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the Collaboration Board

- Espoo City Planning  
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## “21st Century Knowledge Society in Europe: The Case of the Greater Helsinki Region”

Digitisation and globalisation drive change, and convergence towards digital services is speeding up. Regions and cities need to encourage regional innovation ecosystem development. The activities feature the characteristics:

1. We need to get **more innovations out of research**.
2. Innovation communities operate **as ecosystems through systemic value networking** in a world without borders.
3. Innovation processes are strongly based on demand and **user orientation** and customers as crucial players in innovations.
4. Regional innovation strategies focus on **catalysing open innovation** and encouraging individuals and communities towards an **entrepreneurial mindset** and effective use and creation of new digitalised services.
5. Instead of extensive planning, innovation is based on **experimenting and implementing demonstration projects** by partnerships, using the best international knowledge and creating new innovative concepts.

# The Frame of My Presentation

## Towards Smart Regions

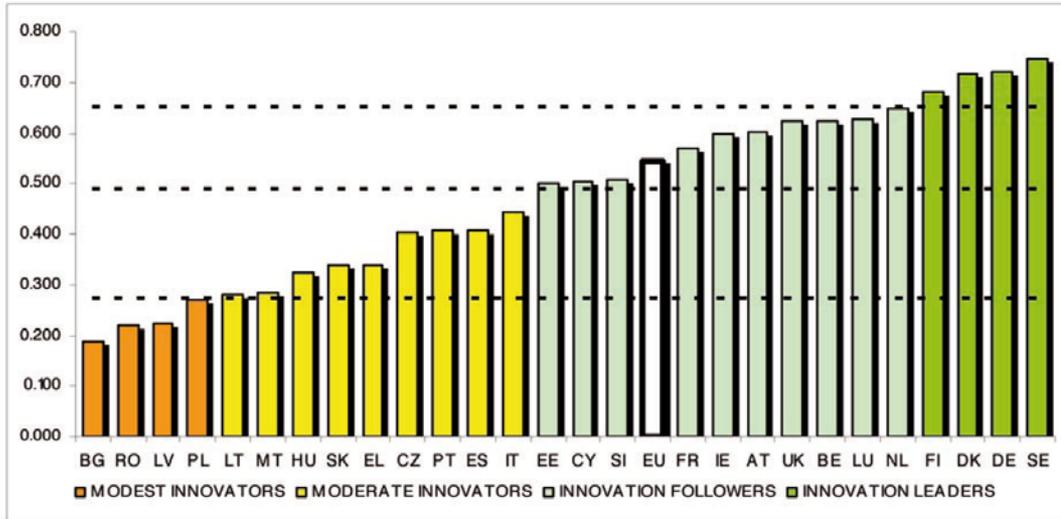
- Europe and the whole world are facing **Grand Societal Challenges, which are characterized by extreme complexity**. Globalization and digitalization have brought these challenges and their underlying cultural factors to everyone's attention. **Mere market forces cannot solve these challenges** but in many cases increase the societal problems.
- Where should we direct our attention? The notions of knowledge creation and transfer of knowledge into practice have taken new forms. In the interfaces between universities, industry, public authorities and citizens, **knowledge exploitation and capacity-building processes constitute important concepts**, as do also exploration and knowledge co-creation. The regional innovation policy tackles these challenges. Its practices need to **integrate top-down policy with bottom-up self-renewing activities**.
- All innovation hubs, so-called **innovation ecosystems**, have four factors in common. First of all, they have globally valued special expertise and corporate activities based on the expertise. Second, they create new knowledge which is applied on a global scale. Third, the hub globally attracts expertise, competence-driven business and investments. Finally, they have companies of excellence that operate globally.



## Setting the European Scene

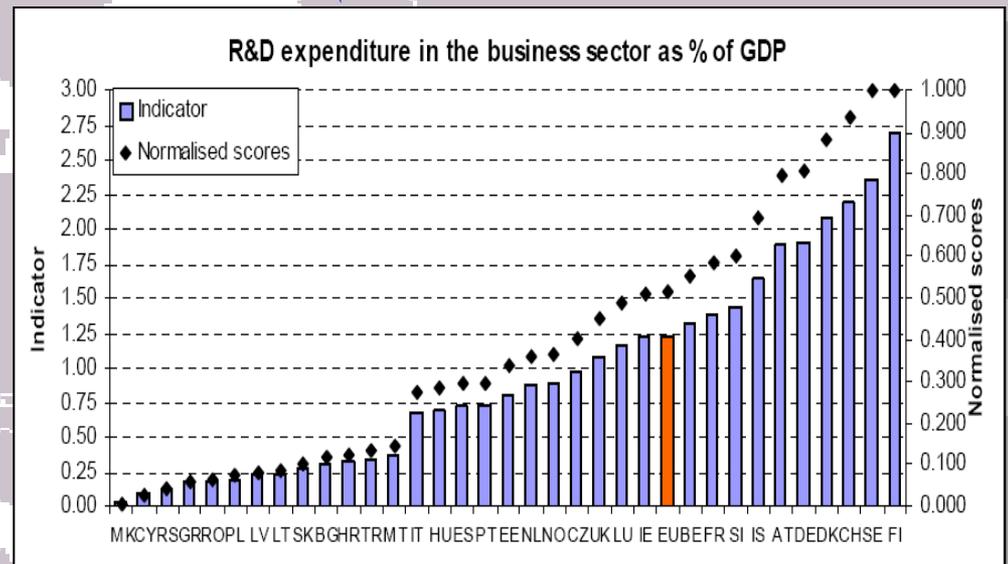
- The knowledge economy is here – with a price
- Globalisation has pushed the boundaries and has changed traditional ways for dealing with regional development
- Global value chains have redrawn the map of conceiving and producing products and services
- Countries / regions that are not able to adapt will see their economies being marginalised
- Global positioning necessary
- Need for a new growth proposition based on knowledge assets

Figure 2: EU Member States' innovation performance



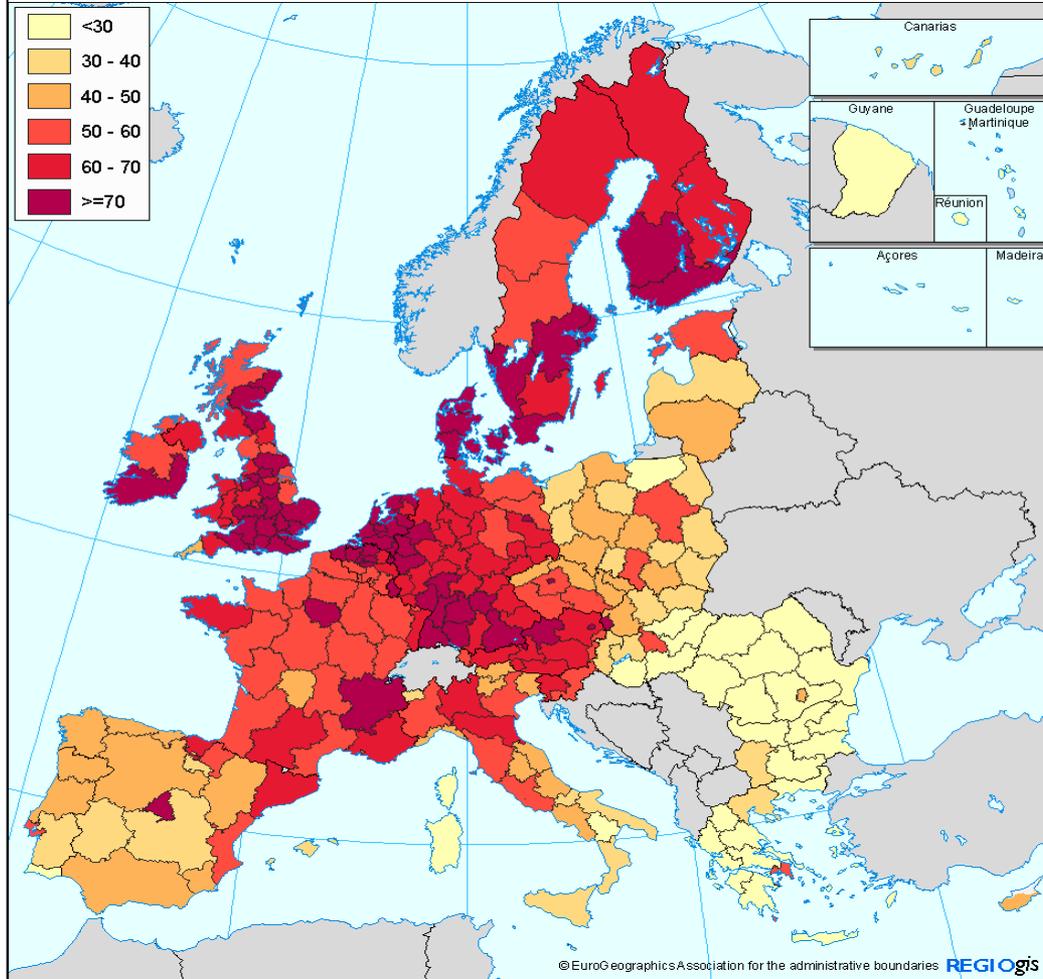
**Innovation performance (2012)**

**R&D expenditure in the business sector as % of GDP (2011)**



## Competitiveness Index, 2010

Index - Values range between 0 (low) and 100 (high)



# Helsinki Region (Uusimaa) is at the top of the European creativity index

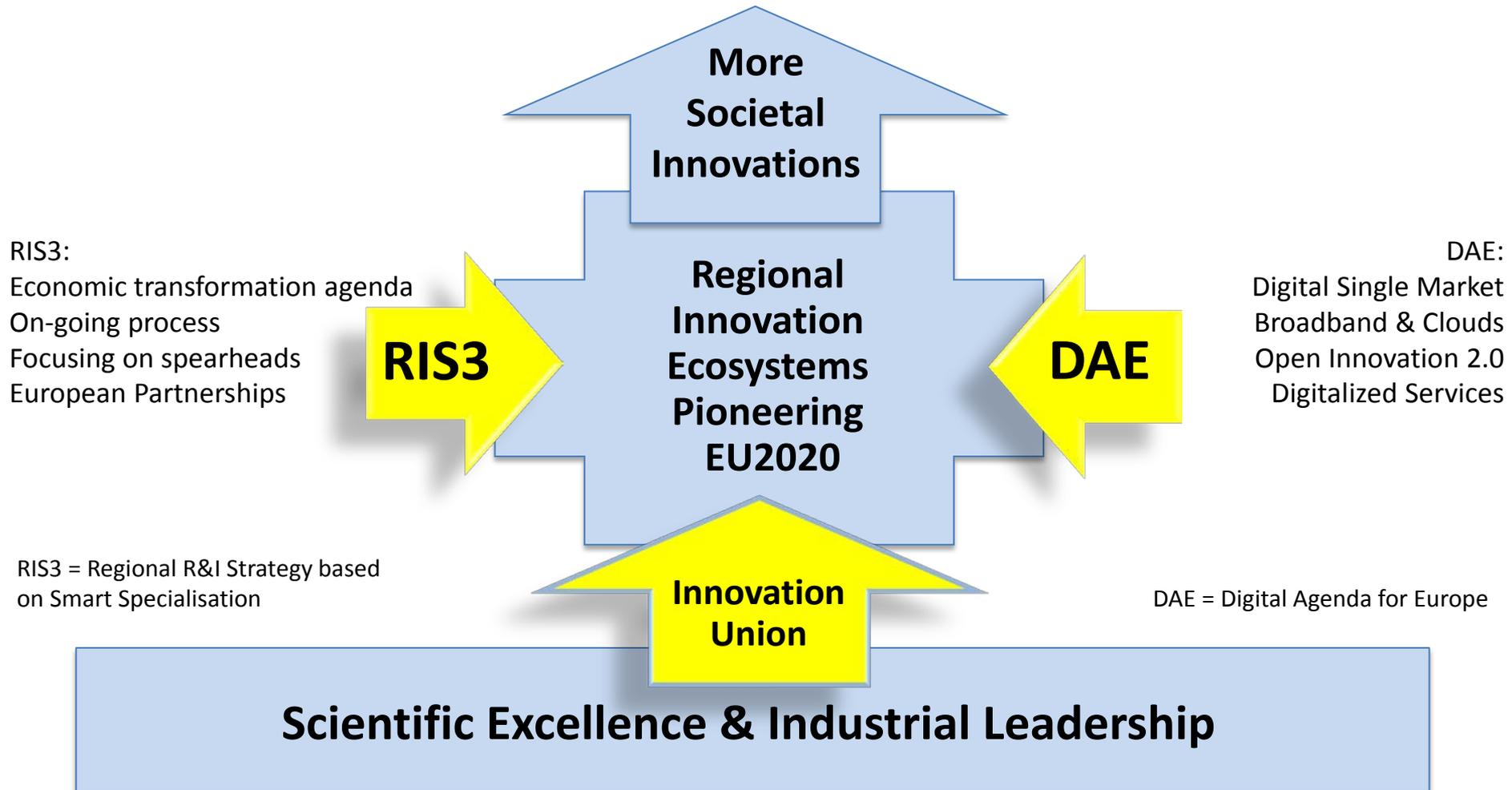


Included in the creativity index are:

- R&D expenditure by business
- R&D expenditure by government
- R&D expenditure by higher education establishments
- Employment in business R&D
- Employment in government R&D
- Employment in higher education R&D
- Patent registrations
- Employment in ICT services



**What is important in Europe 2014-2020 to implement desired changes?**  
**Orchestration to speed up and scale up the EU 2020 implementation: Focus on Regional Innovation Ecosystems**



# EU: How to Fill the Gap between Research Knowledge and Real Life Practice?

There is a **huge gap between the latest research knowledge and real life practice**. What do we need to do to fill it? CoR has defined the following guidelines:

1. Europe needs **pioneering regions** to be forerunners in implementing the EU2020 and through that to invent the desired future.
2. Lifelong learning and the **full use of ICT** are cornerstones for this **change of mindset towards entrepreneurship and innovation**.
3. We need the dynamic understanding of **regional innovation ecosystems** where public, private and third sector learn to operate together.  
**Modernize Triple Helix.**
4. We need methodologies to mobilize public private partnerships and encourage especially people participations: **user-driven open innovation & living labs**.
5. We need to **speed up the change by scalability & implementation**.

