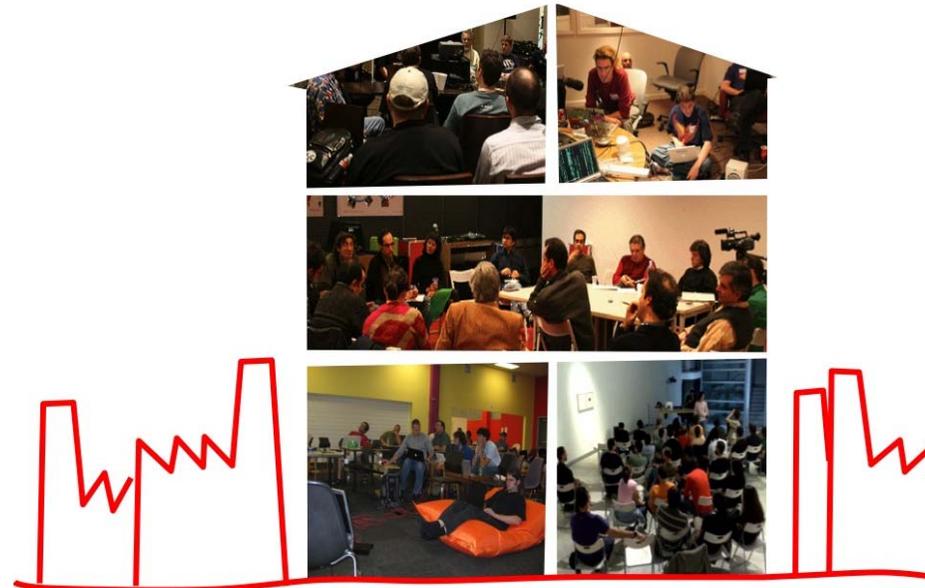
Source:
Jegou et al. (2010)

Innocamps...



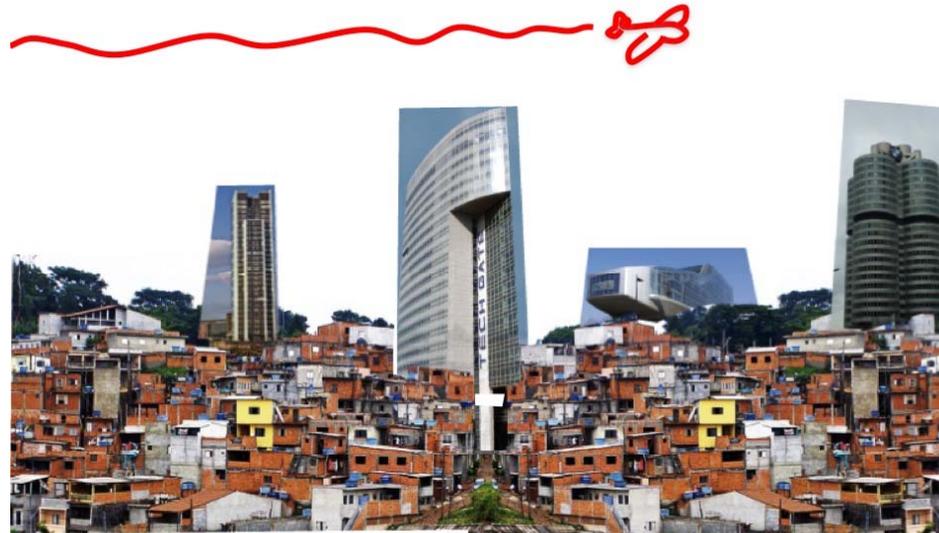
- What if innovation camps, where people gather for a few days to innovate together, became widely established as a means of problem solving?
- Innovation camps are used by companies, the public sector and civil society to solve problems, from high-tech challenges to neighbourhood facilities. Most people regularly join innovation camps.

Innovation marketplace...



