



Aalto University

Experiences and Concepts for Innovation Driven Society

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Advisor to the Aalto Presidents

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VI. Mezinárodní ekonomické fórum Zlaté koruny

Pod záštitou předsedy vlády ČR Jana Fischera

na téma

JSME NA ROZCESTÍ

Probudíme se, dokud je čas?



Markku Markkula
Aalto University Societal Impact
Advisor to the Aalto Presidents

Aalto University - Where *Science* and *Art* meet *Technology* and *Business*

Direction set by the Aalto University Foundation Board:

- Focus on **selected spear heads** in research on a world-class level
- Focus on **important long-term issues and areas of research**
- **Integrate** research, teaching and societal interaction across all Aalto's disciplines to create synergies
- Aim for **deep and sustainable social, cultural and economic impact**

The Board instructs iterative planning process as follows: **Vision 2020 → Concepts and processes → Aalto culture → Organizational structures**

Extensive Research Assessment Evaluation was carried out in 2009 (60 international professors): Understanding of future potential → Defining focus areas → New investments

Aalto University

Aalto University is a foundation-based university built through the merger of three top universities: **Helsinki University of Technology (TKK)**, **Helsinki School of Economics (HSE)** and **University of Art and Design Helsinki (TaiK)**. The mission of Aalto defines the unique target level of the strategic role of the University as follows: *“Aalto University strives to change the world through top-quality interdisciplinary research, pioneering education, surpassing traditional boundaries, and renewal. Aalto University educates responsible, broadminded experts with a comprehensive understanding of complex subjects to act as society’s visionaries.”*

Aalto Societal Impact with a Strategic Role

Influence National Agenda

Global Forerunner

Real life & Real Case -Approach

Finland: National Creativity & Innovation Strategies

1. GLOBAL FORERUNNER

“The Strategy will predominantly focus on reforms necessary for the creation and implementation of a broad-based innovation policy within a global operating environment.” ... “Innovation communities and centres are increasingly international.”... “We must find a way to create globally networked innovation ecosystems.”... “In the future, the innovative environment will even more clearly belong to the global network of innovation hubs and centres.” → **Aalto will by 2020 develop its strengths as a globally unique hub of excellence in integrating and creating synergy between research, education and innovation.**

2. REAL LIFE

“The systemic approach is a key concept in implementing a broad-based innovation policy. It refers, comprehensively, to the interconnections and mutual dependencies of various phenomena.” ... “The success of innovative communities is based on sharing competence and knowledge, and the ability to combine various perspectives and approaches.” → **The concept of Aalto Living Lab based on Real Case -approach and with selected strategic partnerships will by 2020 create Aalto the pioneering world leader role in teaching and learning in open-innovation and shared knowledge creation processes.**

Finland = Innovation

2 Innovation Hot Spot in the world

Harvard Business Review March 2009;

3 Global Innovation in the world

The Economist Intelligence Unit, April 2009;