# Europe 2020 Strategy:

## 3 integrated focus areas of growth and 7 flagships

<b>Smart Growth</b> developing an economy based on knowledge and innovation	<b>Sustainable Growth</b> more efficient, greener and more competitive economy	<b>Inclusive Growth</b> fostering a high-employment economy delivering social and territorial cohesion
<b>Innovation</b> <i>« Innovation Union »</i>	<b>Climate, energy and mobility</b> <i>« Resource efficient Europe »</i>	<b>Employment and skills</b> <i>« An agenda for new skills and jobs »</i>
<b>Education</b> <i>« Youth on the move »</i>	<b>Competitiveness</b> <i>« An industrial policy for the globalisation era »</i>	<b>Fighting poverty</b> <i>« European platform against poverty »</i>
<b>Digital society</b> <i>« A digital agenda for Europe »</i>		

# Innovation Union Flagship

“Innovation Union defines perhaps the biggest challenge for the EU and its Member States: **To adopt a much more strategic approach to innovation**, an approach:

- whereby innovation is the overarching policy objective,
- where we take a medium- to longer-term perspective,
- where all policy instruments, measures and funding are designed to contribute to innovation,
- where EU and national/regional policies are closely aligned and mutually reinforcing, and last but not least,
- where the highest political level sets a strategic agenda, regularly monitors progress and tackles delays.”

# EU Programme Period 2014-2020: What has changed?

My starting point for the presentation is the new programme period landscape painted by the following new drivers of change and new critical success factors:

1. Focus on impact, especially societal impact
2. More innovations out of research
3. User-driven development: citizens and communities of practice
4. Regional innovation strategies based on Smart Specialisation RIS3
5. From traditional clusters and triple helix to regional innovation ecosystems
6. More multi-disciplinary and breaking the borders
7. Bottom-up: Mindset/mentality is the most crucial
8. Use of cohesion funds on innovation and capacity building
9. Synergy in using Horizon 2020 and Cohesion funds
10. Multi-financing

# EU 2020 → Implementation by Seven Flagships + Renewing EU Research Policy



## Horizon 2020

**Societal  
Challenges**

**Industrial  
Leadership**

**Scientific  
Excellence**

Key Instruments

**Smart  
Specialisation**

**European Innovation  
Partnerships**

**Future Internet  
and other KET**

IMPACT

### **Smart Growth**

developing an economy based on knowledge and innovation

IMPACT

### **Sustainable Growth**

more efficient, greener and more competitive economy

IMPACT

### **Inclusive Growth**

fostering a high-employment economy delivering social and territorial cohesion

# CoR for the Polish Presidency: Lessons Learned → Actions

## Paradigm shift:

- **1. Technological development** has created prerequisites for huge improvement.
- 2. Regions need to take a much more active role. Be ready for **radical (especially societal) innovations**.
- **3. Cities and regions use only a small portion of knowledge and knowhow available.**

## Systemic approach to innovation:

- 4. We need new broad and **cross-sectoral service concepts** and solutions.
- 5. Huge opportunities for better win-win-win between users, public and private sector through **strategic business coalitions** in the region.
- 6. Special need to increase **user- and demand-driven open innovation**.

## Pan European Collaboration:

- 7. Benchmarking, better **collaboration and knowledge sharing**.
- 8. Need to change the European mindset towards creativity and **open innovation through learning from the pioneers**.
- 9. Time for **mega-endeavours with spin-off and spin-in** (project portfolios).

Based on the CoR Opinion on the Role of Regions in Achieving the Objectives of EU 2020 (Opinion on the request of the Polish EU Presidency, Rapporteur Markku Markkula, approved in October 2011 )

# Local Digital Agenda for the Helsinki Region based on Smart Specialisation – Draft (the process goes on)

We will pioneer solutions to tackle Grand Societal Challenges. We will focus on:

1. Smart Urban Design, especially Open Data
2. Active and Healthy Ageing
3. Low Carbon Economy, especially Cleantech & Smart Traffic

This means especially fueling Industrial Leadership by focusing on:

1. Regional Service Architecture and Modeling
2. Digitalization of System Processes, especially Services
3. Mindset and Other Enablers for Start-up and Growth Companies

And this means scientific excellence focusing on:

1. Open Innovation Interlinked Ecosystems
2. Human Centered Living Environments: Integrating Real and Virtual Reality
3. Key Enabling Technologies and their multidisciplinary applications

Draft by Markku Markkula Fall 2013: based on the CoR Horizon 2020 opinion, European collaboration on LDA activities, the EUE/RIE plans, the EU Smart Specialisation Mirror Group and Helsinki Region policy programmes.

# Finland is Centrally Located

Finland is a special country. Back in the day it used to be a distant faraway place.

It's all different now. We're the only place on the planet less than 10 hours from New York, Tokyo, Chicago, Beijing, Shanghai and Hong Kong. Everything in Europe is just 1 to 3 hours from us.

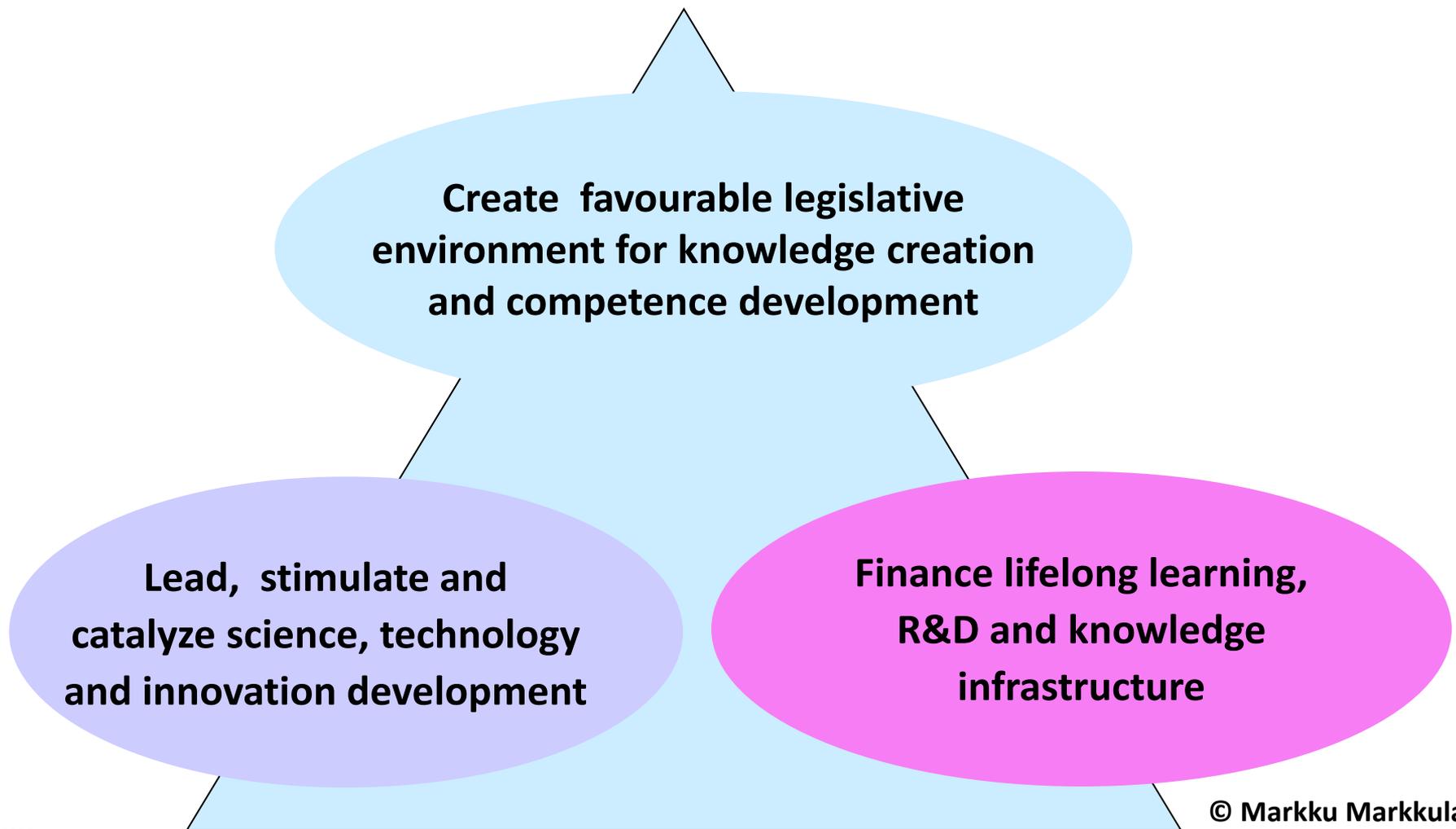
We have no traffic jams, so when it comes to logistics: **FINLAND = GOOD POSITION**



Bangkok	9 h 45 min
Beijing	7 h 40 min
Berlin	1 h 55 min
Brussels	2 h 40 min
Chicago	9 h 35 min
Copenhagen	1 h 40 min
Frankfurt	2 h 40 min
Hong Kong	9 h 50 min
London	3 h 10 min
Moscow	1 h 45 min
Delhi	6 h 45 min
New York	8 h 40 min
Osaka	9 h 35 min
Paris	3 h 05 min
Seoul	8 h 45 min
Shanghai	8 h 55 min
Singapore	11 h 30 min
St Petersburg	1 h
Stockholm	55 min
Tokyo	9 h 40 min
Toronto	8 h 50 min

# Role of Parliaments in National Innovation Policy

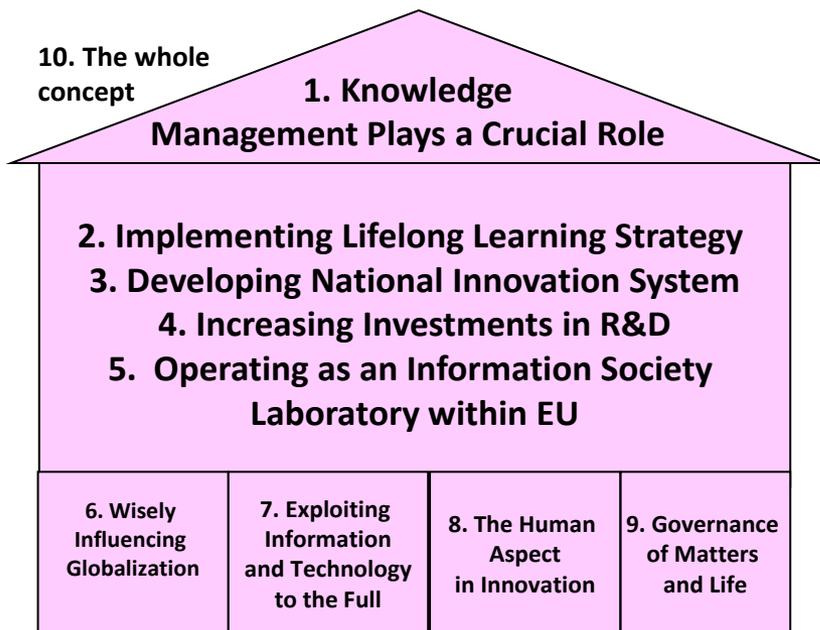
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All the Elements in This Finnish Model Are Fiercely Influenced by ICT:

# The Finnish Road to Success



The following list defines in brief the unique success factors of each element in this Finnish model.

© Markku Markkula

ICT is the driver of change throughout the model:

1. Development and use of personal and organizational knowledge management toolbox.
2. e-Learning is implemented with special focus on the needs of changes in learning and working culture.
3. Linking innovations and productivity and stressing the importance of commercialization.
4. R&D and development of work processes are linked together.
5. The role of a forerunner means the effectiveness in developing concepts based on parallel processes. It means being an effective user of knowledge created globally.
6. Profitable “business” is more and more based on value network management, where different actors operate on mutual dependencies based on shared interests and trust.
7. Knowledge building and knowledge creation are based on what the others have already in use.
8. Not only technological innovations, but also social, cultural and administrative innovations.
9. Motivation and tools for personal and organizational competence development and better quality of life.
10. Managing this knowledge ecosystem through effective systems thinking.

