



Markku Markkula

From Quality to e-Quality

- **Director of Lifelong Learning Institute Dipoli, Helsinki University of Technology**
- **Member of Finnish Parliament 1995-2003**
 - **Committee for the Future**
 - **Committee for Science, Education and Culture**
- **President of EPTA, European Parliamentary Technology Assessment Network 2001**
- **Chairman of the Board of TIEKE, the Finnish Information Society Development Centre**
- **Chairman of the Board of TEK, the Finnish Association of Graduate Engineers**

Orientation: Knowledge-Based Society - What is essential?

When our target is to increase the quality of our work and return of our investments, we have to understand the paradigm shift:

- Company (or an organization) is not anymore a fixed system as it used to be.
- When focus is on value, the focus is on new knowledge-focused processes (which are on a constant change):
 1. Processes are collaborative with cross-boundary interaction (shared knowledge reality).
 2. Processes are based on strong mental networks with shared purpose (strategic partnerships).
 3. More and more the networks are operating virtually with shared knowledge management methods.
- This all means especially dramatic changes in work culture and performance measures.

Paradigms 2001-2007

Target on National Level: Improve the Quality of Life
Special focus on Success Factors and e-Economy
with Internet and mobility as a driving forces

Company perspective:

e-Business
Special focus on
Strategical Alliances and
Human Capital

Individual perspective:

Experience Economy
Special focus on
Passion to Learn and
Values of Life

University perspective:

Network Economy
Special focus on Knowledge Creation and
Effective Knowledge Management

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**Paradigms
2001-2007**

Company perspective & individual perspective

Small innovations can make a difference:

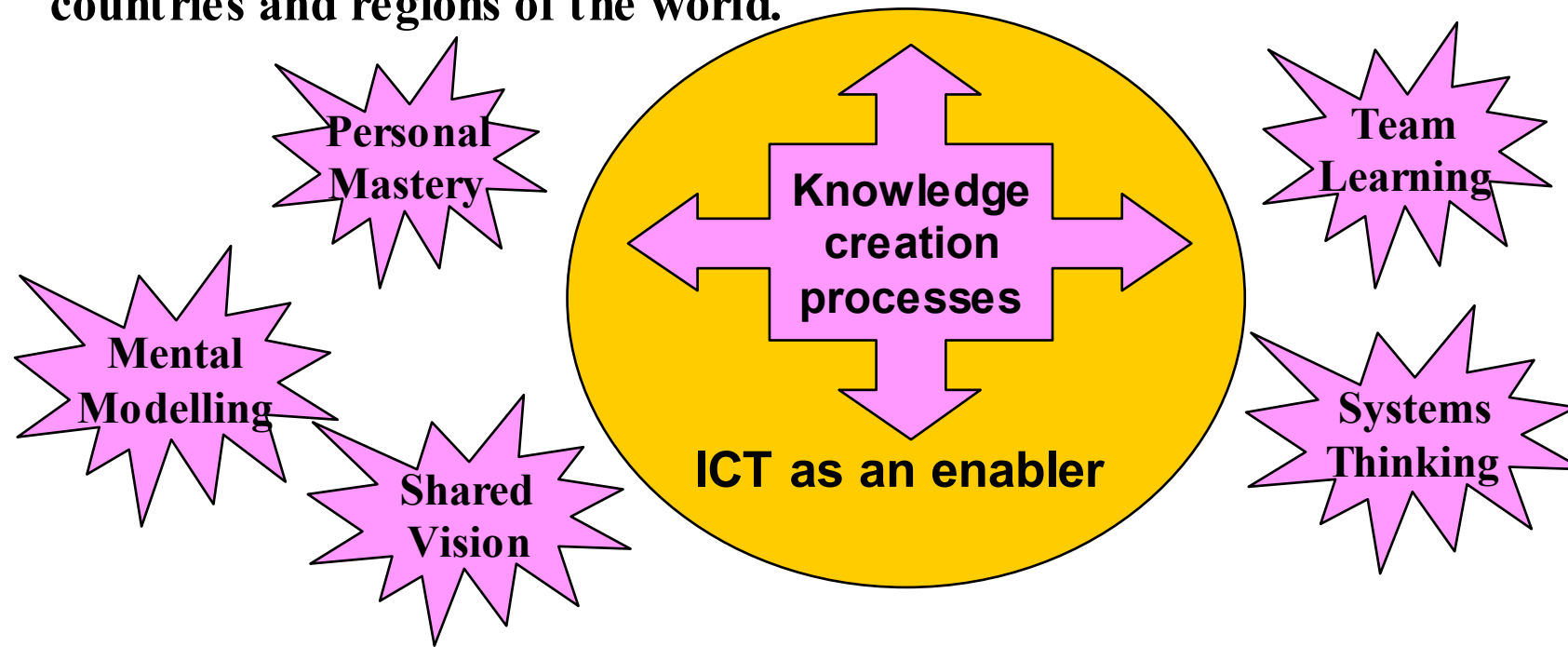
Fortune no. 10 / June 2, 2003:

Silicon Valley isn't dead; it's just getting recharged: "The Next Big Thing is the elimination of cords and cables, at least for portable devices. That will unleash a fury of innovation and expansion that will make even the most skeptical realize that Silicon Valley's batteries are far from drained."

The IM (instant messaging) invasion: "IM helps workers collaborate with partners, clients, vendors, suppliers..." "A new Microsoft product allows IM, e-mail, phone calls, and web conferencing at once, on the same platform..."

National Strategy to Become a True Knowledge-based Economy: Focus on Learning Communities

There are a number of key analytical lessons that can be learned from the Finnish experience. These lessons can be sources of reflection and inspiration for other countries and regions of the world.



Learning Organization
-concept by Peter Senge & Global SoL

Increase investments in research and development. Create new learning environments for working together. Create models and tools for open source development of innovative teaching and learning methods and materials.

A Finnish Strategy for Lifelong Learning 1997

Focus on structural reforms:

1. Strengthening learning foundations

2. A broad range of learning opportunities

3. Accreditation of learning achievements

4. Building learning paths - information and support

5. Bringing teachers' and trainers' skills up-to-date

6. Towards a comprehensive policy for the advancement of learning



Committee appointed by the Government, 1997

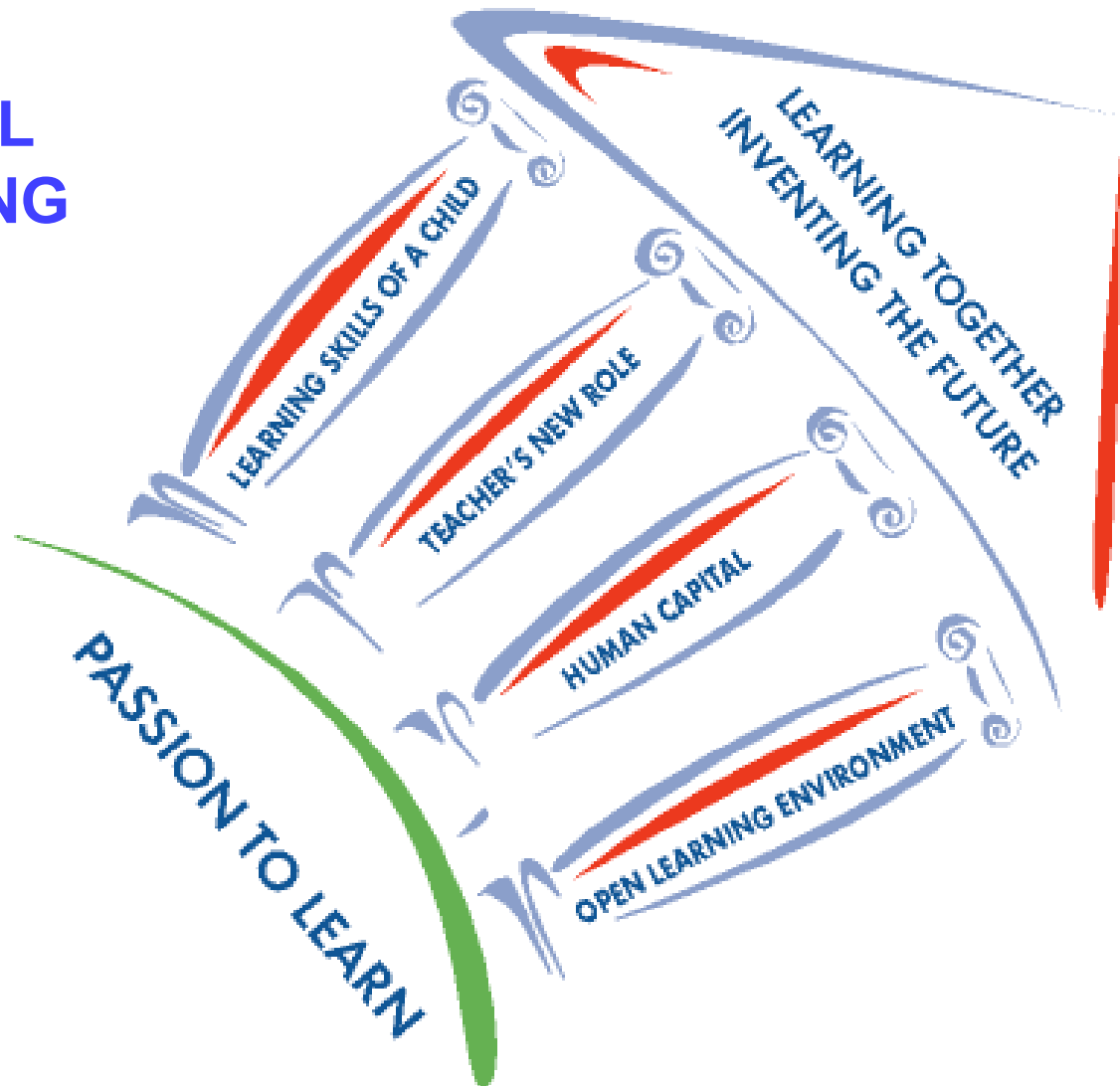
Towards Quality = Defining the Strategy of Change