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

1 Availability of Scientists and Engineers in the world

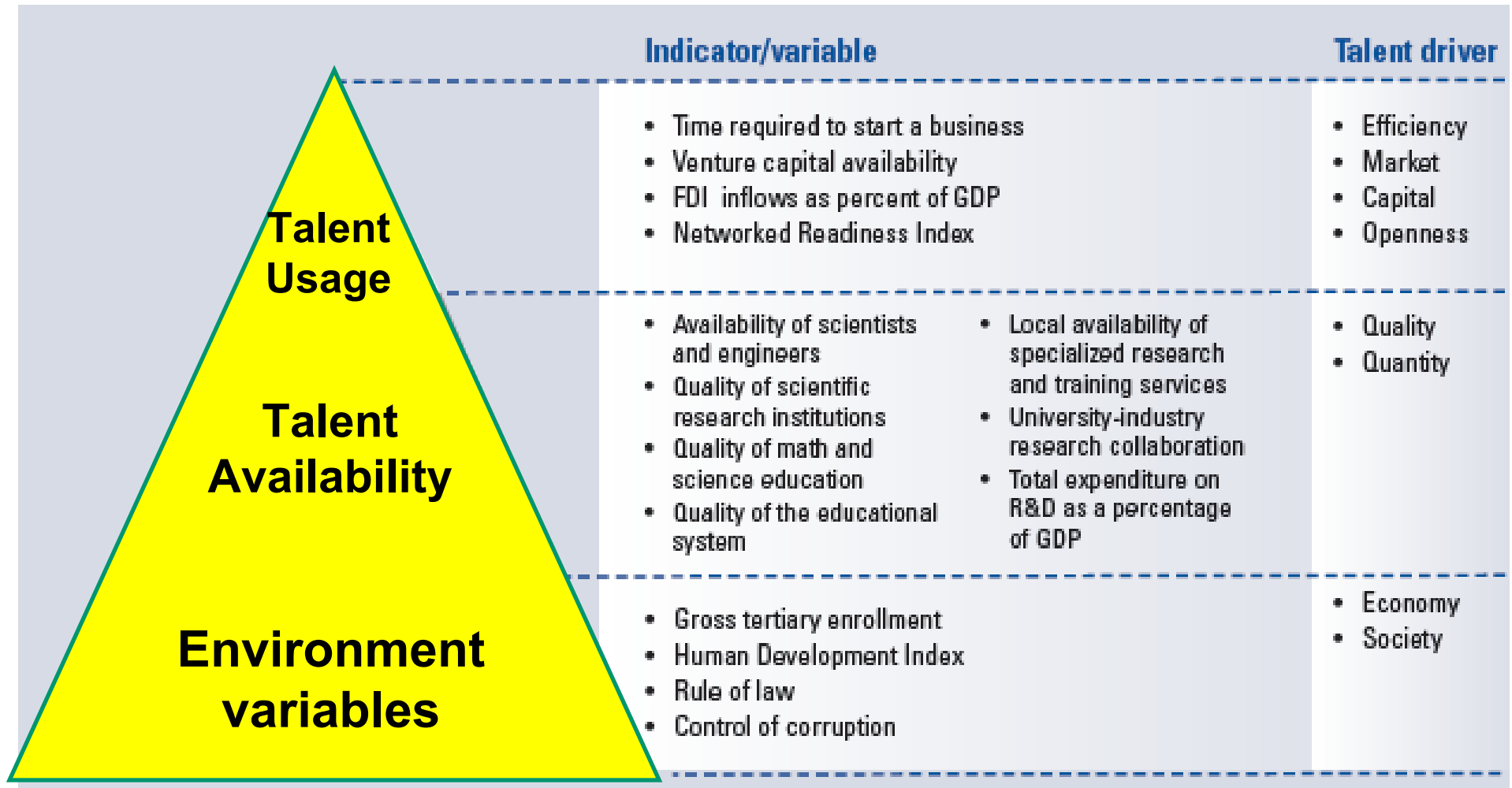
World Economic Forum, September 2009;

1 Prosperity in the world

Legacy Prosperity Index, October 2009;



The Global Talent Pyramid Variables



National innovation strategies in seven OECD countries

In order to identify the leading policy innovative countries, four criteria for broad-based innovation formulation have been developed:

1. The country should perform well according to innovation indicator systems.
2. The country should recently have introduced (or plan to introduce) a national innovation strategy.
3. The innovation strategy is implemented broadly across several ministries and at high political level.
4. The national innovation strategy should be broad-based and include dimensions from a new nature of innovation.

www.newnatureofinnovation.org

Networked Readiness Index / INSEAD & World Economic Forum

Component	Finland ranking	Czech ranking
Venture Capital Availability	4	68
State of the cluster development	6	35
Availability of latest technologies	3	49
Availability of scientists and engineers	1	11
Tertiary education enrollment	2	39
Quality of the educational system	1	26
Internet access in schools	1	19
Local availability of research and training services	4	23
University-industry research collaboration	4	26

Mental Change from 3 C's to 3 I's

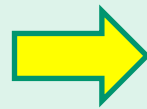
Leadership is facing new challenges:

- Continuous change and increasing pace of change
- Contradictory values and goals
- Move from the world of "either or" to "both and"
- Increasing complexity

Leadership change:

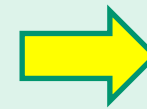
In the past 3 C's:

- Command
- Control
- Correct



Now 3 I's:

- Inspire yourself / ourselves
- Inspire others
- innovate



Future:

- Radical changes in working culture

Based on: Dr. Pentti Sydänmaanlakka, Lecture in Aalto University Dipoli, 16 September 2008