**Historical Basics: People as Lifelong Learners**

**Make heavy investments on the basics of Human / Intellectual Capital**

## **Finland = Something Unique** **(Country where People Invent the Future)**

### **# 1 World's Best Country**

Newsweek, August 2010

### **# 2 Innovation Hot Spot** in the world

Harvard Business Review March 2009;

### **# 1 Higher Education and Training** in the world, World Economic Forum, September 2009;

### **# 1 Availability of Scientists and Engineers** in the world

World Economic Forum, September 2009;

### **# 2 PISA** reading literacy among 15-year olds in the world

OECD December 2010;



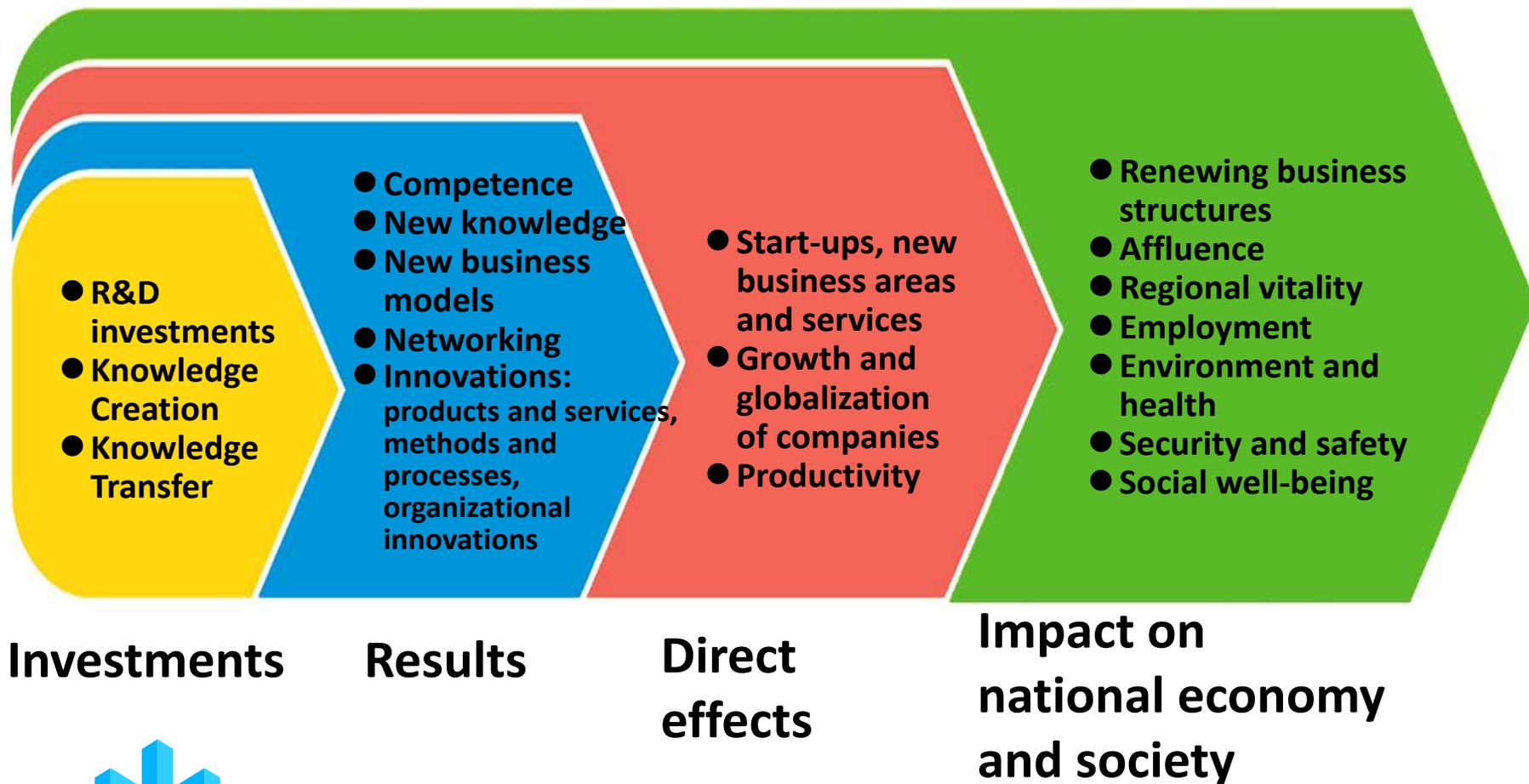
# What Is Knowledge Economy?

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There is not a unique standard Knowledge Society model. However, based on several evaluation studies the following factors seem to be fundamental for the knowledge-based economy:

1. Creativity and innovativeness are the driving forces,
2. Effective networking is a way of life in creating a shared knowledge reality among both individuals and organizations,
3. Increasing intellectual capital is the most important value base of work organizations,
4. Knowledge management and encouraging systematic lifelong learning are bases for building a concept of a learning organization,
5. The future of economic success is more and more built on the national innovation system with special emphasis on a well-targeted regional innovation policy,
6. Increasing the investments in research and development play a crucial role in the governmental policy.

# Innovation – Profitable Investment for the Future



**TEKES**

TKK

Markku Markkula / Developed from TEKES the Finnish Funding Agency for Technology and Innovation

# World Bank Study 2014: Case Finland / The Characteristics

- Strong social cohesion and homogeneity of the population
- Strong rule of law and good governance, very low corruption, and generally **good trust in public institutions**
- Small size and geographic and cultural remoteness
- Recovery from wars and dependence on a very large economy (the Russian Federation) as a primary export market
- A pervasive public sector, **including a welfare state with universal health care and education as well as a broad research, development, and innovation (RDI) policy**, supported by relatively heavy taxation and driven by social cohesion and trust in government institutions
- Broad organization of labor and historically very strong role of labor unions in politics
- **Strong orientation to seeking a broad consensus** on (political) decisions, driven by social cohesion
- **Significant role of the ICT sector**, particularly from the 1990s onward
- Strong orientation toward globalization, especially after joining the European Union in 1995.

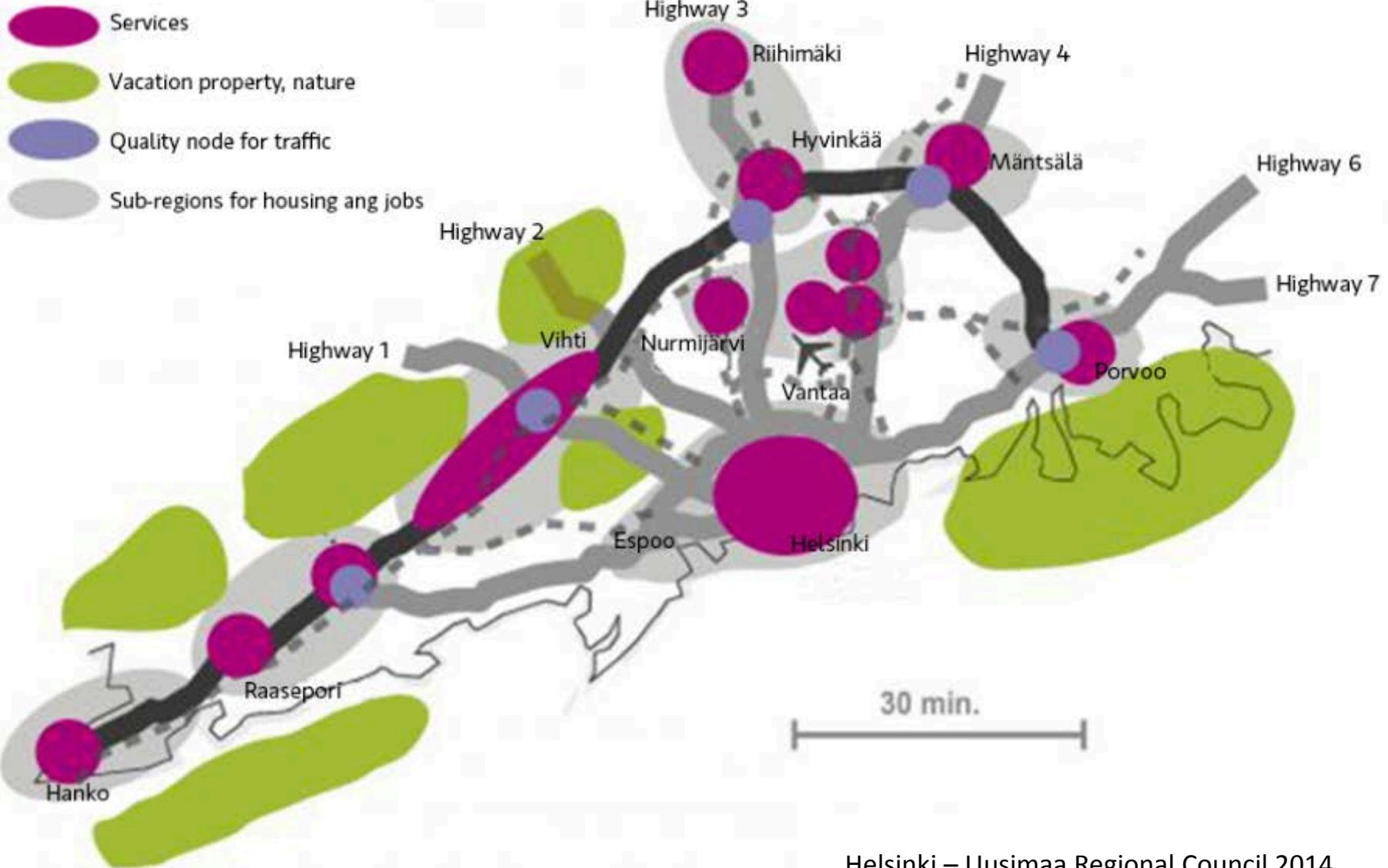
# World Bank Study 2014: The Big Lessons Case Finland

When looking at the Finnish economic transition in the long run, and particularly the latest knowledge economy developments, several overarching messages can be drawn. The following are the most important for policy planning and governance:

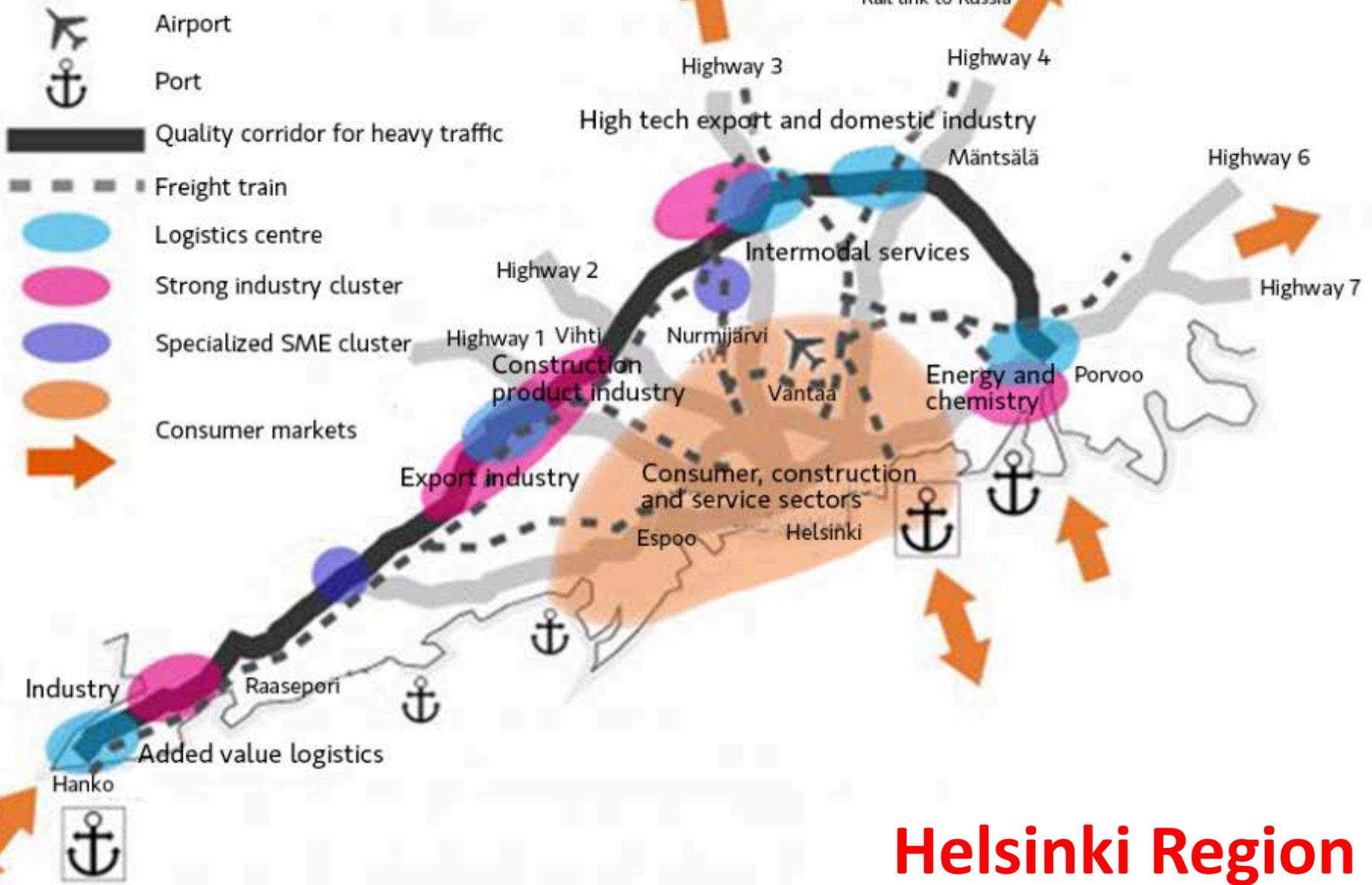
- **Finland has invested substantial time and funds in building its education system, which is the base of its knowledge economy.** This is particularly relevant for developing countries.
- Determined policies and strategies for **building a knowledge economy** are important. Particular to Finland has been its systematic use of consensus mechanisms across all stakeholders in preparing and implementing these policies.
- Looking ahead (forward planning, impact assessment) and adjusting policies, governance, and instruments accordingly—even if sometimes during a crisis—are integral to societal evolution and economic growth. In this regard, **policies and governance models should be flexible and enable cross-fertilization** and horizontal collaboration.
- Finnish knowledge economy strategies have smartly aligned with and lever-aged large corporations. Among the sectors, **ICT has played an important role in Finnish development.**
- **The government** has played an active role in the knowledge economy—**as a coordinator and facilitator**—while giving significant independence to the implementing agencies and regional or provincial organizations to allow for the efficient delivery of these strategies.