VISION & NATIONAL LIFELONG LEARNING STRATEGY

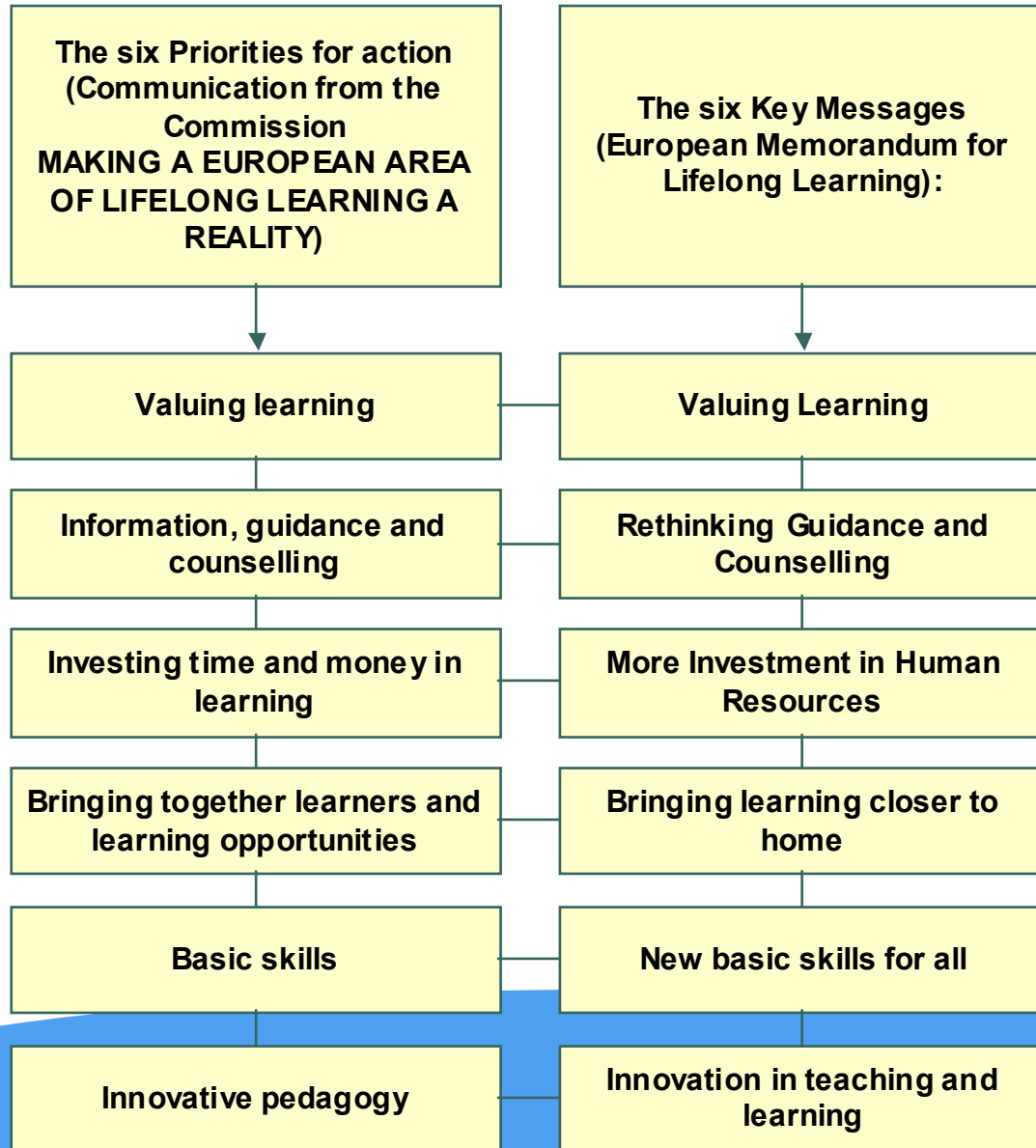
PASSION TO LEARN - BENCHMARKING GOOD LIFELONG LEARNING PRACTICE

Book about the society of
knowledge, understanding and
wisdom

by Markku Markkula and
Riitta Suurla, 1998



Lifelong Learning: How to Take a Quantum Leap



**Focus on ICT
in Supporting and Enhancing Lifelong
Learning (innovative applications for
enabling, empowering and supporting
learning)**

Framework for the Future of eLearning – Benchmarking with Business Framework: From Planning to Architecting the Future and Innovation Strategy

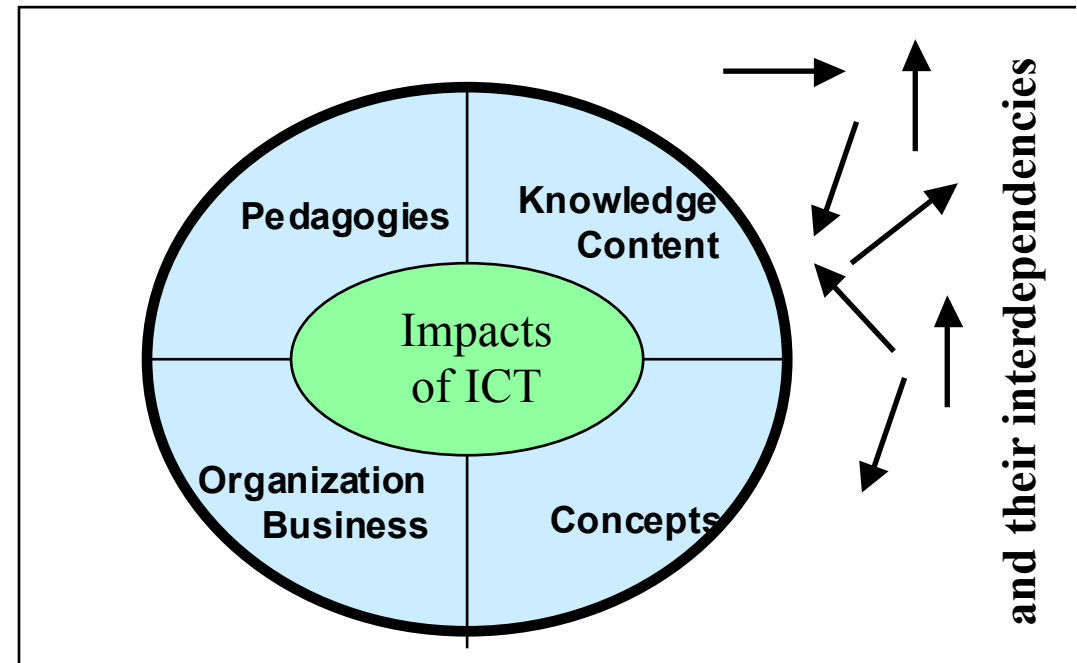
1. Knowledge Performance Economics
2. Knowledge Structures
3. Knowledge Workers
4. Knowledge Processes
5. Knowledge-Processing Technology

Ten dimensions of innovation strategy

1. Focus on Collaborative Process
2. Focus on Performance Measures
3. Focus on Education and Training
4. Focus on Distributed Networks
5. Focus on Competitive Intelligence
6. Focus on New Products and Services
7. Focus on Strategic Alliances
8. Focus on Market/Customer Interaction
9. Focus on Leadership/Leverage
10. Focus on Computer/Communication Technology

Based on Debra M. Amidon: The Innovation Superhighway, (2003)

The eLearning developers have to create their own knowledge management expertise on:



Educational Quality:

Total Quality Strategy in 1990's

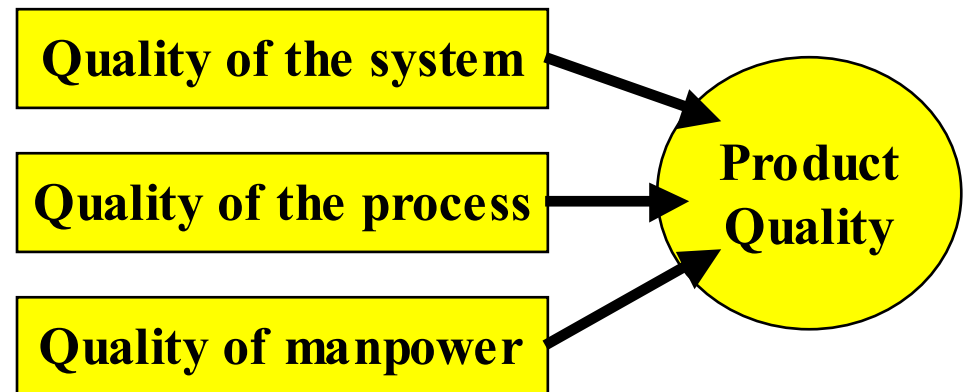
TQM has the following characteristics:

- **Quality is many-dimensional.**
- **Quality is relative.**
- **Perception of quality changes constantly.**
- **Quality is based on values.**
- **Quality contains emotional and moral undertones.**

Dr. Kauko Hämäläinen, 1994

If universities want to cooperate with industries successfully they themselves have to become learning organizations implementing the TQ strategy within their system.

Prof. Peter v. Mitchke-Collande, President of EUCEN 1994



Evaluation Is Obligatory – 3 Perspectives

CENTRAL CONCEPTS RELATING TO EDUCATIONAL OUTCOMES

1. Education is *efficient* when the functioning, flexibility and timing of the education system, educational administration and teaching arrangements are as appropriate as possible and the quality of teaching is high.
2. Education is *effective* when it succeeds in preparing people, both qualitatively and quantitatively, promoting the mental growth of individuals and the development of society, culture and working life.
3. Education is *economical* when the resources of education have been allocated in an optimal way with respect to the educational objectives, and the amount of resources is in proportion with the number of educational services provided and appropriate with regard to the structure and organisation of the service provision.

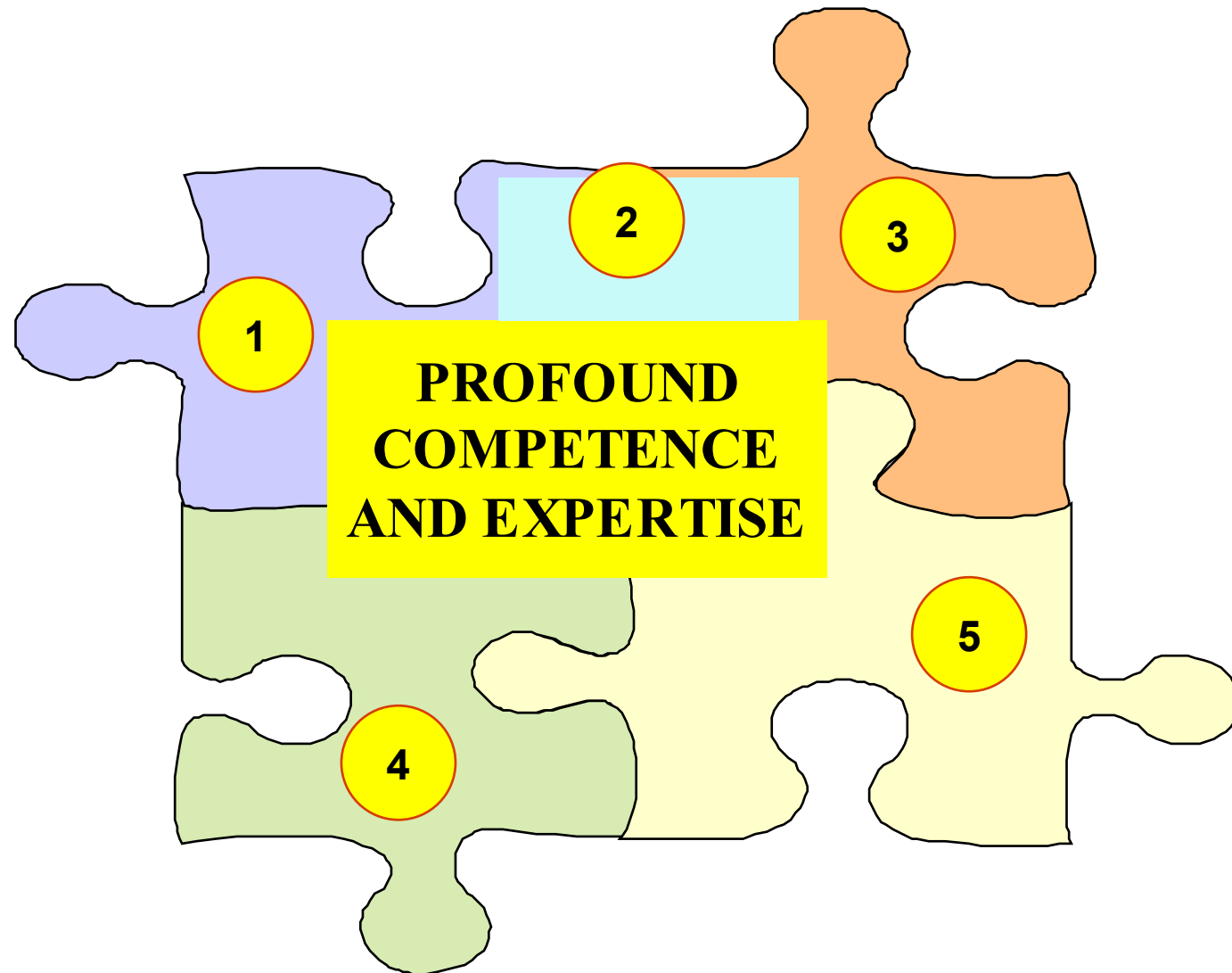
Major Changes since 1998:

Quality – International Evaluation of HUT

- "It is noted that Finland has an effective system for quality assurance in higher education, steered and coordinated by the Finnish Higher Education Evaluation Council. It is also noted that Helsinki University of Technology (HUT) is extremely active in quality assurance procedures of all types..."
- "Much has changed in the HUT since 1998. There are changes concerning facts, from both the quantitative and the qualitative point of view, but there are also changes concerning attitudes."
- "A significant increase in the number of Centres of Excellence since 1998 is noted... Centers of Excellence in Research, in Teaching, in Adult Education, in Artistic Activities..."
- "Another development which accounts at the national level has to do with the establishment of a Finnish network of universities developing e-learning..." The development unit of Finnish Virtual University is located at HUT.