European Creativity and Innovation Manifesto 2009



Creativity
and Innovation
European Year 2009

1. Nurture creativity in a lifelong learning process where theory and practice go hand in hand.
2. Make schools and universities places where students and teachers engage in creative thinking and learning by doing.
3. **Transform workplaces into learning sites.**
4. Promote a strong, independent and diverse cultural sector that can sustain intercultural dialogue.
5. Promote scientific research to understand the world, improve people's lives and stimulate innovation.
6. **Promote design processes, thinking and tools, understanding the needs, emotions, aspirations and abilities of users.**
7. Support business innovation that contributes to prosperity and sustainability.

www.create2009.europa.eu/fileadmin/Content/Downloads/PDF/Manifesto/manifesto.en.pdf

Creating an Innovative Europe

Recognizing the magnitude of European problems:

1. Productivity falling behind.
2. Failing to capitalize on the application of ICT.
3. Losing out as large firms globalize their R&D.
4. Locked into unmodernised traditional sectors and underinvesting in services R&D.

Our proposal is to create in Europe a market that stimulates and encourages innovation and in so doing provides firms with the incentive to raise their R&D level and to apply successfully the full range of new technologies.

1. We need responsible partnering between universities and industry for effective knowledge transfer.
2. It is vital also to increase the productivity of R&D in Europe.
3. The Lisbon challenge is not one of intent, it is one of implementation.

http://ec.europa.eu/invest-in-research/pdf/2006_aho_group_report_cs.pdf

Transformation towards Innovation of Higher Education – from Theory to Practice

Knowledge society means investments towards innovativeness:

- INNOVATIONS lead to higher added value
- INNOVATIONS increase productivity
- INNOVATIONS open up new business opportunities

In higher education the real challenge is to integrate theory to practice:

1. Transformation is the process of a fundamental change in an organization leading to a dramatic improvement in performance in the priority areas.
2. The fundamental change may involve strategic redirection, but always includes structural change and a dramatic alteration in the behavior of individuals.
3. Focus of actions needs to be on defining the necessary capabilities and investments on competence development.

Staying Ahead – Learning to Change Your Mindset!

1. Finland has long been recognized as the country of high tech and R&D, and ranked among the top most competitive countries.
2. **Several studies, however, show also for Finland the evidence of necessity to move ahead and change.** Getting the most out of the new scientific and technological developments calls for a much wider spectrum of knowhow and much wider cooperation between experts across different fields. Companies and organizations need to think ‘outside the box’ much more extensively than they often do today.
3. **At the top of the critical success factors for innovations is the right mix of market intelligence, business concepts, systemic R&D, and funding – together with the right technology.**
4. This means deeper understanding of globalization processes based on the theories and practices of value networking dynamism.

Towards User-Centricity & User-Driven Innovation

For the first time, we can by revolutionary new digital measurement tools precisely map the behavior of large numbers of people as they go about their daily lives.

These distributed sensor networks have given us a new, powerful way to understand and manage human groups, corporations, and entire societies.