Within easy reach on a human scale

# Helsinki Region



# Entrepreneurial environment



**Helsinki Region**



ESPOO

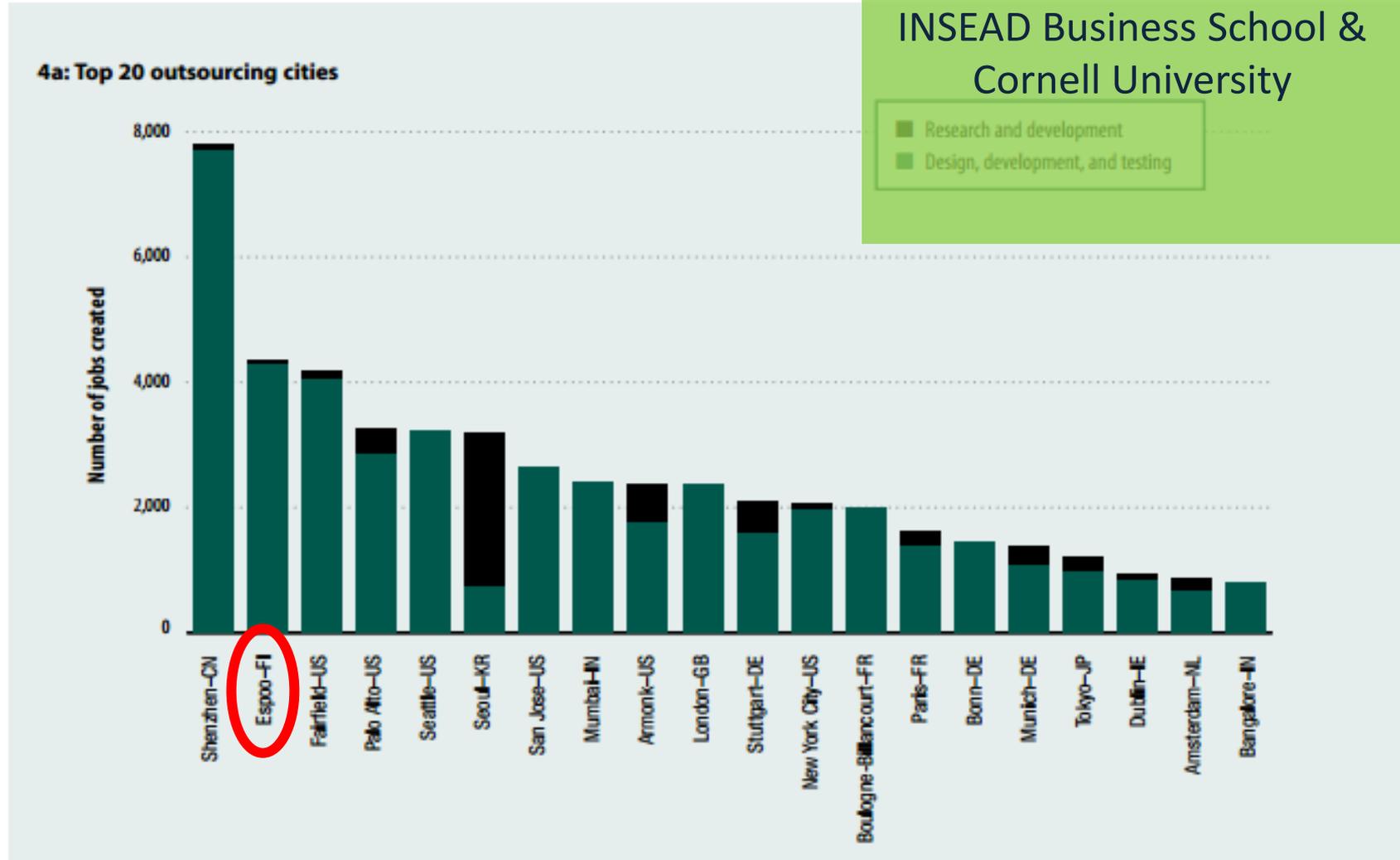
# ESPOO INNOVATION GARDEN



# Espoo #2 in Global Knowledge Intensive FDI

FDI = Foreign Direct Investments

Figure 4: Top 20 cities for knowledge-intensive FDI, 2010–12

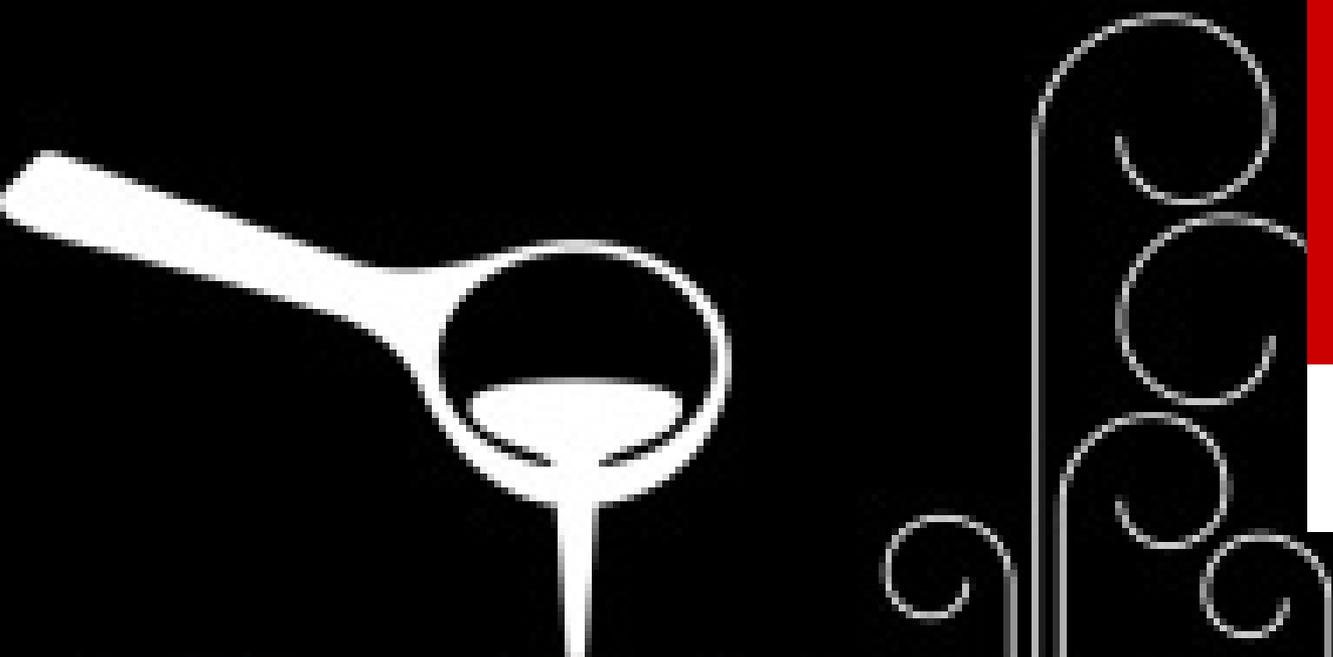


# Otaniemi Hitech Hub, Espoo



- #1 in Northern Europe
- Finland's Silicon Valley
- 8 of Europe's 100 hottest startups
- Tens of Red Herring Europe & Global winners
- 25 R&D Centers
- 5,000 Researchers
- 16,000 Hitech Professionals
- 20,000 Students
- 800 Companies
- 100 Foreign Companies
- 50% of Finland's R&D Value

**FINLAND = R&D POWERHOUSE**



*Selected as Global  
#1 Young Incubator  
July 2014, Silicon  
Valley*

**UBI Index**  
University Business Incubator

# STARTUP SAUNA

# Otaniemi Startup Scene

*1 new per week*

*Startup Sauna*

*Venture Garage*

*Money Talks*

*Slush*

*Summer of*

*Startups*

*Startup Life*

*Spinno*

*Tens of millions  
in VC rounds per  
year!*

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Energy to save **ENIRAM** Customer support

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Delivering **savings of \$45M in fuel and c.163,000 tonnes in CO<sub>2</sub> - annually:**  
this is real time transparency

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Oct 3 2012

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Sep 10 2012

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# Aalto University



Smart Radios and Wireless Research  
Algorithmic Data Analysis Research  
Generic Intelligent Machines  
COMP Computational Nanoscience  
Molecular Systems Immunology  
COIN Computational Inference Research  
Low Temperature Quantum Phenomena

90% of CEO's of NASDAQ OMX listed companies are alumni!

7 Centers of Excellence  
6 Schools  
4,700 Staff  
20,000 Students  
75,000 Alumni



# VTT Research Center



Information &  
Comm Tech



Applied  
Materials



Bio & Chem  
Processes



Micro-  
Tech & Electr.



Industrial  
Systems



Energy  
Technologies

*50 of Global  
Fortune 500  
Companies are  
VTT Customers!*

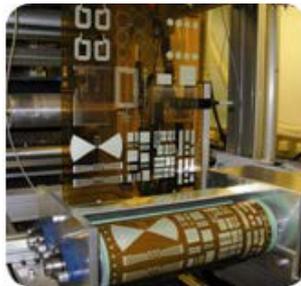
*3,187 Staff (2/3  
Otaniemi)*

*Over 360 Foreign  
Client Companies*

*Over 1,200 Patent  
Portfolio*

*Over 2,000 Scientific  
Articles and Papers  
Published / Year*

*Over 200 EU/FP7  
Projects*



Printable Electric  
Memory



Mobile Phone  
Microscopy



Transparent Plastic-like  
Nanocellulose Material



Cell Factory  
Biofuels



Wireless Monitoring  
Methods



Eco-Efficiency of  
Buildings

# Open Innovation & Smart Specialisation → Fill the Gap between Research and Real Life Practice



# The RIS3 Process: Six Challenges to Implement Smart Specialisation Strategies in Practice

CHALLENGE 1: **The “prioritization” challenge**: how to select (and justify) priority intervention domains for S3?

CHALLENGE 2: **The “integrated policy” challenge**: what are the adequate policies for S3?

CHALLENGE 3: **The “smart policy-making” challenge**: what tools for evidence-based policy (measuring, assessing and learning in S3)?