Evaluation by EUA, 2003

Towards Excellence in Teaching: Self-Evaluation Handbook

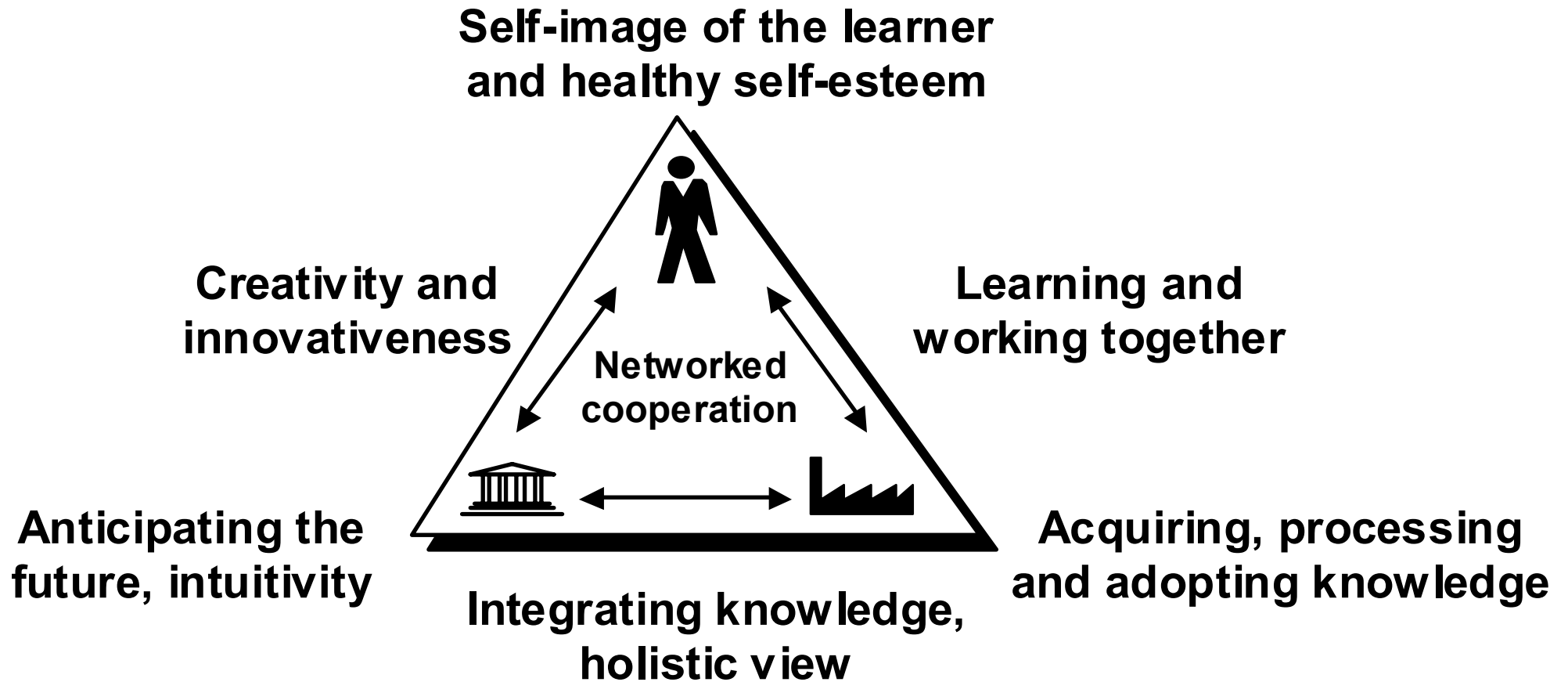


Self-Evaluation Handbook

PROFOUND COMPETENCE AND EXPERTISE

- 1** Interactive skills, cooperative skills, language skills, information and communication technology skills
- 2** Cultural knowledge, internationalism
- 3** Creativity, flexibility
- 4** Familiarity with different learning methods and ability to improve one's learning skills, ability to evaluate one's own learning skills, ability to critically evaluate information and its applicability
- 5** Ability to acquire process and summarize information, familiarity with research methods, ability to identify research problems and issues related to one's own field and society, ability to work as an expert in one's own field in an interdisciplinary environment, insight into research and professional ethics

Competences Needed for Learning to Learn



More Detailed: Roles in Effective Professional Development



Systematic Implementation of the Triangle Model

The relationship between the individual, the employer and the educational institutions in continuing professional development

1. The employee as an individual needs and uses:

1. Analysis of the individual's skills and knowledge (personal characteristics, education, training, experience and definition of own development goals;
2. Definition of the individual's job tasks as part of the organization;
3. Drawing up, endorsement and implementation of individual development plan

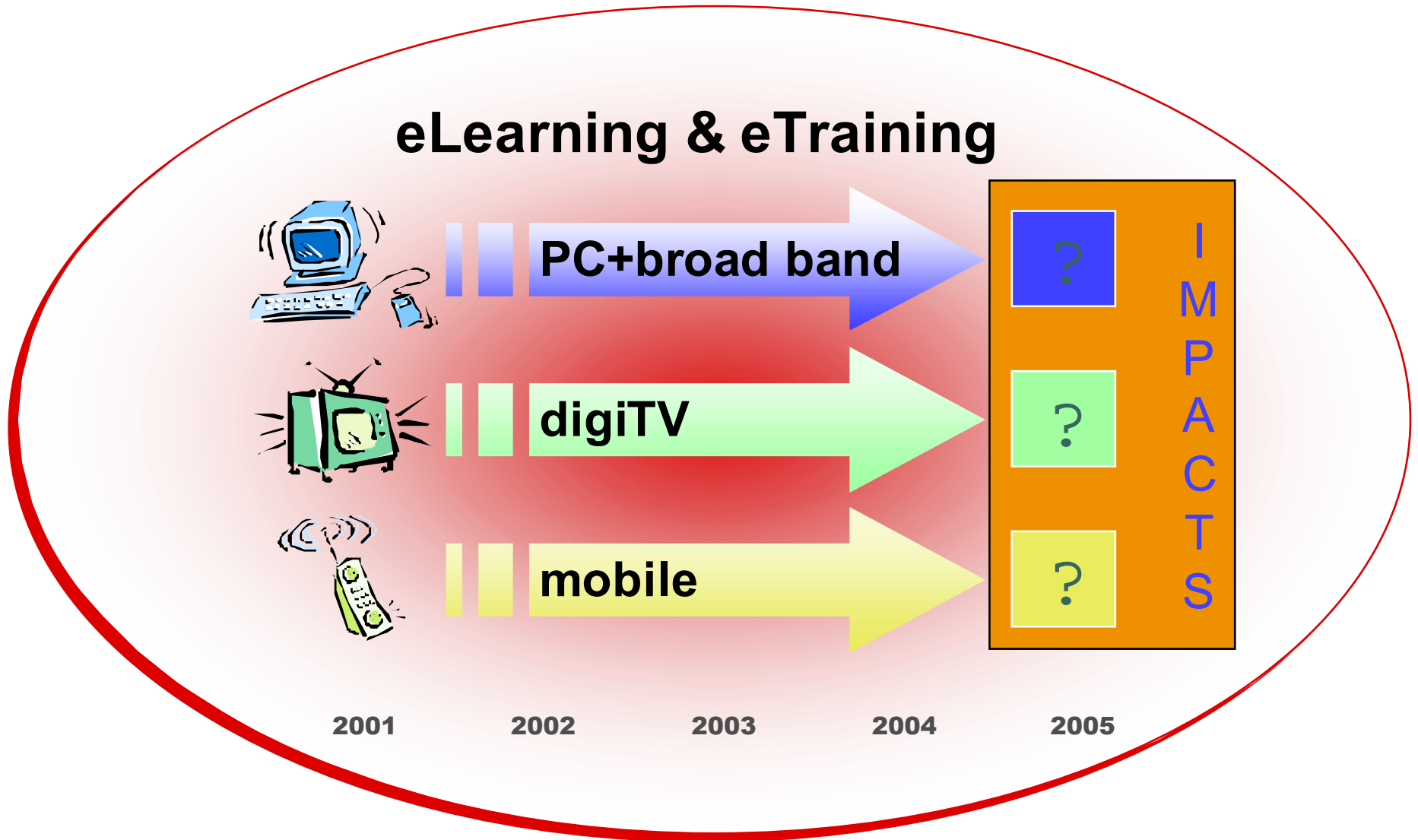
2. The employer as a company needs and uses:

1. Definition of the company's strategic goals and staff development policy;
2. Definition and development of the company's work processes;
3. Development of the company's organizational culture using the latest knowledge.

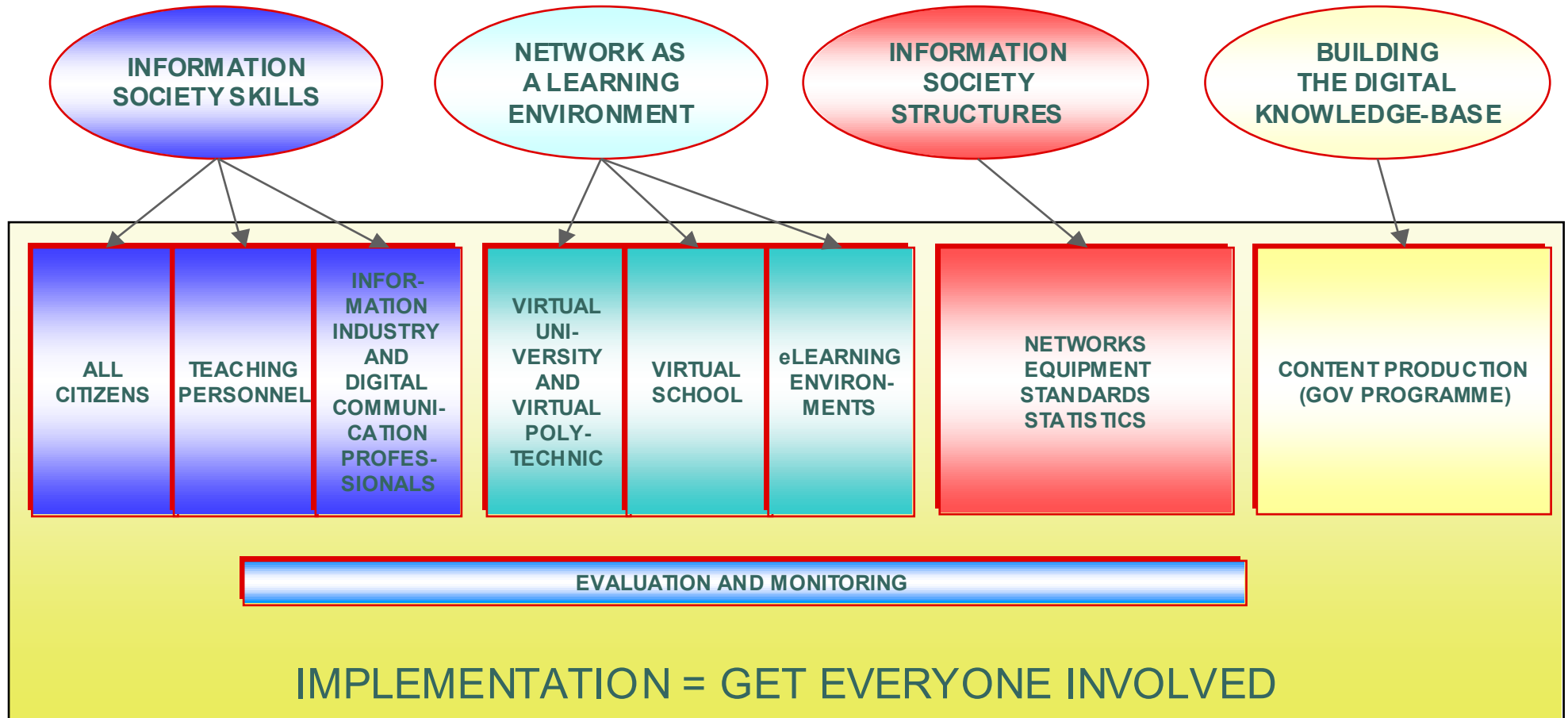
3. The continuing education provider as an organization enabling the development of the individual and the company needs and uses:

1. Development of professional development tools and offering them for the use of the customers (individuals);
2. Systematic development and use of lifelong learning concept;
3. Development and use of scientific and practical interface for strategic development.

Impacts of "e" ...?



From National Strategy to Practice 1999 - 2003: Emphasis is on...



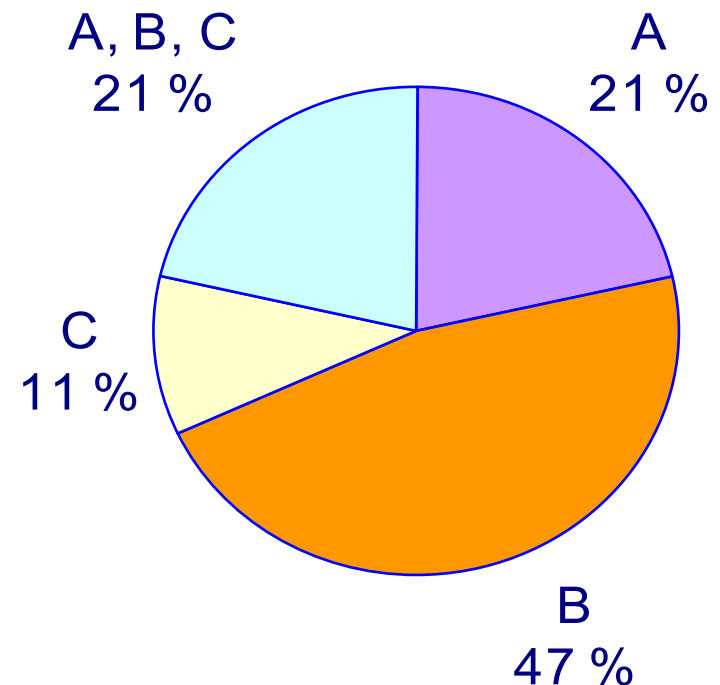
Media Mix Design: Blended Learning

A: eLearning can be used to enhance face-to-face teaching/learning (ODL)

B: Face-to-face meetings can be used to enhance eLearning (Blended Learning)

C: eLearning (online course)

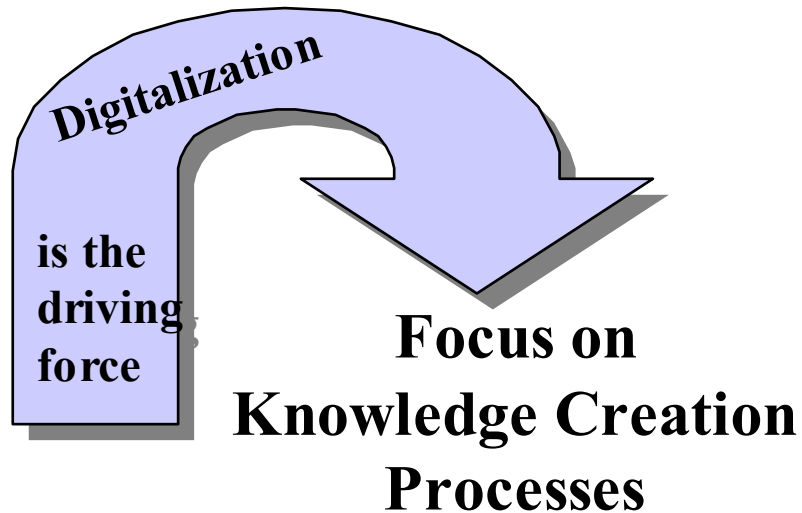
Survey in Finland:
47 faculty members from
9 universities and
3 polytechnics,
interviewed in October, 2002



Quality and e-Business

- **Realizing professional quality approach is needed for business success.**
 - **Systematic methodology is the basis (principles, practices, tools) in quality management.**
 - **However, traditional quality management methods do not bring enough added value.**
-
- **e-Business experience emphasize increasing use of technological means for managing information flow and sharing knowledge.**

Digitalization: "e" Is Not Just Technology



- **Large scale web-based and mobility applications in working methods**
- **Personalized information and knowledge contents and "databasis"**
- **Infocom business; use of ICT in content production**
- **Integration of interests of individuals, teams and organizations**
- **New e-Society activities**
- **New work culture; behaviour of individuals, organizations, different communities of practice, and society**

Need for Fundamental Change in Education

”Education is undergoing **a fundamental change** in perspective, and even in operations as a whole, shifting from an instructional focus **to active learning**.

Advances in communications and information technology are giving the change momentum. **Multimedia technology** is becoming widespread as a means of processing and expressing knowledge.

Increasing cooperation among research institutions, institutions that offer distance learning, producers of instructional and study materials, manufacturers of hardware and software, and others players in the communications field is making **learning environments**, study materials, instructional pedagogy, and other learning support services more user-friendly.”

Parliament of Finland, Committee for the Future, 1998

Schools - the inspiring atmosphere is the n:o 1 success factor: Pedagogical Leadership & Working Culture

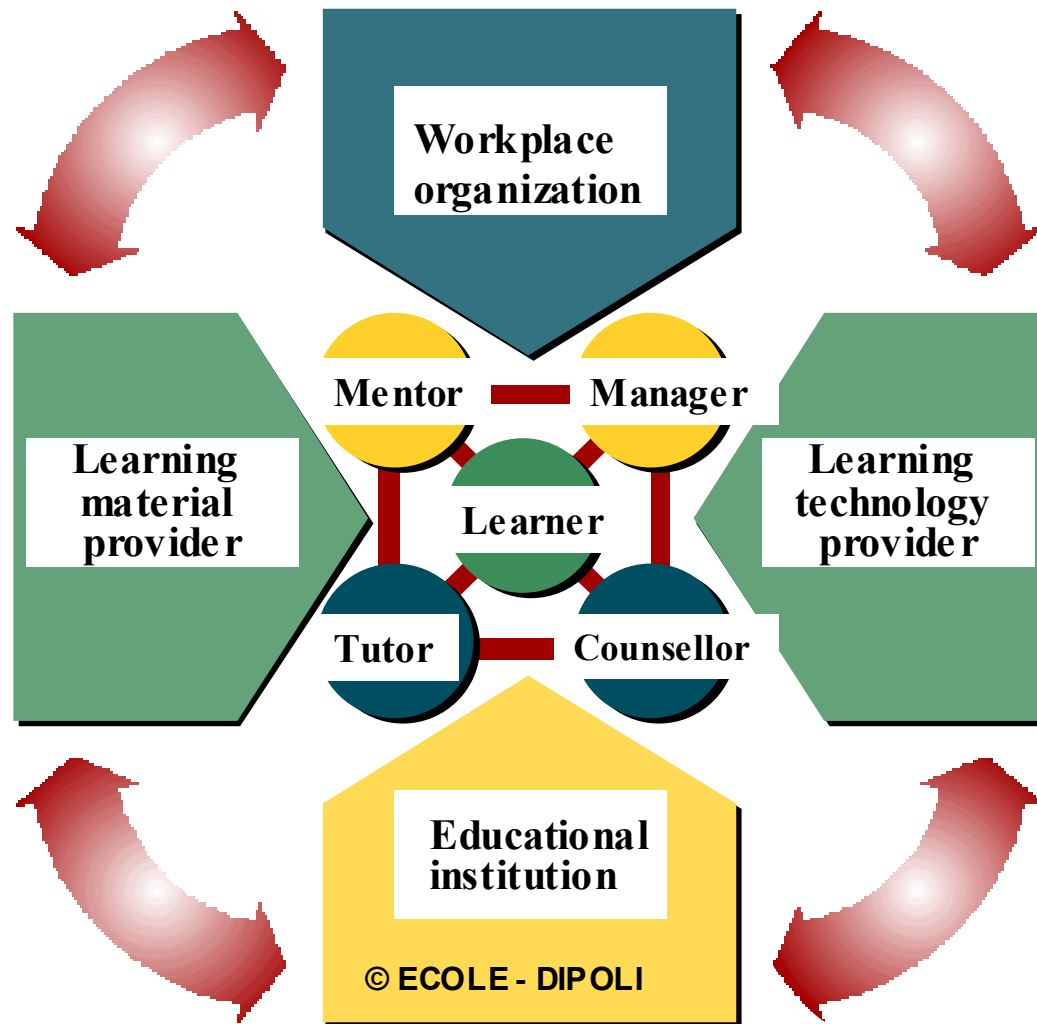
- "The committee emphasizes the importance of responsibility over pedagogical leadership in the schools' education and training duties. In the pressures of administrative work and growing financial management tasks, the pedagogical leadership has to be re-delegated as the main tasks of principals."
- "The committee wants to draw attention to the fact that it is very much the principals' task to develop the work processes, manage the changes and support the teachers' team work."
- "The committee deems it imperative that training for pedagogical leadership and management for principals and school management teams will be developed and implemented."