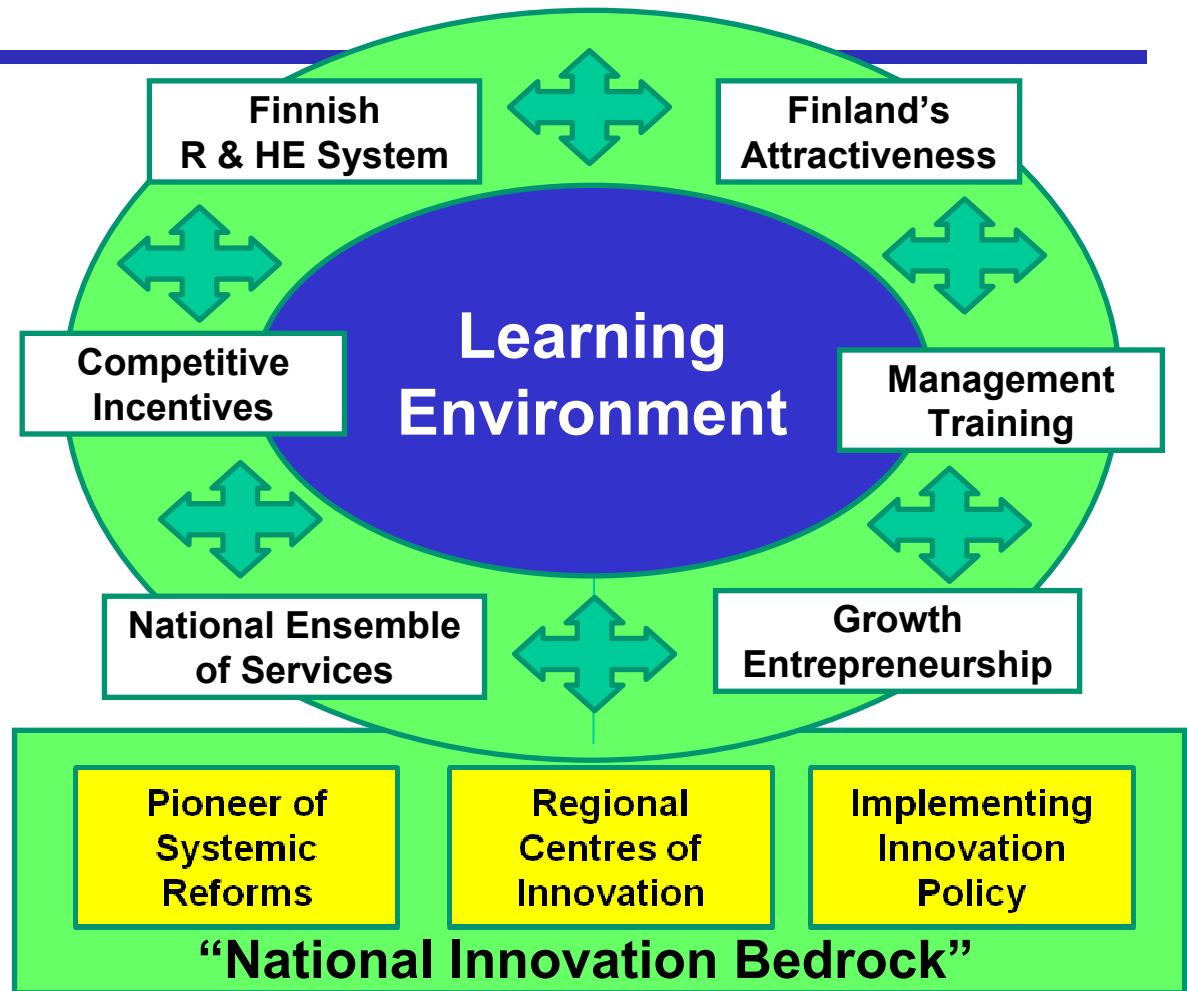
As these new abilities become refined by the use of more sophisticated statistical models and sensor capabilities, we could well see the creation of a quantitative, predictive science of human organizations and human society.

Renewed Finnish National Innovation Strategy

Strategic goals set for Finland are a) Innovation-based development of productivity and b) Pioneering in innovation activity. To achieve this the following **4 basic choices** are made:

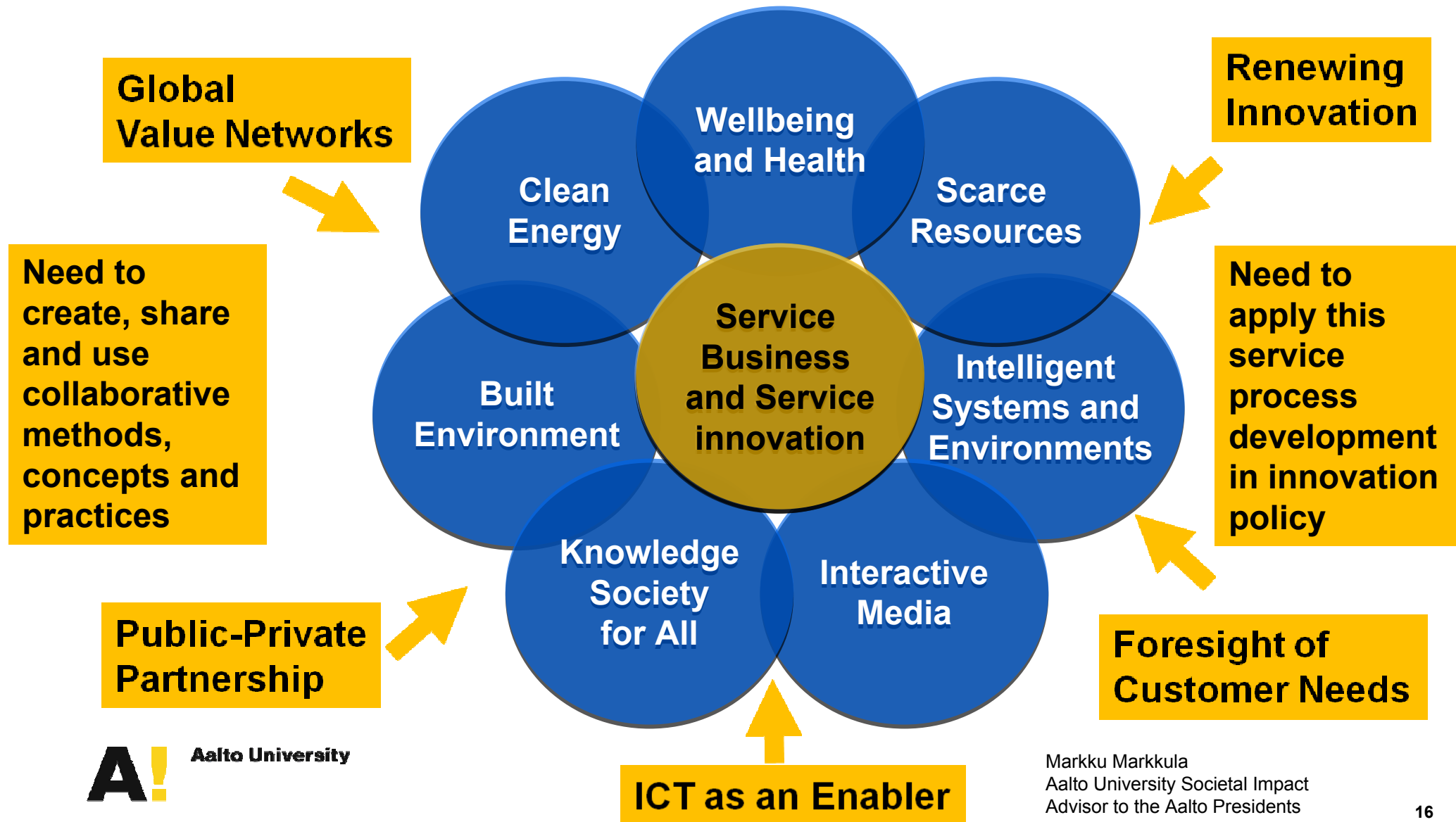
1. Innovation activity in a world without borders
2. Demand and user orientation
3. Innovative individuals and communities
4. Systemic approach

The picture is interlinking the **10 key sets of measures** defined.