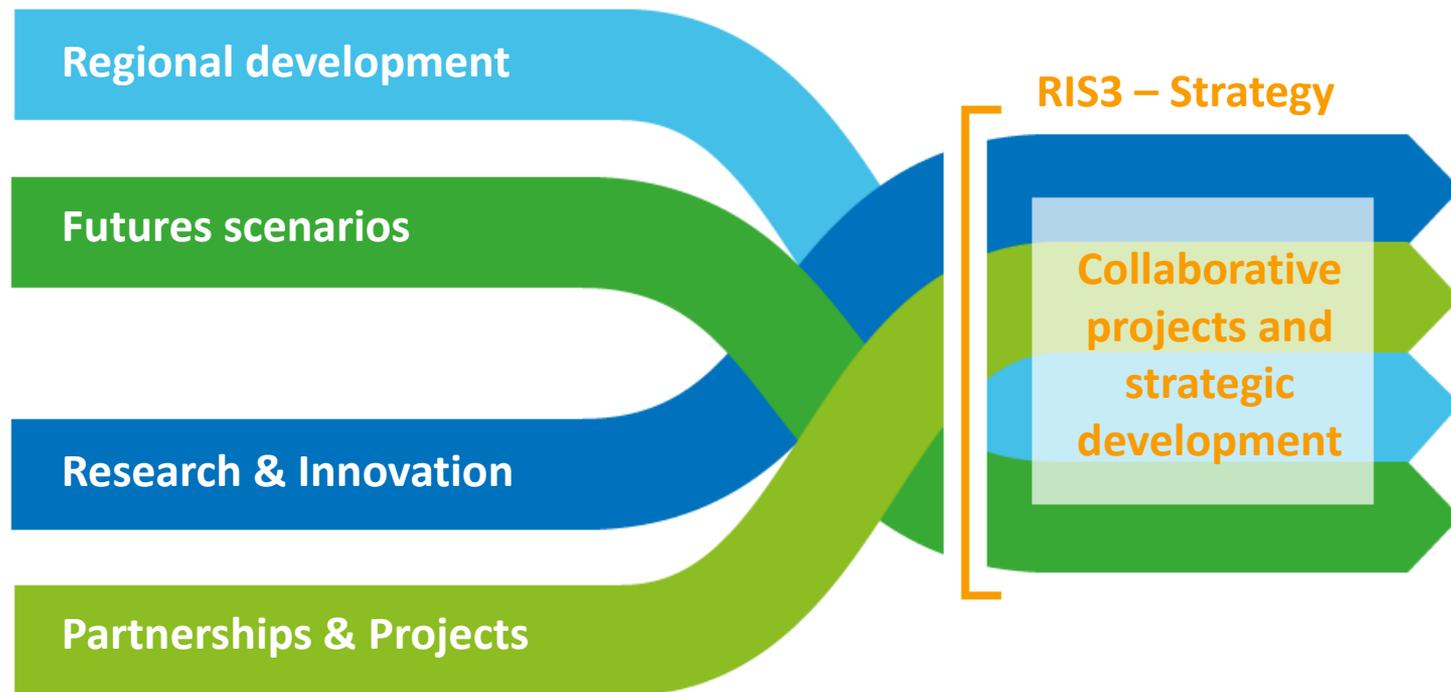
CHALLENGE 4: **The “multi-level governance” challenge**: how to align policies from national, regional, EU levels?

CHALLENGE 5: **The “cross-border collaboration” challenge**: what is the appropriate territory to conduct a S3 and how to conduct policies that conform to it?

CHALLENGE 6: **The “stakeholders engagement” challenge**: how to promote participation, engagement and commitment of the variety of stakeholders?

Markku Markkula CoR Innovation Union keynote  
on 27 Nov 2013, based on “The role of clusters in smart  
specialisation strategies”, DG Research and Innovation

# Smart Specialisation (RIS3) in the Helsinki Region: The On-Going Process as an Economic Transformation Agenda



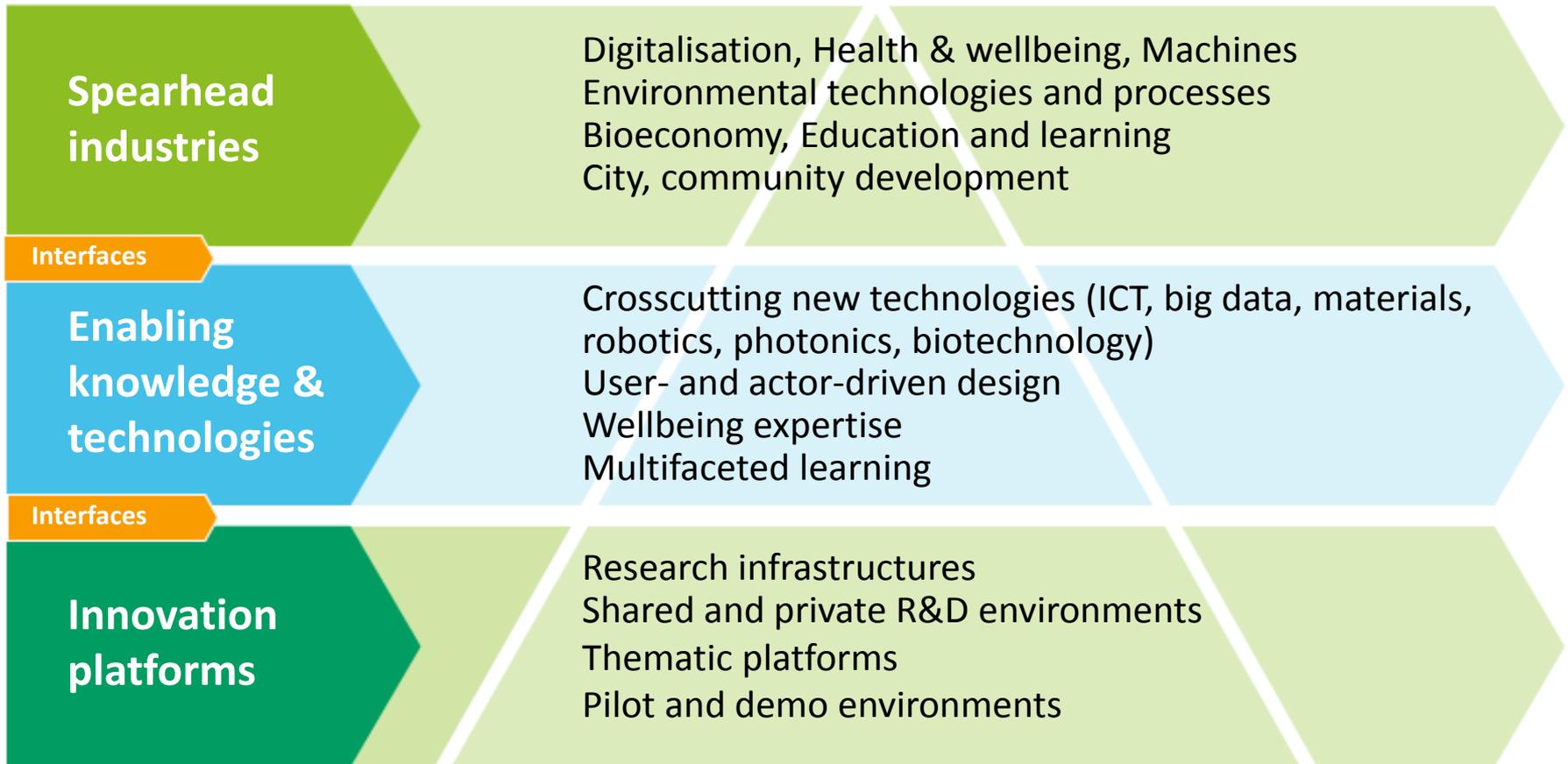
# RIS3 in the Helsinki Region

The aim of the smart specialization strategy of the Helsinki Region is to promote sustainable development by means of new value creation stemming from research and innovation activities. The Helsinki-Uusimaa Regional Council set the following goals for 2020:

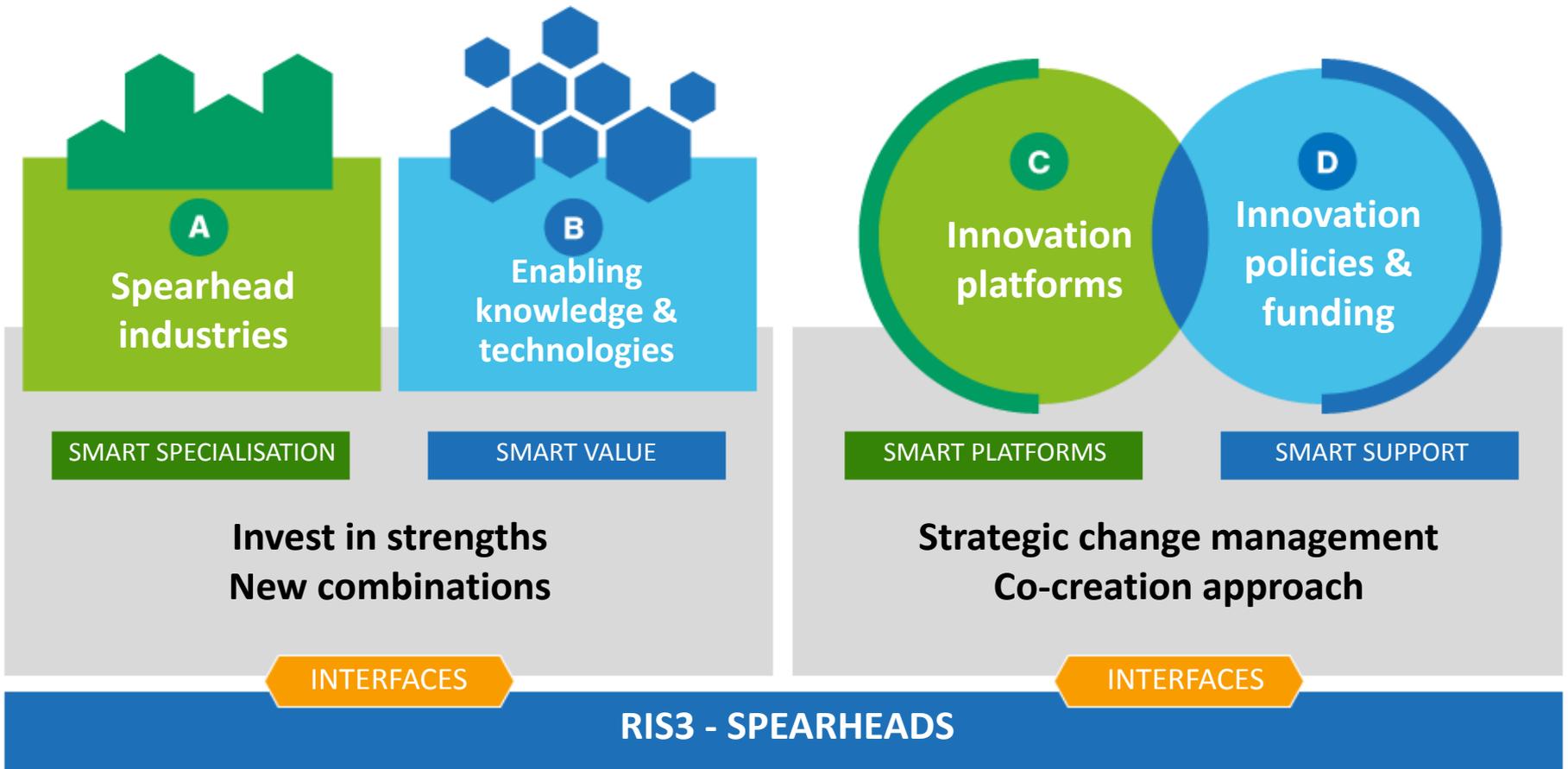
- The Helsinki-Uusimaa region serves as an international innovation hub and forerunner in deploying innovative products and services.
- The regional impact of research and innovation activities will double its value compared to today.
- These goals are pursued through four goals related to a change in the working culture:
  - International breakthroughs emerge from strong innovation hubs
  - The regional expertise is more effectively applied in innovation activities.
  - A networked operating mode is better structured and has more impact.
  - Research and innovation activities are more productive and their operating mode more persistent.