Parliament of Finland, Committee for Education, Science and Culture, 2001

”e” Challenges the Learner and the Teacher

- 1) BASIC VALUES OF KNOWLEDGE MANAGEMENT:** openness and trust are the basis for new work-culture (= in-depth learning together and building shared knowledge realities)
- 2) GENERAL ATTITUDE:** conscious learning process is needed to manage information flow (= increasing amount of knowledge and knowledge network)
- 3) PARTICIPATION:** sharing and working together emphasizes virtuality and co-networking (= creating Ba = physical, mental and virtual space)
- 4) INVENTING THE FUTURE:** learners and teachers understand the importance of technology assessment and foresight as a crucial element of innovative learning
- 5) ACTION:** e helps learner and teacher to create a knowledge management toolbox (= systematic commitment on personal and organizational development of professional competencies needed in work-processes)

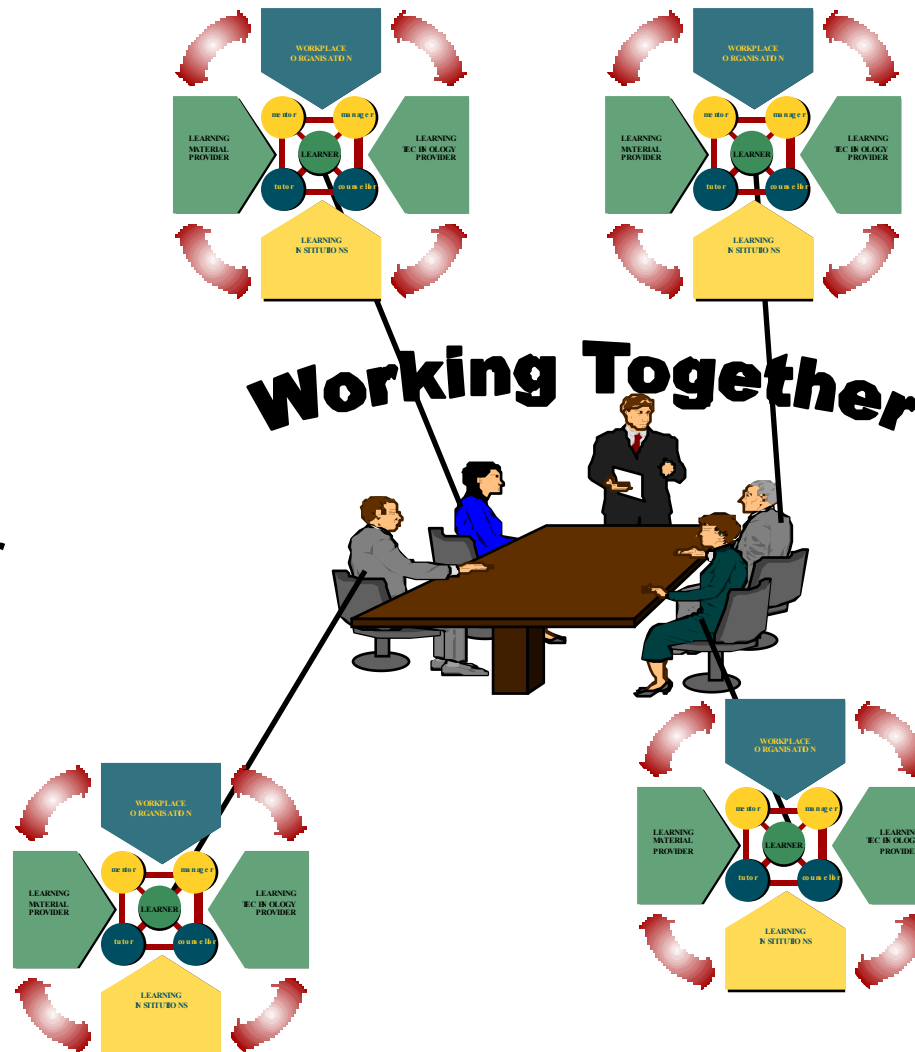
New Learning Environments & Effective Knowledge Management



- A systematic approach to new learning & teaching environments is needed.
- New learning and working environments will be based on effective knowledge management.
- Research on new, network-based educational environments will focus on the perspective of the learner and the interactive production and accessibility of learning material.

Systemized Way to Creating Knowledge

- Everyone is challenged to share with the others his own competence and the support of his knowledge network.
- We are all learners and teachers – throughout our lifetime.
- We are all part of the physical, mental, emotional and intellectual nurturing and support process.



From Evaluation and Learning to Continuous Improvement of Work Processes

Instructional Evaluation Model

Evaluate Results

financial impact the transfer of new learning is having on an organization

Evaluate Behavior

learners transferring what they learned in the classroom to a job situation

Evaluate Knowledge

student's opinions about various aspects of a course

Evaluate Reaction

student's opinions about various aspects of a course

Donald Kirkpatrick,
4 Levels of Evaluating Training
(1959, 1975)

4-Tier Learning Model

Learn from Co-Location

Get together, Build Communities & Relationships, Live it, Do it

Learn from Collaboration

Discuss it, Practice it with others

Learn from Interaction

Examine it, Try it, Play it

Learn from Information

Read it, See it, Hear it

Howard M Fletcher,
4-Tier Learning Model
IBM Mindspan Solutions (2001)

Impacts of "e" on Work-Culture

New Patterns in Work-Culture

Collaborative Knowledge Sharing & Creation

New Contacts and Partnerships

Meaningful Pieces of Information

Markku Markkula,
KM-Dynamo (2003)

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From Evaluation and Learning to Continuous Improvement of Work Processes

4-Tier Learning Model

Learn from Co-Location
Get together, Build Communities & Relationships, Live it, Do it

Learn from Collaboration
Discuss it, Practice it with others

Learn from Interaction
Examine it, Try it, Play it

Learn from Information
Read it, See it, Hear it

Howard M Fletcher,
4-Tier Learning Model
IBM Mindspan Solutions (2001)