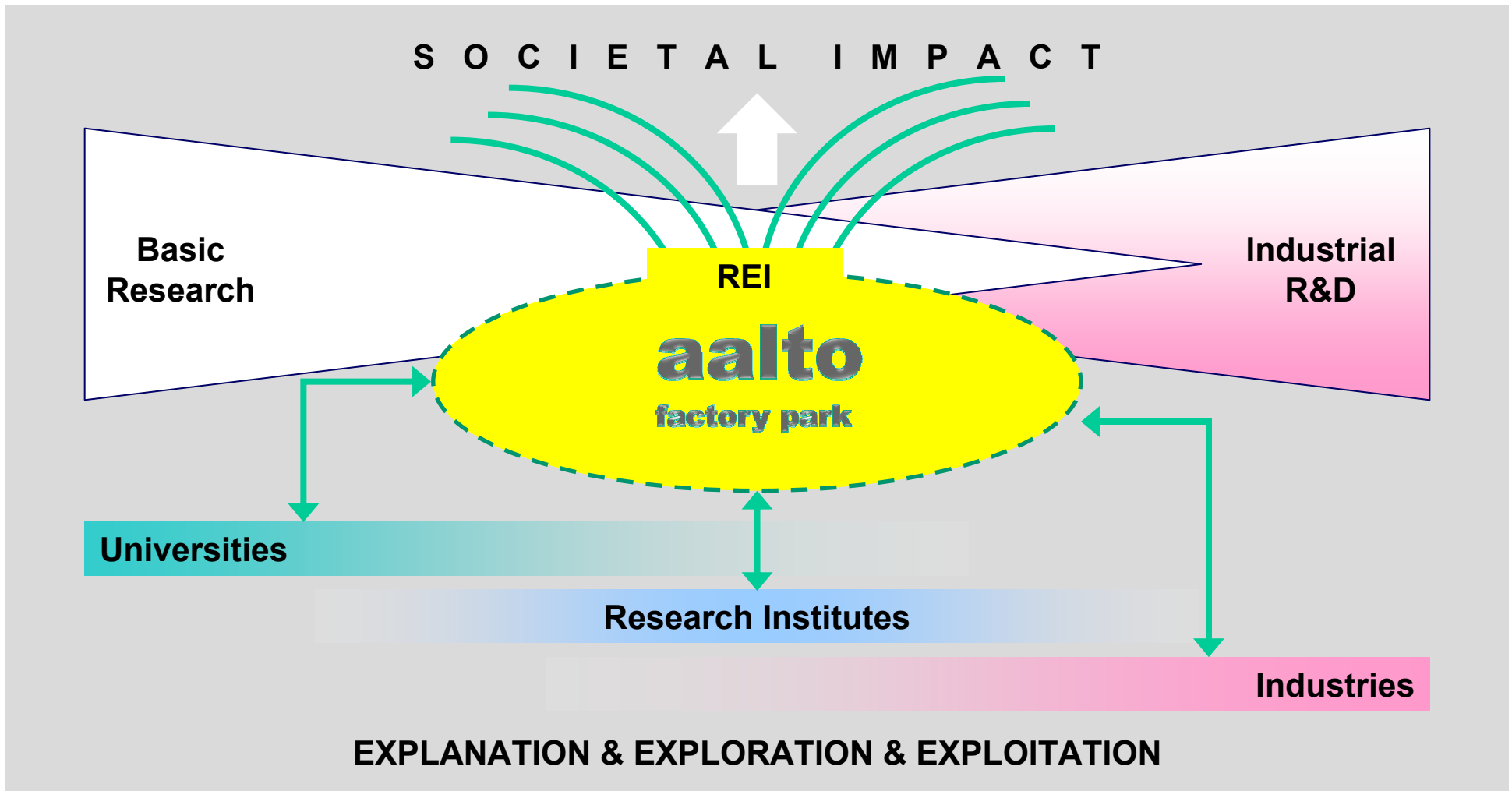


Creating Synergy within National Focus Areas

Based on www.tekes.fi



New Developments: Factories & Living Labs in the Aalto RDI System – both Excellence and Relevance



REI = Synergy between research, education and innovation
= Knowledge Triangle

Creating the Aalto Concept for Knowledge Triangle Based Learning

One of the major aims of the Aalto Factory Park Concept is to create the necessary infrastructure and working culture to encourage collaboration between

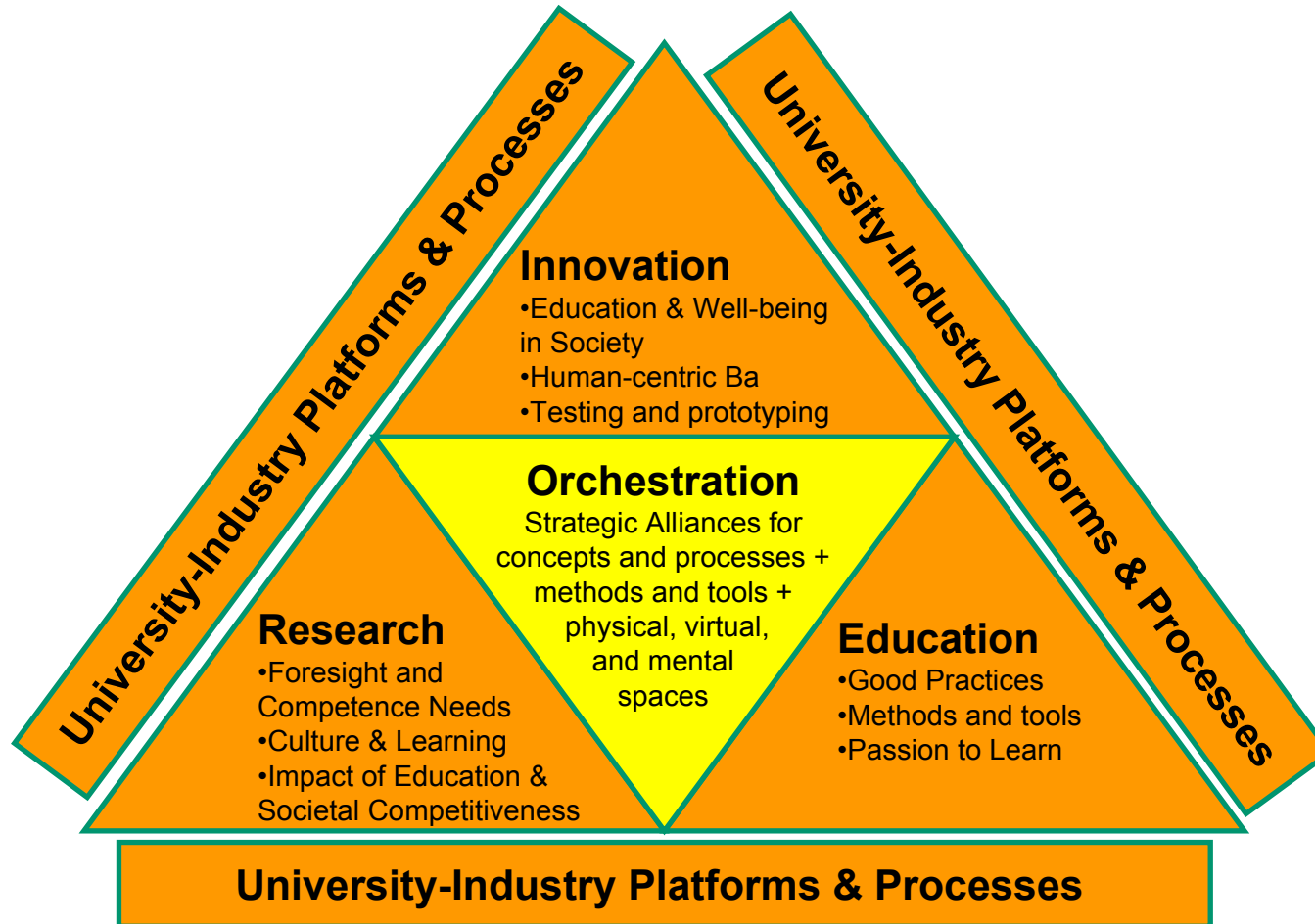
- a) research and education carried out by the university's departments,
- b) the Aalto Factories,
- c) other Aalto units, and
- d) Aalto stakeholders.