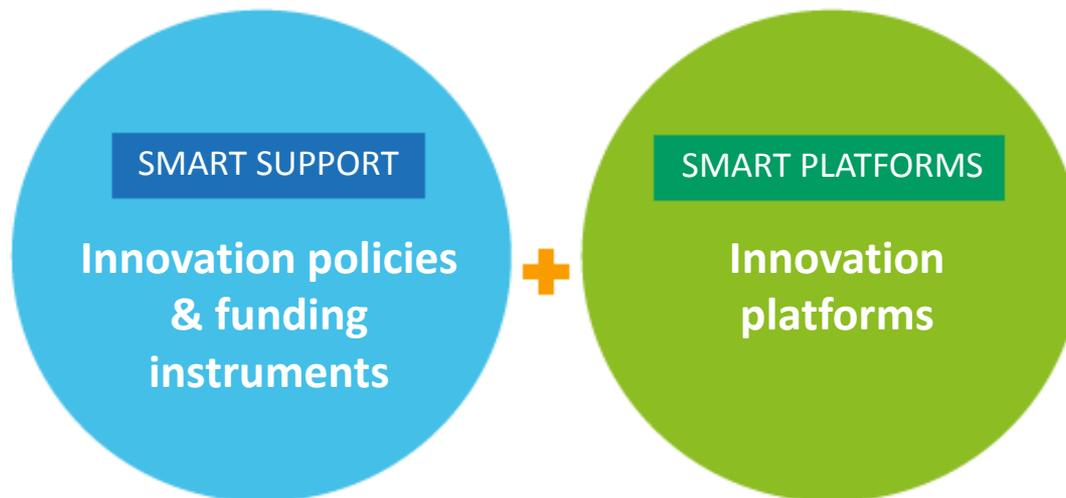
# RIS3 Helsinki Region – Landscape



# How?



# Smart Platforms + Smart Support = Potential for Impact



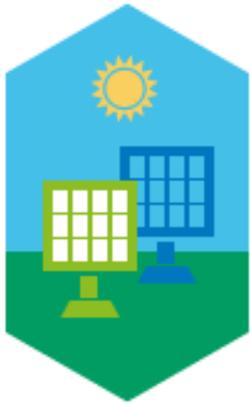
## Key success factors

**New working culture: Orchestration and mobilising key actors to operate on digitalised open innovation platforms**

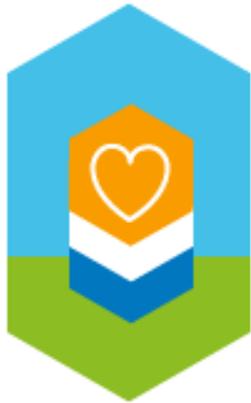


# RIS3 Helsinki Region – Spearheads

**Digitalisation as an all-permeating driver of Change**



**Urban  
Cleantech**



**Human  
Health Tech**



**Welfare City**



**Digitalising  
Industry**



**Smart  
Citizen**

**Open Innovation Digital Platform**

**Business Support Services**

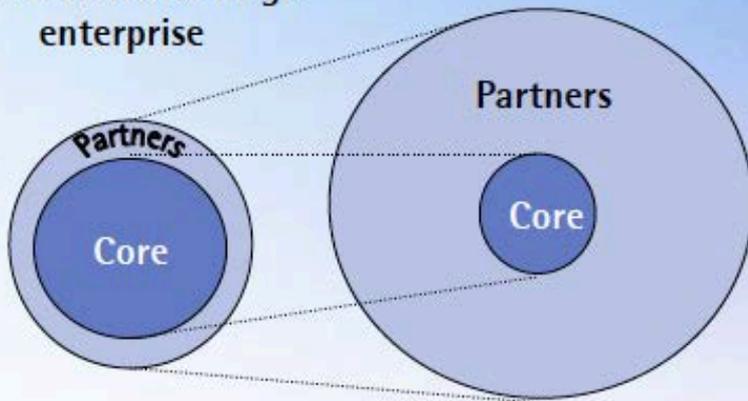


# Innovation networks and ecosystems

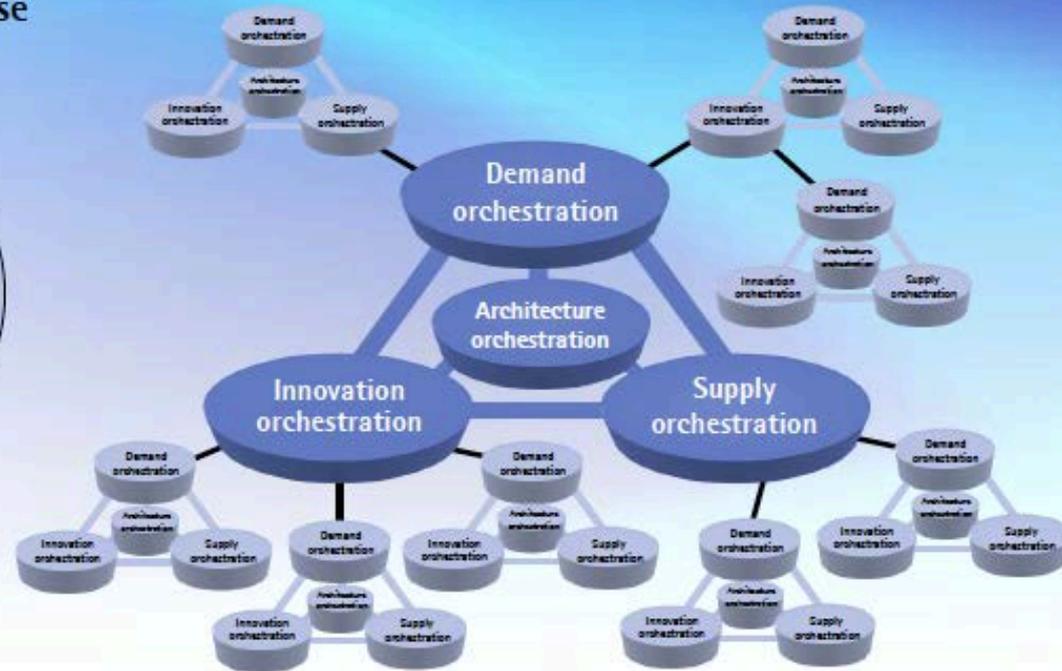
enable new ways of knowledge creation and utilization

to extended enterprise

From traditional large enterprise

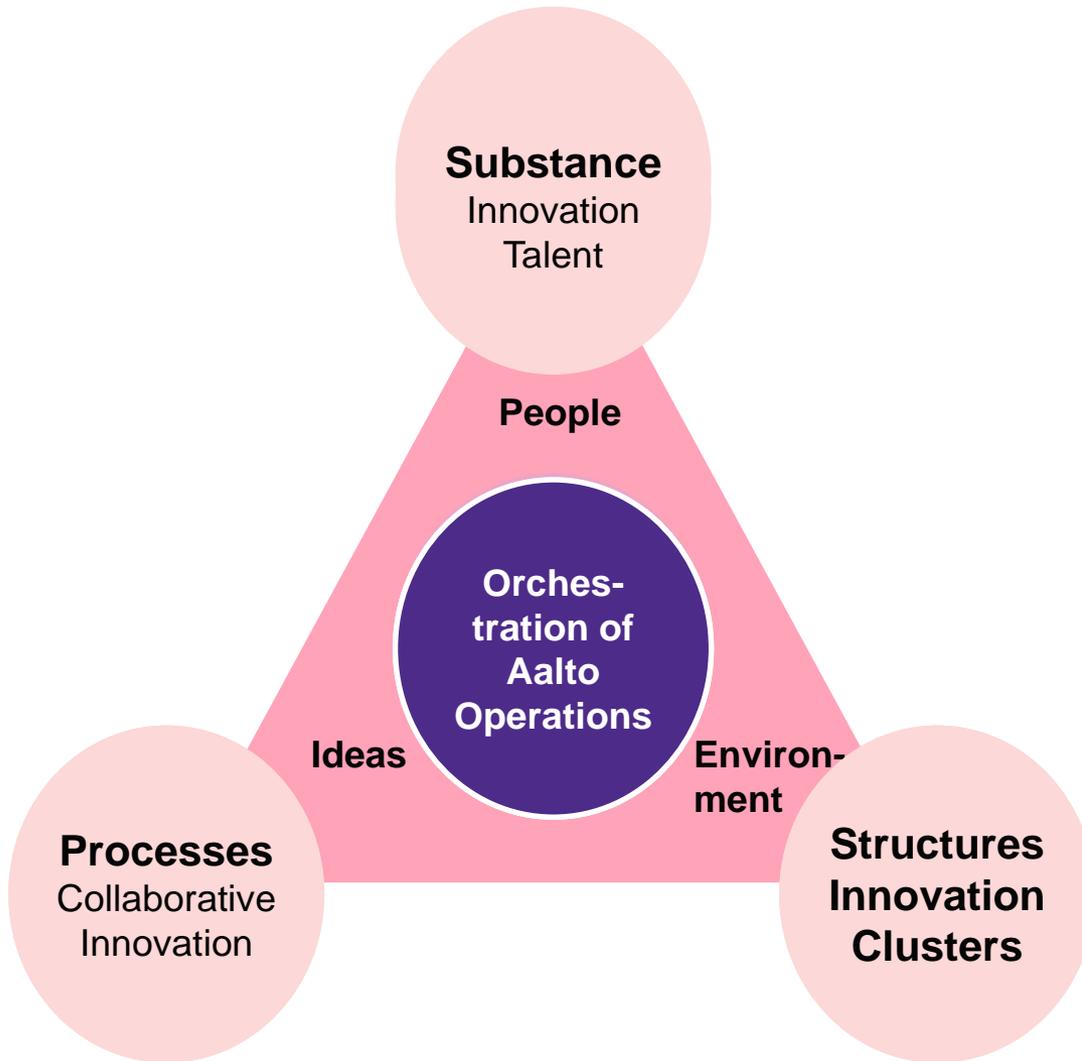


with orchestration capability



We need to react on the changing innovation landscape.

# Systemic Change: RDI Enablers in Aalto



**Substance** means university's subject related research base and the internal and external value networks of the university's research, teaching and societal interaction.

**Structures** are physical and virtual action spaces for research, cocreation and learning, i.e. Aalto Factories and Aalto Innovation Platform

**Processes** are professionally organized core and support Aalto activities for collaboration and strong cultural interaction with the actors and actor groups, i.e. Mega-Endeavours and Aalto Living Lab.

**Orchestration** implements university's strategies to Aalto operations.

# Creating Favourable Conditions for Innovativeness

In Europe, we need to:

1. support the targets to be achieved on competitiveness and innovation by 2020, especially through continued investment in education and training;
2. stress the importance of balancing technological, design and social innovation in both the public and private sectors, all of which are influenced by far-reaching digitisation;
3. strive for societal innovation, with living labs, testbeds and open innovation methods in regional innovation policy-making, while getting citizens on board;
4. highlight the role of a local and regional environment that supports the integration of higher education, research and business;
5. implement the Knowledge Triangle as a key principle in European university reform (greater synergies between research, education and innovation);
6. underline the key role of research infrastructure in knowledge-based innovation systems;
7. focus more on the active use of innovative public procurement, combined with simplification of procedures;
8. stress the importance of Europe-wide collaboration and transnational cooperation projects between regions, building on innovation support and smart specialisation strategies;
9. highlight the potential of cross-border cooperation, including inward investment to and outward investment from the EU;
10. improve competences for innovation and fostering a new innovation mind-set built on dialogue, collaboration and co-creativity to learn from best practice;
11. encourage bottom-up activities: co-creation, co-design and co-production, working in true "know-how" collaboration instead of just urging governments to develop new "solutions" for citizens. This broad collaboration, which includes people from local communities, is also necessary to implement innovative ideas in real life, in different cultures throughout Europe;
12. engage business interests not just in innovation, but in "innovation for wealth creation", where wealth has a richer meaning than just profit and refers to enhancing quality of life and the development of a happy and healthy world.

# CoR Opinion on “Closing the Innovation Divide”

(30 May 2013)

The recent development has throughout the world led to new operational units with flexible entities characterized by a strong collaborative approach in all their activities. As the Committee of the Regions defined in its opinion “Closing the Innovation Divide”, the examples include: **Incubators and Accelerators, Living Labs, Entrepreneurial Hubs, Development Labs, Social Innovation Labs, Fab Labs, Societal Innovation Learning Camps and Future Centers.** They usually operate as associated collaborative entities of universities, municipalities and businesses. Other points in the opinion include:

1. **“As many phenomena of the digital society have already demonstrated, significant transformation takes place from the bottom up, and a pervasive mindset of "entrepreneurial discovery" is critical.** The CoR encourages the Commission to set up "entrepreneurial discovery" programmes to work at different levels and discover what is most effective for local needs and European scaling.”
2. “Innovation communities operate as ecosystems through systemic value networking in a world without borders. **Regions need new arenas as hotspots for innovation co-creation.** These could be described as "innovation gardens" and "challenge platforms", which together form prototype workspaces for inventing the future.”
3. “The best pioneers for developing and running Europe-wide projects should be financed through Horizon 2020 and cohesion funding – **the aim being also to test effective methodologies and tools in real life collaboration and cross-border learning.**”

## CoR key messages and proposals:

# 1. Painting the Innovation Landscape & A Few Crucial Policy Guidelines to Achieve the Targets of EU2020

In Europe, we need to:

1. stress the importance of Innovation. It is about networking and collaboration in a deep sense: **Modernizing Triple Helix → Regional Innovation Ecosystems**
2. encourage **bottom-up** activities: co-creation, co-design and co-production, working in true "know-how" collaboration instead of just urging governments to develop new "solutions" for citizens.
3. strive for **societal innovation, with living labs, testbeds and open innovation** methods in regional innovation policy-making, while getting citizens on board;
4. **implement the Knowledge Triangle** as a key principle in European university reform (greater synergies between research, education and innovation);
5. focus more on the active use of **innovative public procurement**, combined with simplification of procedures;
6. stress the importance of **Europe-wide collaboration** and transnational cooperation projects between regions, building on innovation support and **smart specialisation strategies**;

## CoR key messages and proposals:

# 2. Entrepreneurial Discovery → a Key Driver of Transformation

1. As many phenomena of the digital society have already demonstrated, significant transformation takes place from the bottom up, and a pervasive **mindset of "entrepreneurial discovery" is critical**. The term "entrepreneur" is inadequate here because it is often interpreted rather narrowly.
2. Discovery also means more than innovation. It is rather a new activity – **exploring, experimenting and learning** what should be done in the relevant industry or subsystem in terms of research, development and innovation to improve its situation.
3. Entrepreneurial discovery means experimentation, **risk-taking, and also failing**. It means individuals often working together with others in networks, assessing alternatives, setting goals and **creating innovations in an open-minded way**.
4. The CoR encourages all parties concerned to actively engage in **science-society dialogues** that explore and underscore how to translate the results of research into real-life practice. **Schools** and all educational bodies play a crucial role here.