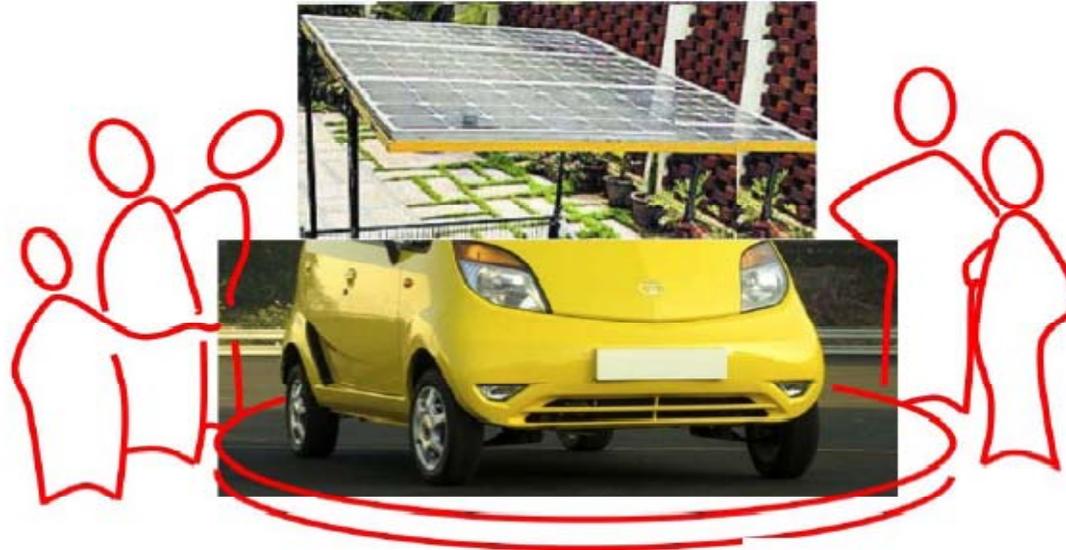
- What if companies no longer innovated themselves but fully externalised innovation to an open innovation marketplace?
- Nomadic innovators bid on innovation tenders and contests in constantly changing teams. They gather in co-working spaces some of which are top-favourite employers for creative people.

Relocated Innovation...



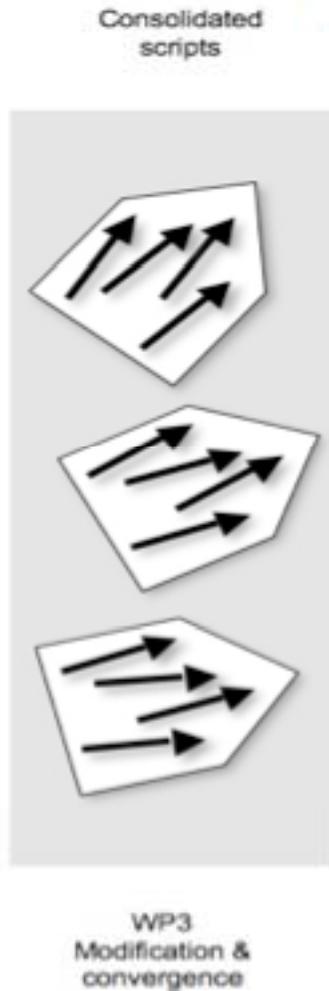
- What if the bulk of successful and disruptive innovations came from today's emerging markets?
- The West adopts the role of a follower and has to face products primarily designed for different cultural contexts. Western companies wishfully look to Asia, often with the help of industrial espionage. Creative people migrate to the new innovation hot spots in Asia and send their money back home to the US and Europe.

90% Innovation



- What if innovation was primarily directed at the “other 90%” of the world population living in poverty?
- Extreme low cost/high innovation strategies prevail. Rich world companies struggle as they lack the competences and culture required. Innovators from today’s emerging markets do much better due to their longstanding experience.