Impacts of "e" on Work-Culture

New Patterns in Work-Culture

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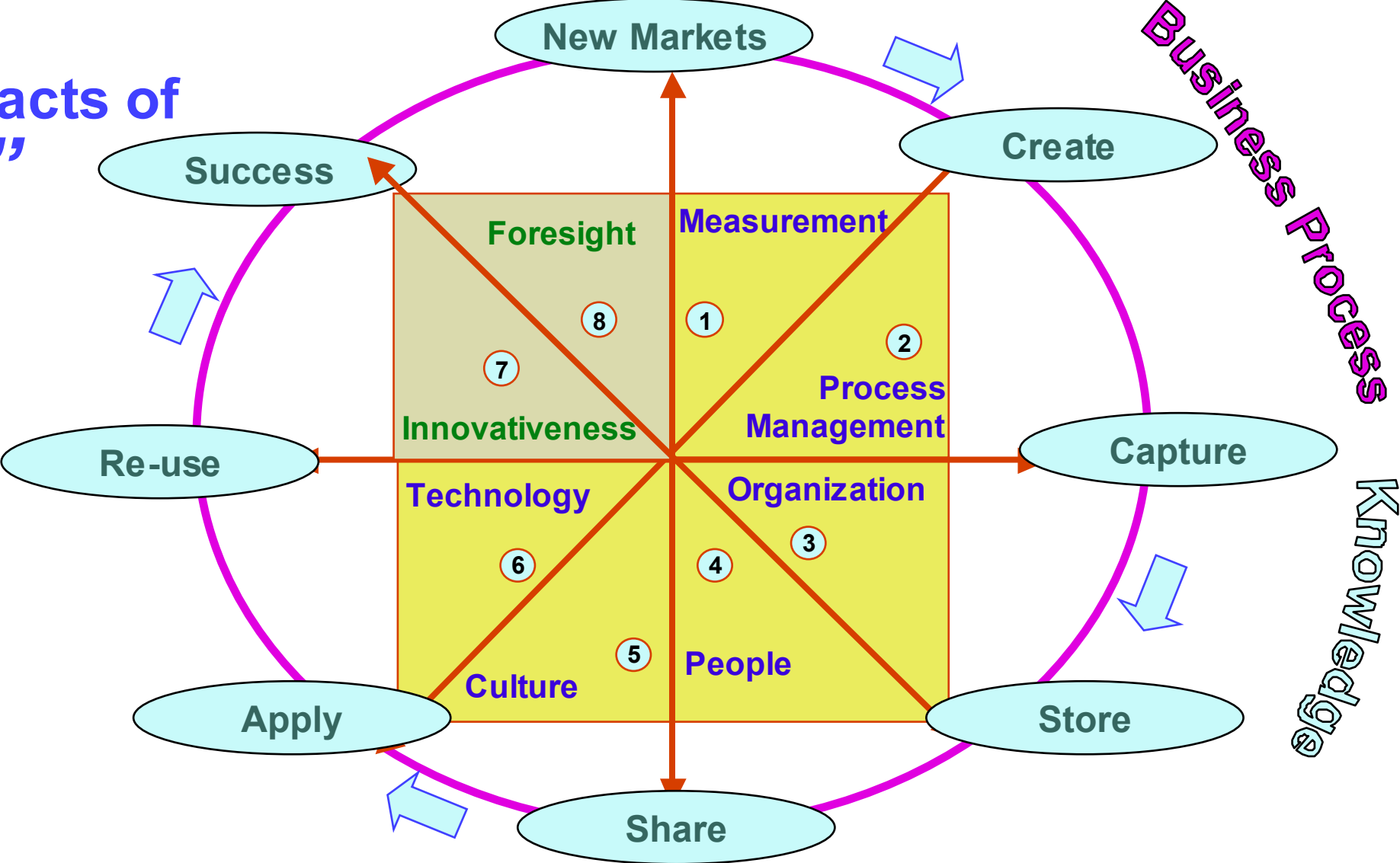
New Methods and Criteria Are Needed for Evaluation: Measuring Performance and Developing Work Processes (= Time for Re-newing Quality Management)

From Strategy to Business Benefits through Knowledge Management

**For a successful business
knowledge
plays a crucial role
in all the elements of
business process.**

From Strategy to Business Benefits through Knowledge Management

Impacts of "e"



Basic elements are adopted from Dr. Pentti Sydänmaanlakka: "An Intelligent Organization"

From Strategy to Business Benefits through Knowledge Management

1. Measurement

- performance
- competencies
- intellectual capital

2. Process Management

- best practices
- continuous improvement

3. Organization

- network
- virtual

4. People

- awareness
- motivation

5. Culture

- knowledge sharing is power

6. Technology

- infrastructure
- Applications

and the additional elements needed for new markets and success

7. Innovativeness

8. Foresight

*Basic elements are adopted from Dr. Pentti Sydänmaanlakka:
"An Intelligent Organization", 2002*

From Strategy to Business Benefits through Knowledge Management

ICT is enabling a paradigm shift to

managing by focusing on **work processes** and **visualization**, and managing by **interaction** and **collaboration**,

Focusing on knowledge is not enough for success,

insight into opportunities for **discontinuous innovation** makes the difference, and for that we need to emphasize **technology foresight** and **technology assessment**

Technology Foresight & Innovations

General trends:

globalisation, knowledge and competence, digital network economy, sustainable development, social development, technological trends

Development of industrial clusters:
competitiveness and renewal of existing industries,
birth and growth of new businesses
Welfare in line with sustainable development