Successful implementation of the Knowledge Triangle needs to be based on conceptualized processes. Target is mass customization & personalization and at the same time integrate different perspectives throughout the process.

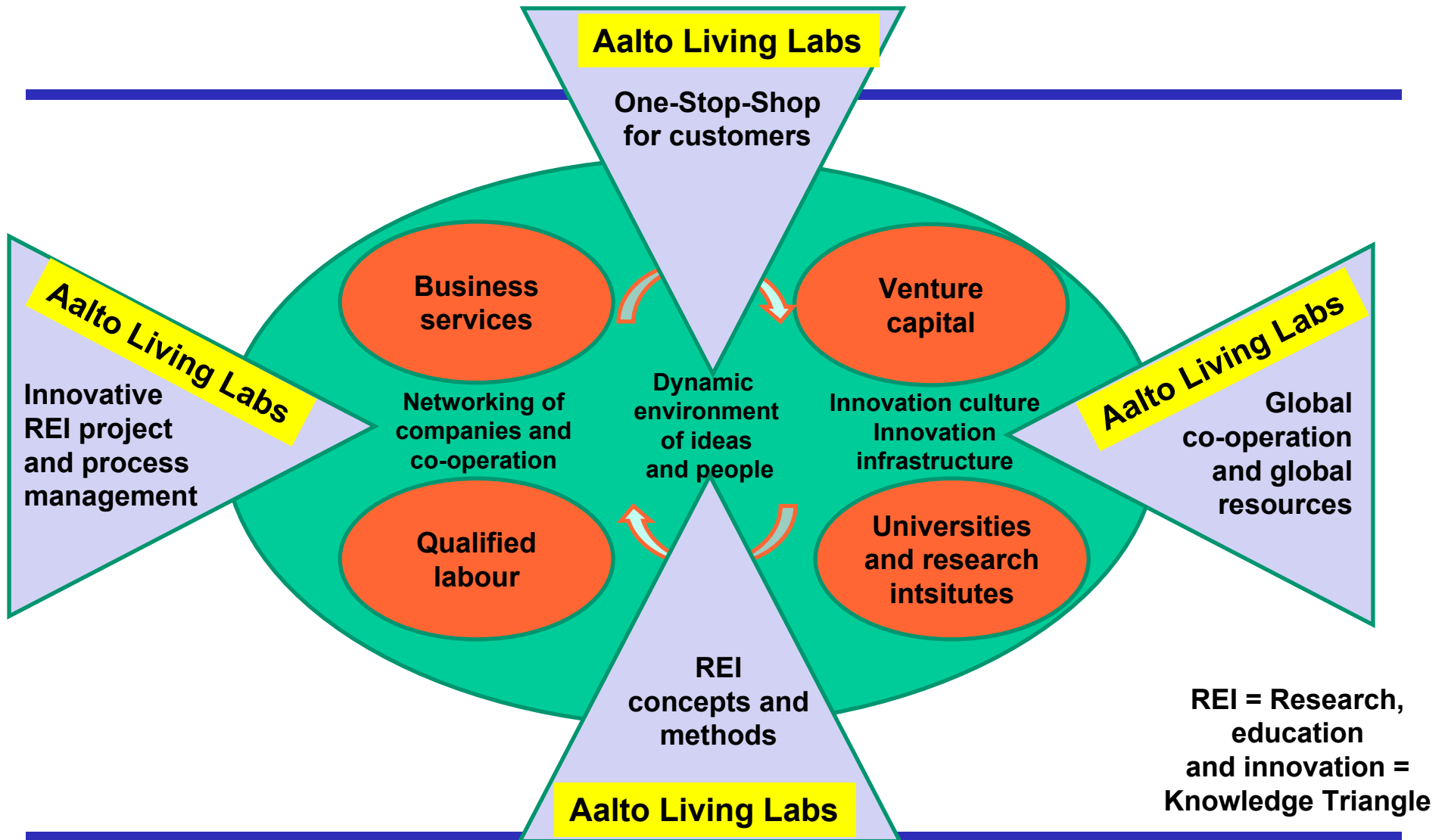
Different learners integrated in the same learning process and different learner groups have different roles and responsibilities:

- a) Working life experts (continuing education students)
- b) Young graduates doing their masters (basic students)
- c) Researchers (post-graduate students)

Knowledge Triangle and Collaborative Platforms



Aalto Living Labs as a University - Industry Innovation Ecosystem



Summary – Critical Success Factors for Change

The criteria to successful function of economy and society have changed during the past decennia. Competitiveness of nations, companies and individuals is ever more based on societal, technological and organizational innovations.

How to make the desired change to happen. **The focus in renewing the national innovation systems should focus on the following critical success factors:**

- **Innovation activity in a world without borders**
- **Demand and user orientation**
- **Innovative individuals and communities**
- **Systemic approach**

Strong political commitment for creating new concepts in University-Industry collaboration is needed.

Summary – Network Leadership & ICT as an Enabler: Creating Innovative Environments

1. **Orchestration and network management** with ICT as an enabler are an essential part of the paradigm shift.
2. The **core processes of innovative environments** cannot be managed without active participation and the all-round delegation of responsibilities. This refers to a situation where several actors in concert focus on the development, and affect the other actors in many ways.
3. **Shared leadership** invariably requires new e-mechanisms and the capability of combining diverse competences.
4. In a **dynamic operating environment**, leadership requires the capability to lead beyond the borders of the organizations and communities from which the leader's authority is derived.
5. One has to be able, proactively and in a self-guided way, to create something new **in the operational environment**, which is formed of **complex and continuously changing networks**.

Aalto Camp for Societal Innovation (ACSI)

Helsinki Region will especially focus on societal innovations. New-generation innovation activities are complex and global by nature.

ACSI is a meta-level innovation platform that networks researcher and user communities. It builds up a global, self-renewing collaboration and integrates global innovation activities for learning, research and rapid implementation.

ACSI will create an innovative operating mode that incorporates the annual Aalto Camps into universities' research, education and innovation activities throughout the year. The international ACSI community produces innovative solutions meeting the needs of real life cases of society and enterprises.

The ACSI will bring forth models and channels for societal decision making and implementation for swiftly integrating innovations into practice.

MARKKU MARKKULA

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 - Mr. Markkula is a former member of the Finnish Parliament (1995-2003) with influential positions in international committees promoting science, technology and innovation, business change processes, knowledge management and lifelong learning. As an MP his international role included the Presidency of EPTA Council, European Parliamentary Technology Assessment Network. He is Chairman of the Board of the Finnish Information Society Development Centre TIEKE.
 - He is a member of the EU Committee of the Regions, CoR, for the term 2010-2014. Within CoR he is member of Commission for Education, Youth, Culture and Research EDUC, and Commission for Economic and Social Policy ECOS, www.cor.europa.eu. He is the CoR rapporteur for “European Digital Agenda”.
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