From innovation visions to consolidated visions



- Evaluation of 19 visions in an online survey (60 participants) according to clarity, newness, impact, desirability, likelihood
- Discussed in detail with 20 experts from industry & academia

Clustering & Selection

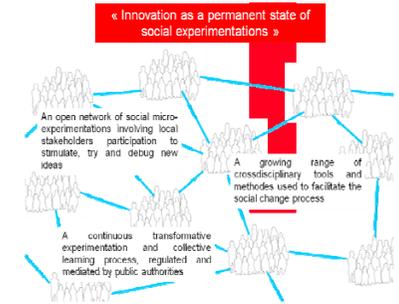
Outcome: 8 consolidated visions were identified. These visions were elaborated in Mini-Panels by self-organised expert groups (= an innovation experiment in itself!)

Overview: Mini-Panel discussions on consolidated visions



<p>Open Source Innocamp Society</p>	<p>Innovation Camps, where people gather for specific innovation tasks for a certain time are becoming increasingly popular. Often the idea is linked to the open source society, where a number of products and services are developed in close interaction among users. Is the required infrastructure based on an open source paradigm? What are the dangers and limitations?</p>
<p>Ubiquitous Innovation</p>	<p>Innovation is becoming mandatory for more and more people in companies and other types of organisations. How can we avoid “innovation overload” and “innovation divide”? What does it mean to live in an environment that is constantly innovating?</p>
<p>Waste-Based Innovation</p>	<p>The establishment of innovation patterns that are fully consistent with a circular flow of resources was unanimously assessed as top priority in the INFU experts’ dialogue. How can novelties emerge out of used products, what kind of consumer types are associated with the pattern?</p>
<p>Automatised Innovation</p>	<p>A number of new techniques such as semantic web analysis allow for automatising parts of the innovation process from idea generation via design and testing. What are the implications for economy and society?</p>