### 3. Knowledge Sharing and Reuse – A Circular Economy

1. We need to speed-up the transformation by **Europe wide partnerships based on pioneering and scaling**.
2. A circular economy is an economy in which things are not thrown away or lost, but allowed **to circulate and be reused** so that their value is not lost, but enhanced.
3. The term derives from new thinking about next-generation concepts for sustainable development. In a circular economy for knowledge, the results of research programmes and projects – ideas, insights, recommendations, methodologies, practical proposals, prototypes and inventions – can be rediscovered, accessed, and applied in current programmes and projects in related and relevant areas.
4. In moving towards a circular economy for knowledge, national funding bodies could revisit and explore the results of projects completed during the last 5-10 years, and unlock their treasures for reuse in new regional and national contexts. Directorates-General in the Commission could do the same, **making results accessible more broadly across different domains**, in order to address societal challenges.
5. RDI activities are required to pilot and create prototypes of
  - a. spatial configurations with **physical, intellectual and virtual dimensions**, and
  - b. **orchestration and knowledge management toolkits** needed to address challenges.

## 4. Creating Challenge Platforms Based on Co-creation and Bench-learning

1. Digitisation drives change, and convergence towards digital services is speeding up. New **business ecosystems and value creation arenas are often driven by new consumer behaviours** – as a result of user-centric designs and openness.
2. Regions need new arenas as hotspots for innovation co-creation. These could be described as **"innovation gardens" and "challenge platforms", which together form prototype workspaces for inventing the future.**
3. The CoR stresses that **these platforms should be based on** both **bench-learning** (validating ideas that work in one organisation and one region by testing them in other organisations and regions) and **bench-doing** (giving added value to new ideas by turning them into practical innovations in several regions at the same time).
4. However, we need to stress the importance of research. Knowledge exploitation and capacity-building processes, and knowledge exploitation in organisational learning, are concepts that are becoming important, as well as exploration and knowledge co-creation.

## CoR key messages and proposals:

# 5. Developing Attractive Innovation Environments

Digitisation drives change, and convergence towards digital services is speeding up:

1. The best laboratories for breakthrough innovations today are no longer traditional university facilities, but **regional innovation ecosystems operating as testbeds** for rapid prototyping of many types of user-driven innovations, based on transformative and scalable systems.
2. Innovation communities operate **as ecosystems through systemic value networking** in a world without borders.
3. Innovation processes are strongly based on demand and user orientation and **customers as crucial players in innovations.**
4. Innovation strategies focus on **catalysing open innovation** and encouraging individuals and communities towards an **entrepreneurial mindset** and effective use and creation of new digitalised services.
5. Innovation is often based on **experimenting and implementing demonstration projects** by partnerships, using the best international knowledge and creating new innovative concepts.

## 6. What next? Exploring & Experimenting & General Action

1. The CoR strongly believes that the process of defining how the many suggestions and recommendations in this opinion can be realised in practice, and **collaboratively exploring promising approaches for implementing them** within and across regional boundaries, is the most effective way to turn excellent intentions into real results with a powerful impact on the streets of Europe.
2. The objective is to accelerate the desired change both in general and through a number of measures designated as priority projects.
3. **Responsibility for the changes needed lies with all levels and all players.**
4. Responsibility for implementing the proposals made in this opinion will of course lie chiefly with **the European Commission**, as well as local and regional decision-makers and other players. Responsibility also lies with **the Irish presidency and also the forthcoming presidencies**, which can put some or all of the proposals made here into effect as soon and as far as possible.
5. **The CoR recommends that the potential of the EU's INTERREG initiative be fully exploited and that it be given sufficient resources by establishing platforms for mutual learning and also by fostering the international exchange on innovation strategies.**

**Implementation:  
Real Life Cases for Bench-learning**

# Espoo Innovation Garden & Aalto University Campus 2020

Nokia

Rovio

Tapiola  
Garden  
City

Young entrepreneurial mindset



Let's be  
LOVEBIRDS

Aalto  
University

EIT ICT Lab

Laurea

According to the plans, by 2020, there will be new investments of 4-5 billion € metro, tunnel construction of ring road, other infra, housing, office and business buildings, public services, university buildings, sports and cultural facilities...



ESPOO

# T3 - Espoo Innovation Garden

**43,000**

work here

**43,657**

live here

**63.6%**

of residents over 24  
hold a university degree

**5.8 €**

billion of investments  
within 10 years



Public – Private – People – Place

Inspiring – Innovative – Interactive – Integrating

Sustainable Innovation Ecosystem = complex function (Governance Systems + Economic Systems + Social Systems + Urban Systems)

European Capital of Innovation Award:  
The Espoo City has decided to be the winner in 2016.



# Aalto University Research *excellence*

Focus and relevance by building on strengths

PULL

Themes driving interdisciplinary research

Digital society  
*Mobile technologies, services, media, games, entertainment*

Energy & sustainable use of natural resources  
*Bioeconomy*

Human-centred living environments  
*LivingPlus*

World class potential

Global business dynamics

Process and systems competence

Architecture

Art

World class

Computation and modeling

ICT

Materials

Design

New media

PUSH

4 National Centres of Excellence in Research  
5 ERC Advanced Grants  
12 ERC Starting Grants  
7 Academy of Finland professors and over 35 research fellows.

Aalto is participating both of the 1 billion euro EU FET flagship projects (Human Brain and Graphene).

Based on extensive international research evaluation (RAE), 2009

# Fostering entrepreneurship ecosystem

**Aalto Start-up Center**  
*80 companies in incubation/ 32 high growth*

**Corporate partners**  
*Complementary Parties Coaches*

**EIT ICT Labs EIT Nodes & partners in Europe**

**AppCampus**  
*2500 submissions reviewed in 18 mths  
150 Investment decisions made  
30 Applications launched, running rate 15-20 apps per month*

**Startup Sauna**  
*30-40 companies in acceleration / year  
20 million Euros raised  
30 students trained with internships*

**AaltoES**  
*9000 community members  
100 activists  
Annually 8000 participates events*

**PYK (Small Business Center)**

*Training for entrepreneurs*

**Aalto Center for Entrepreneurship**

*Around 200 innovation proposals/year  
-> 10-15 companies  
->15-20 patent applications*

**Aalto Ventures Program**

*Problem based learning program to foster entrepreneurial mindset and skills*

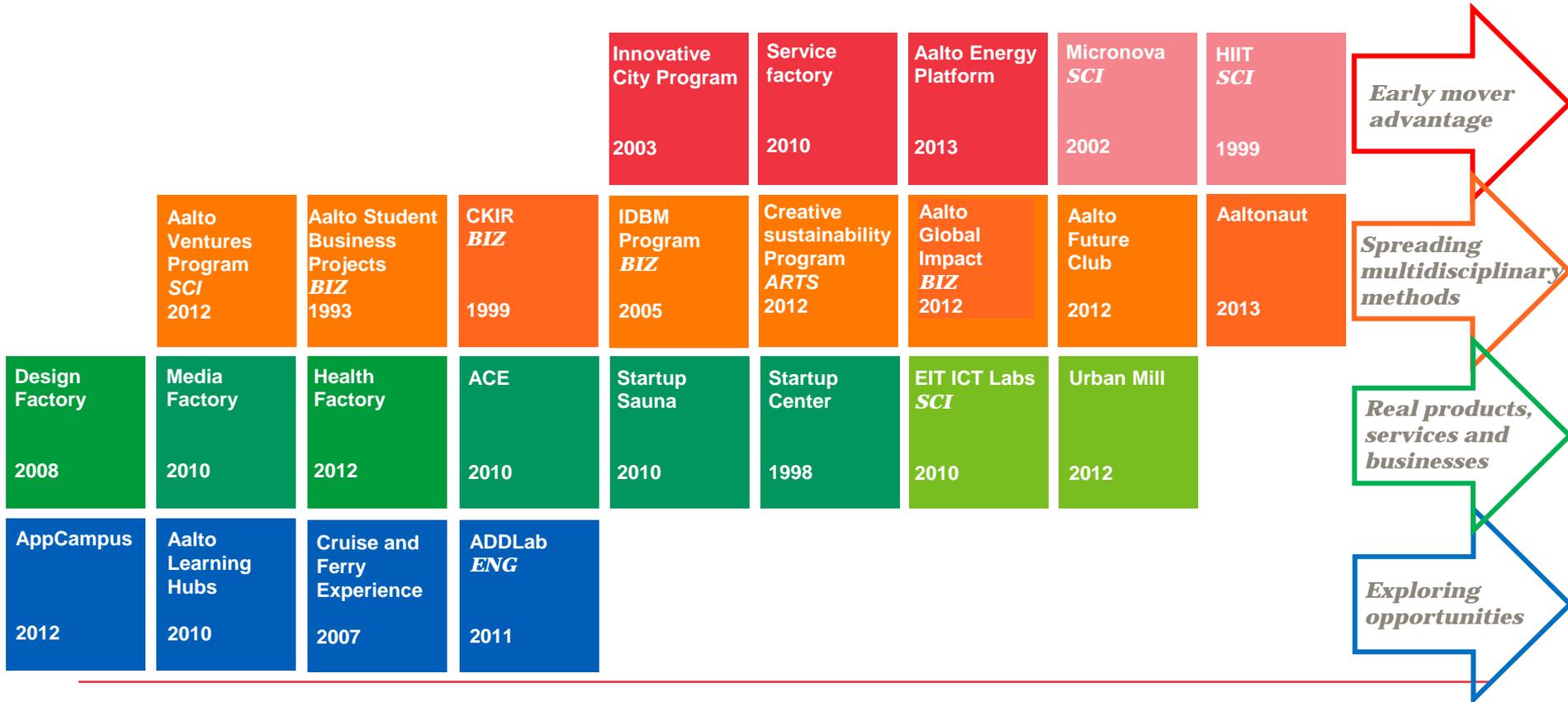
*Co-operation with Stanford*

**Research & Education**



# Multidisciplinary platforms at Aalto

The whole range of abstraction levels



# Aalto *Factories* – Innovation in action

Design  
Factory

Media  
Factory

Service  
Factory

**Environments and ecosystems** for learning, research and **co-creation**

- Students
- Researchers

## • **Companies**

Unicef	Coreorient	Locomotec	RAY	Fluid
Audi	Ensto	Metso	Sako	NSF
eFM	Ericsson	MetsäWood	Wärtsilä	Storaenso
Washtec	GE	NetMedi	Rovio	Introdex
Carvajal	Helsinki	Nextim	Qonsalt	Unicef
Biolan	Kone	Nordic Hug	Chemical Industry	Toyota
Comnet	Konecranes	Philips	Federation	VWG
Kesko	USP			

- Society – e.g. Urban Mill
- Strong global interest and expanding presence



” *I have never enjoyed school as much as I have this past year in the IDBM program.*



Have a look at:  
[www.aaltodesignfactory.fi](http://www.aaltodesignfactory.fi)

# Mindset is the Key

*Expertise made fun*

” *...at times it felt like we lived at Design Factory, but that's the best way to experience the true power and possibility of the building*



**EU Calls for Transformation:**  
**Europe needs pioneering regions, as pathfinders and rapid prototypes.**  
**Helsinki Region has forerunner instruments in use:**

- Aalto Design Factory
- Aalto Venture Garage
- Aalto Camp for Societal Innovation
- and many more ...

*Intensive experiences*

” *The ability to share knowledge is one of the most rewarding features.*



**Mental entrepreneurial mindset with joint collaboration spaces and activities**  
→ Aalto Design Factory & Startup Sauna & Urban Mill → Aalto Innovation Garden (three old buildings) → Implementing Knowledge Triangle



We need concepts to increase synergy.

<p><b>On-going joint process for defining and co-creating joint action themes and vision</b></p>	<p><b>Physical space of real hectic action for research with experiments, demos and prototypes</b></p>	<p><b>BA &amp; Flow, demo days &amp; social media, other forms of effective communication, virtual reality</b></p>	<p><b>Passionate key persons, networking, processes, platforms, focus on boundary objects</b></p>
<p><b>Bottom-up activities</b></p>			

# Entrepreneurial community

## Startup Sauna

- Growth entrepreneurship accelerator and movement run by Aalto students
- Main focus on the Nordic Countries, Northern Europe and Russia
- Local events to promote the program in New York, Los Angeles, San Francisco, Beijing, Shanghai, Tokyo, and elsewhere in China and Japan.

**SLUSH 2013**  
5000 visitors  
1000 start-ups  
500 investors  
300 media



UBI Index  
@ubiindex



Aalto University Startup Sauna has been recognized as the leading Young University Incubator!