Overview: Mini-Panel discussions on consolidated visions

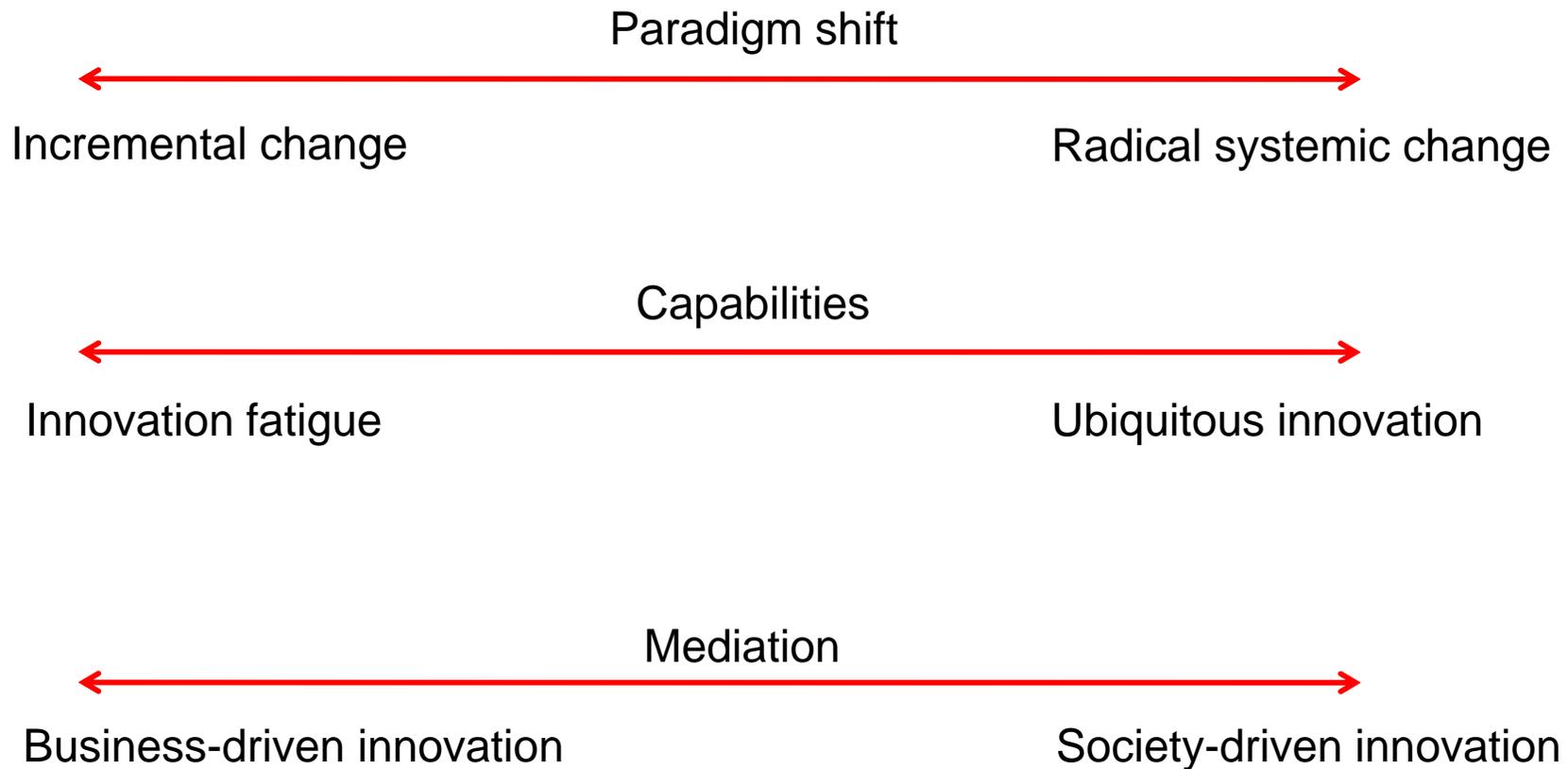


<p>Innovation chain integration</p>	<p>Innovation is expected to become globally dispersed. But what will be the mechanisms to integrate all the distributed and diverse elements and to match ideas and solutions with problems and needs?</p>
<p>City-driven system innovation</p>	<p>Cities are increasingly expected to play a major role as innovation drivers. In particular, systemic sustainability innovations may best be implemented on a city level. What are adequate mechanisms for cities to reap the benefits of this potential?</p>
<p>Deliberative innovation</p>	<p>It is to be expected that citizens will play a more important role both in governing and implementing innovation activities. How will the new type of “deliberative innovation” be governed, what will be the outcomes?</p>
<p>Social Experimentation</p>	<p>Social innovation is more and more recognised as highly relevant for developing innovative solutions addressing societal challenges. New modes of innovation are required to align social and technological innovation activities. Participatory experimentation will play a key role but what are the right instruments and levels required for successful solutioning?</p>

Findings of the Panels

- Several visions are incorporating fundamental changes in the **mechanisms mediating between innovation demand and innovation supply**. In most cases, the role of companies as dominant brokers between needs and solutions is seen to be shrinking and more direct involvement of individual or (more often) collective innovation users is described. A wide variety of **hybrid value creation business models** is being proposed.
- The issue of defining adequate **enabling platforms** between innovation demand and innovation supply and the adequate level for establishing these innovation support infrastructures is addressed in several visions (e.g. Fab-Labs, 3D printing facilities).
- Most visions emphasise the need to **address societal challenges and ,in particular, environmental issues** as a key driver of change not only for the target of innovation but also for innovation patterns.
- Some visions describe **fundamental changes in the macroeconomic environment** such as “economy of contributions”, “on demand economy”, “surplus ecosystem” “learning intensive economy”.

Key factors influencing future innovation patterns



Outlook

- At the moment, we are contextualizing our visions by taking into account well-known socio-economic drivers and are generating scenarios describing relevant, plausible and consistent futures of the innovation landscape
- The scenarios will be assessed by researchers and stakeholders
- Formulation of implications and options for business strategy
- Formulation of implications for research and innovation policy: IPR, regulation, human resources, ...

Information and contact

For more information, publications and a trailer of the innovation visions, see:
www.innovation-futures.org

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