[bit.ly/17zdRoR](http://bit.ly/17zdRoR) @startupsauna

7:08 PM - 8 Aug 2013

# SLUSH 2014

New record: 14 000 participants including 1300 young volunteers, 750 investors, 1400 startup companies



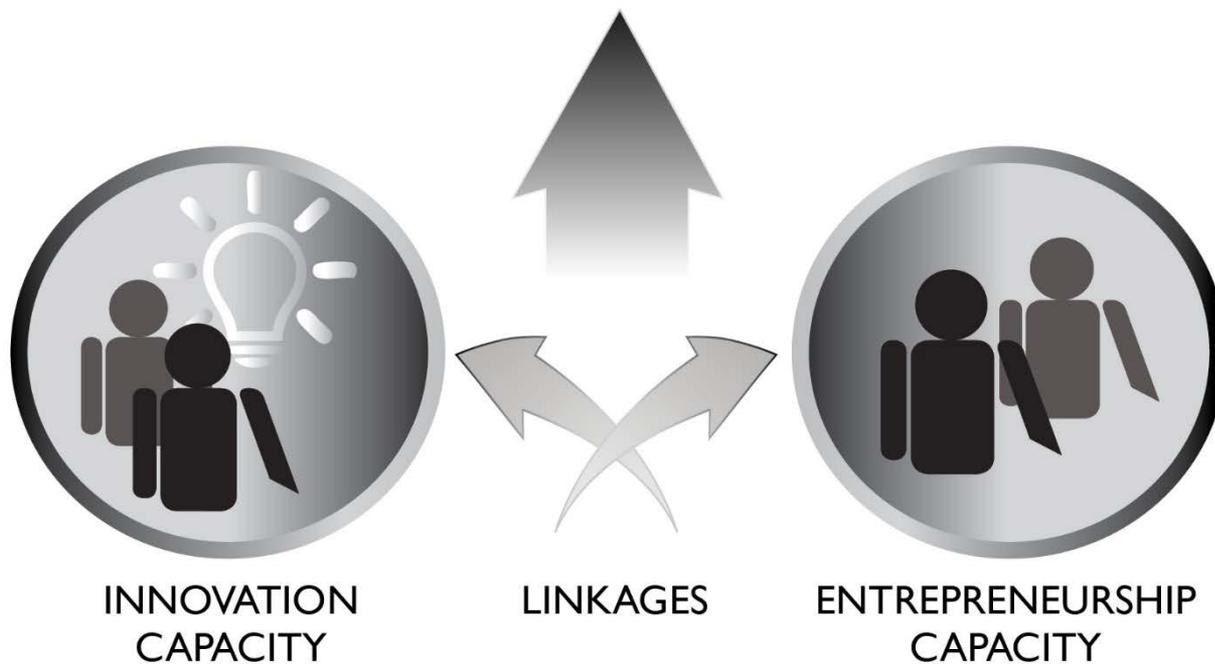
## Dream, believe, work hard and succeed!

“The energy, positive attitude and curiosity which had taken over the Finnish capital's Expo Centre was something I had never experienced before. Slush surely deserves its reputation as the biggest start-up and venture capital event in whole Eurasia; 750 international investors, 1400 start-ups, 5 stages on which 150 internationally recognised speakers, 120 companies on demo stands etc... During just the first day 120 investor meetings were carried out of which many led to concrete funding plans.”



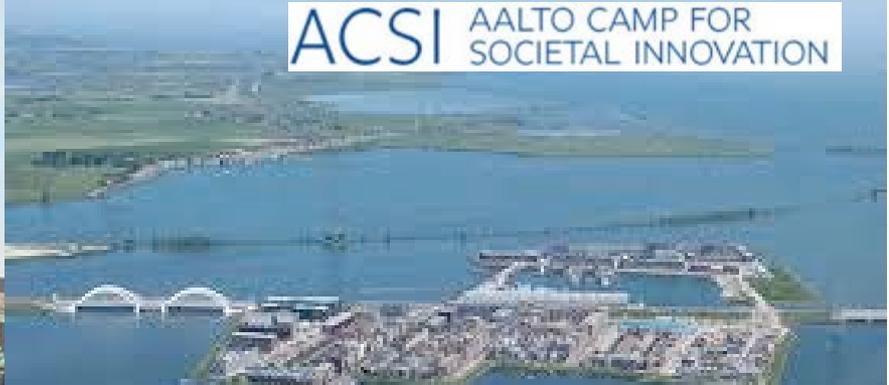
Miki Kuusi with his team starts a new company WOLT

## ECONOMIC GROWTH GLOBAL BUSINESS



**Results of the global benchmarking:**  
**# 1 Finland** **# 9 Finland**

We need new instruments such as the ACSI Innovation Camps: 400 participants in 2010-2014



### ACSI concept five perspectives:

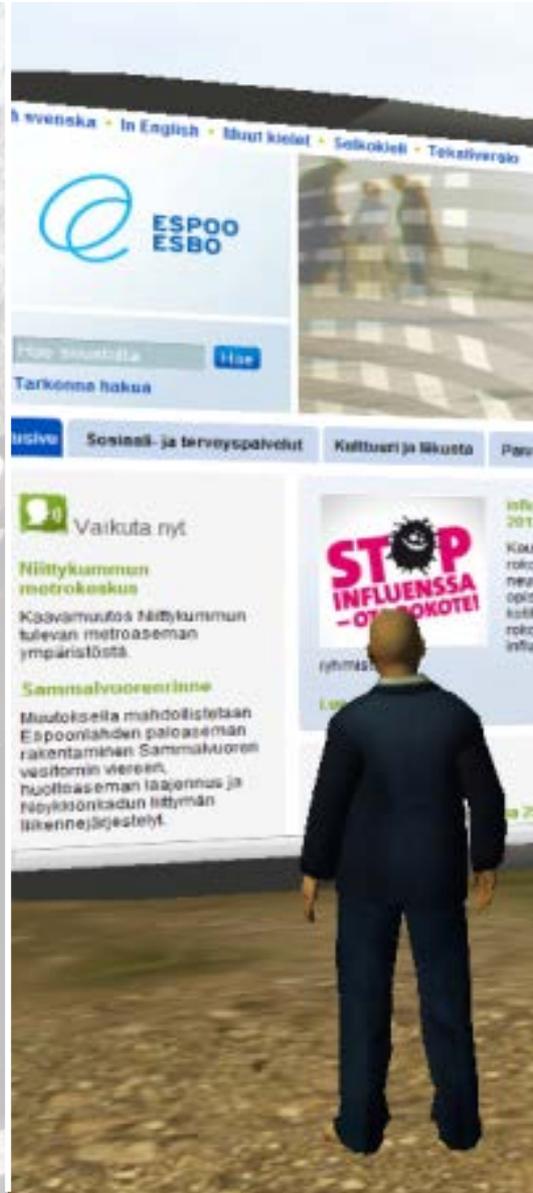
- 1. Innovation culture
- 2. New kinds of collaboration
- 3. Urban test-beds
- 4. Demonstrations in Real life & Virtual reality
- 5. ICT Cluster Revolution & Job creation



# EUE RIE 2014 Regional Information Modeling



High-level Research



Platforms & Virtuality



City and people

# EUE RIE 2014 Plans

## High-level Research

Innovative measuring  
equipment

Mobile mapping system

Personal mapping

Algorithms

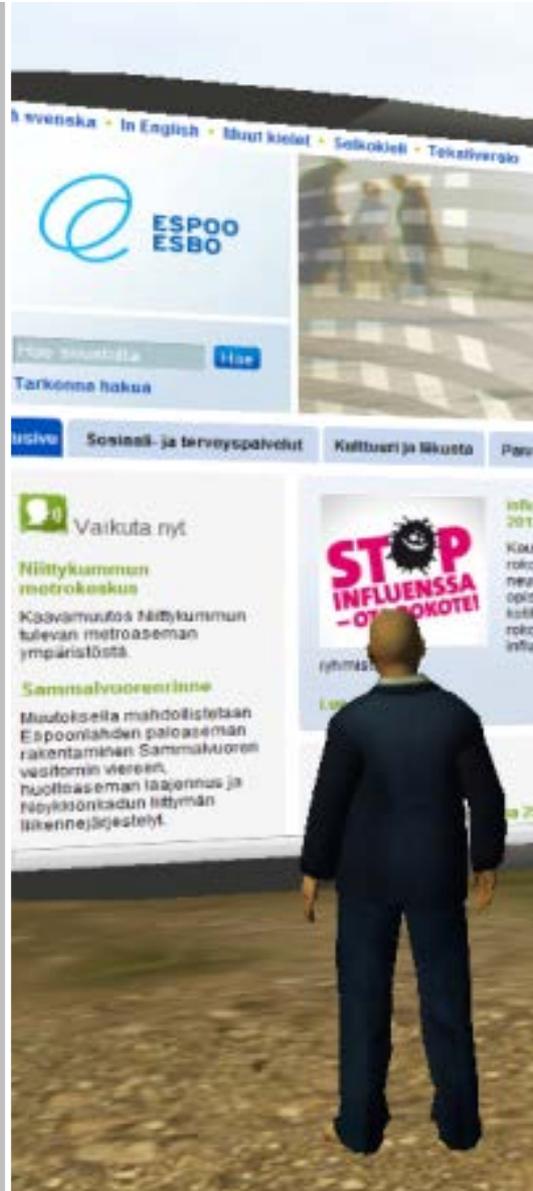
Formats

3D

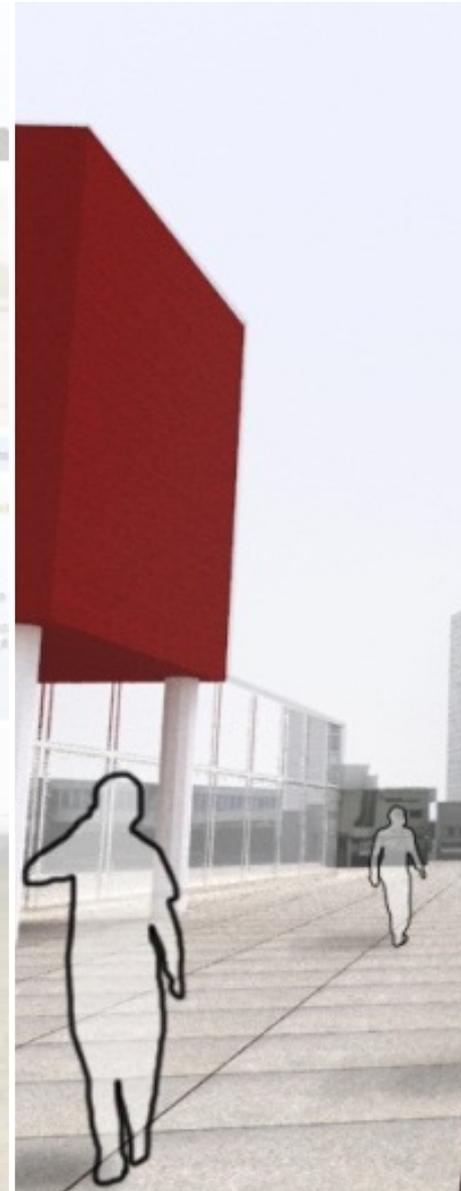
Location Based Services

Regional Information Model

Future possibilities



**Platforms & Virtuality**



**City and People**

# EUE RIE 2014 Plans

## High-level Research

Innovative measuring  
equipment

Mobile mapping system

Personal mapping

Algoritms

Formats

3D

Location Based Services

Regional Information Model

Future possibilities

## Platforms & Virtuality

CoR –tools 2,5D

Open Co-Creation  
platform:

Schools and universities etc

Meshmoon Open  
Innovation 2.0 platform

Meshmoon 3D City  
Model platform

IFC, BIM, Indoor models

Meshmoon tools  
"Architecture & Construction"  
"Education"

## City and people

Open accurate 3D-world –  
compare and produce  
plans - Espoo

Living Labs  
T3 + Valencia

Regional Information  
Model

Citizens and decisionmakers  
Demos, Apps, Future

Human behaviour &  
Knowledge  
management in  
Regional Information  
Model

<http://cor.europa.eu/en/events/Pages/eu2020-innovation-union.aspx>



### CoR Innovation Union Flagship Conference 27 Nov 2013 / Some Conclusions:

1. Innovation communities operate as ecosystems through systemic value networking in a world without borders. → **INNOVATION IS NOT ANY MORE A LINEAR PROCESS**
2. Innovation processes are strongly based on demand-driven user orientation and customers as crucial players in innovations. → **OPEN INNOVATION 2.0 MEANS PUBLIC&PRIVATE&PEOPLE PARTNERSHIPS**
3. Innovation strategies focus on catalysing open innovation and encouraging individuals and communities towards discovery and effective use digitalised services. → **CREATING FAVOURABLE CONDITIONS FOR CREATIVITY AND INNOVATION**
4. Innovation is often based on experimenting and implementing demonstration projects by partnerships, using the best international knowledge and creating new innovative concepts. → **EXPERIMENTING & RAPID PROTOTYPING**

# Summary

Key basic findings based on recent studies:

1. Use the existing knowledge: **80% of innovation value comes from the widespread adoption of Innovation** with 20% of value coming from the production of Innovation (OECD);
2. World without borders: Innovation is more and more based on multidisciplinary approach. We need to **balance technological, design and social innovation** in both the public and private sectors, all of which are influenced by far-reaching **digitisation** (Aalto University);

Committee of the Regions (CoR ) calls for

1. **strong regional measures to turn research results into innovation** that is locally tailored and can be applied throughout Europe;
2. building **regional innovation capacity** on the basis of **smart specialisation and European partnerships**;
3. **pioneering regions** to form European consortiums integrating different capabilities **to create ground-breaking societal innovations for Europe-wide use**. Through its various actors, each region can become a pioneer focusing on its own needs and strengths;

**To what extend can we apply these in strengthening the EU & HK collaboration?**