Intelligent products,
processes and systems

Information and
communications
technology

Welfare

Material
technology

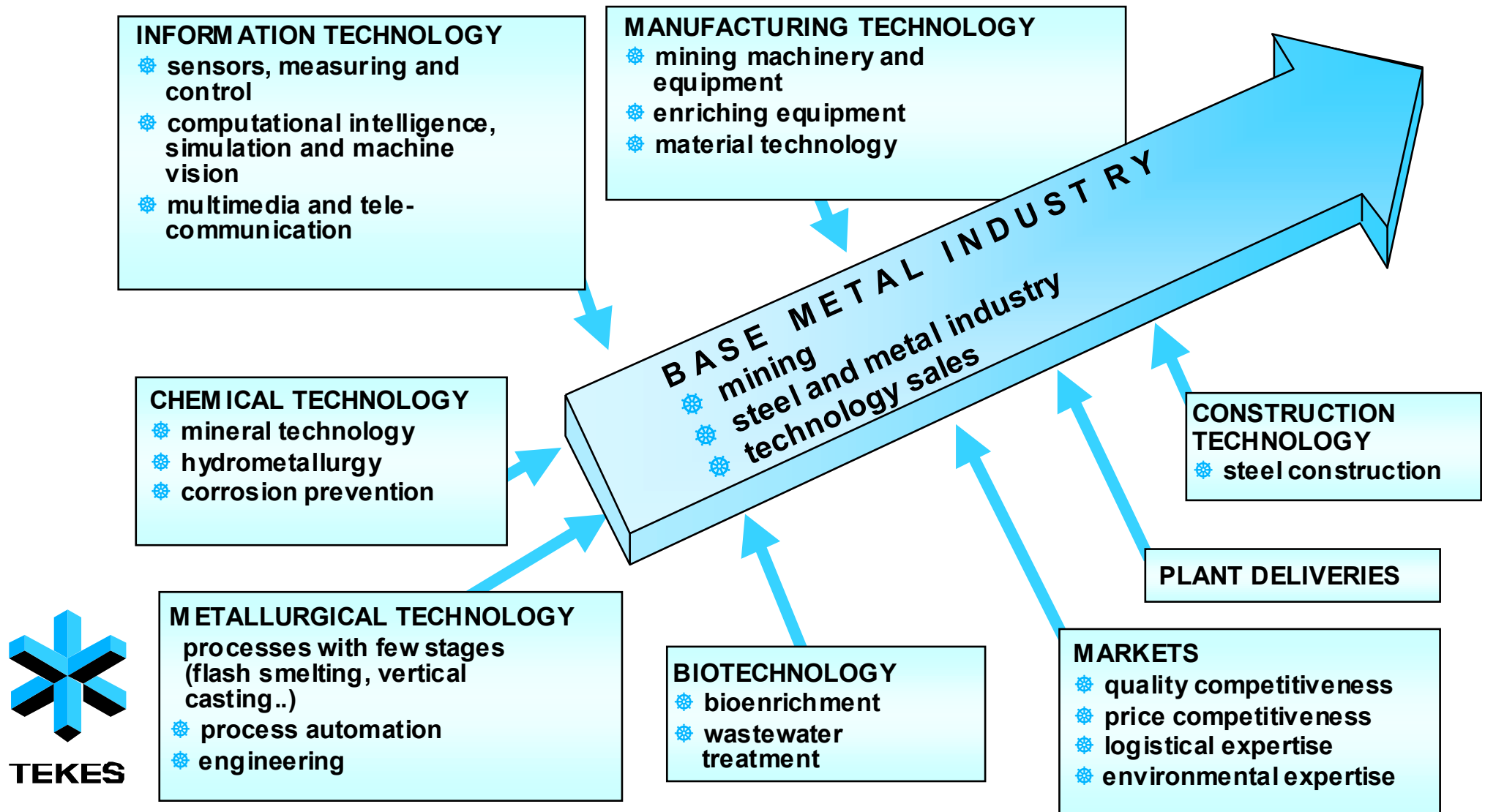
Sustainable
development

Bio-
technology

Knowledge-
intensive services

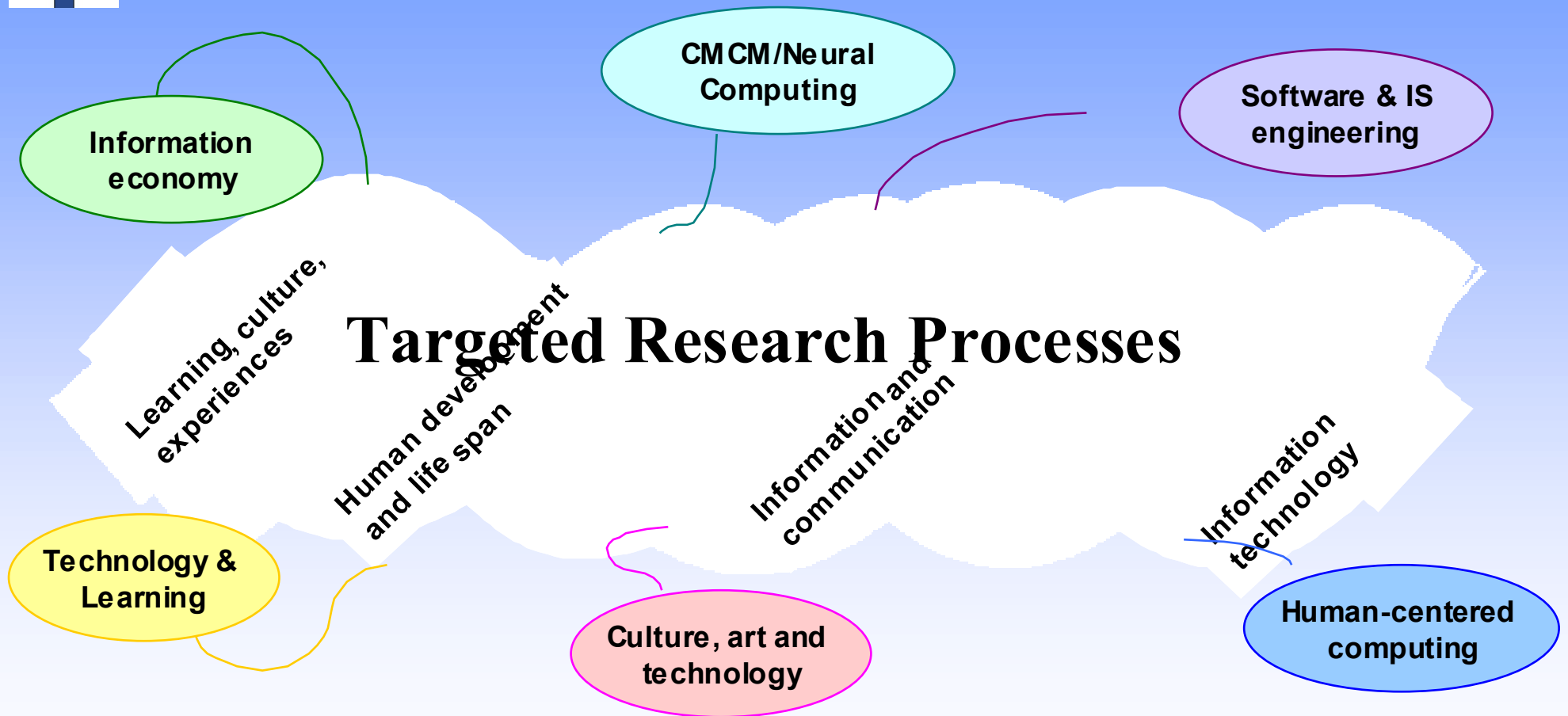
Business competence in the networked economy

An Example of the Base Metal Industry: Only Multidisciplinary Secures Competitiveness





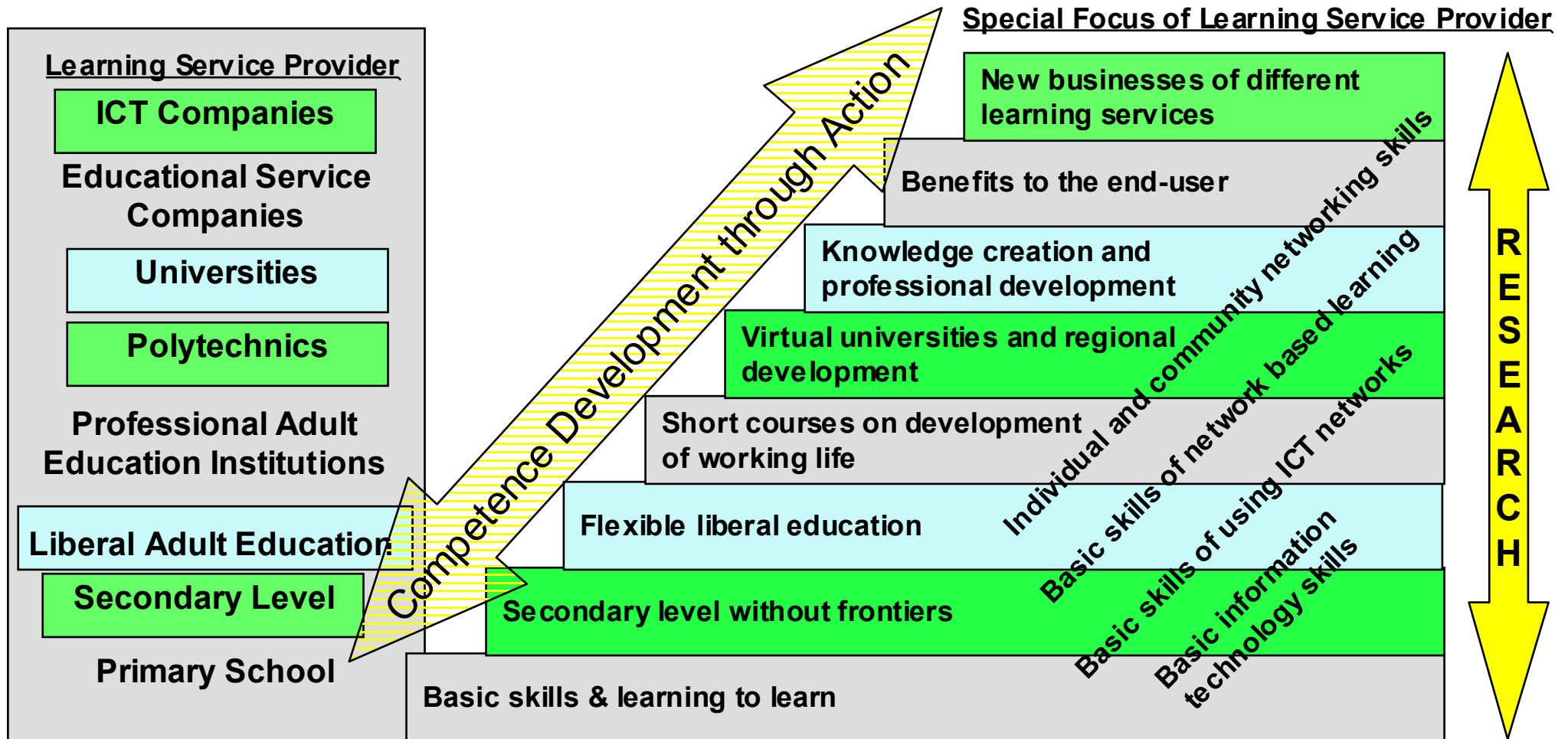
Building Multidisciplinary Research Platforms for Knowledge Creation



AGORA

Learning Region Central Finland

Skills and Abilities to Operate in Information Society



JSP JYVÄSKYLÄ SCIENCE PARK
JYVÄSKYLÄN TEKNOLOGIAKESKUS OY



KESKI-SUOMEN LIITTO



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Case Finland: One-Man-Committee

- In May 2002 Markku Markkula was appointed by the Ministry of Education as a one-man-committee to analyse and make recommendations for the Finnish eLearning Policy.
- The report was published by the Ministry of Education in March 2003

Enhancing the development of knowledge based society in Finland

Content Creation
Technology Services
Learning Services
Learning Communities

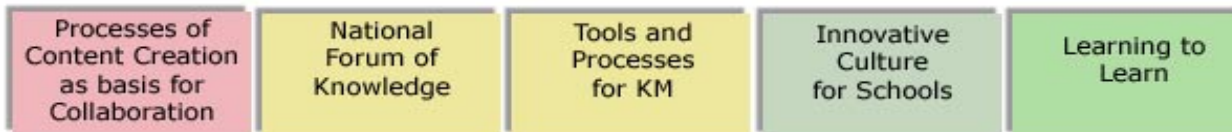
One-Man-Committee
Report (80 pages)



Structure of the Report

Content Creation Technology Services Learning Services Learning Communities

Actor groups



Strategical
Choices



Recommendations

7 Domains of Change	21 Recommendations
A. Strengthening the Competencies for Citizenship in the Information Society	A1.
	A2.
	A3.
B. Developing the Value-Chain	B1.
	B2.
	B3.
C. Accelerating the Market Development	C1.
	C2.
	C3.
D. Encouraging collaboration	D1.
	D2.
	D3.
E. Developing the Human Resources	E1.
	E2.
	E3.
F. World Class Performance in Selected Areas	F1.
	F2.
	F3.
G. Optimizing the effective use of existing financial resources	G1.
	G2.
	G3.

Recommendations B&C

B. Creating and Understanding the Value-Chains and Value-Networks of Education	B1. Creating the National Agora of Knowledge
	B2. Enhancing interoperability by means of Standardization
	B3. Promoting multi-partnerships and consortium models for eLearning projects
C. Accelerating the Market Development	C1. Supporting the development of competencies for advanced procurement of eLearning
	C2. Launching of sizable projects within the public sector
	C3. Systematic collection and continuous updating of statistical data and future forecasts within the field of education and training

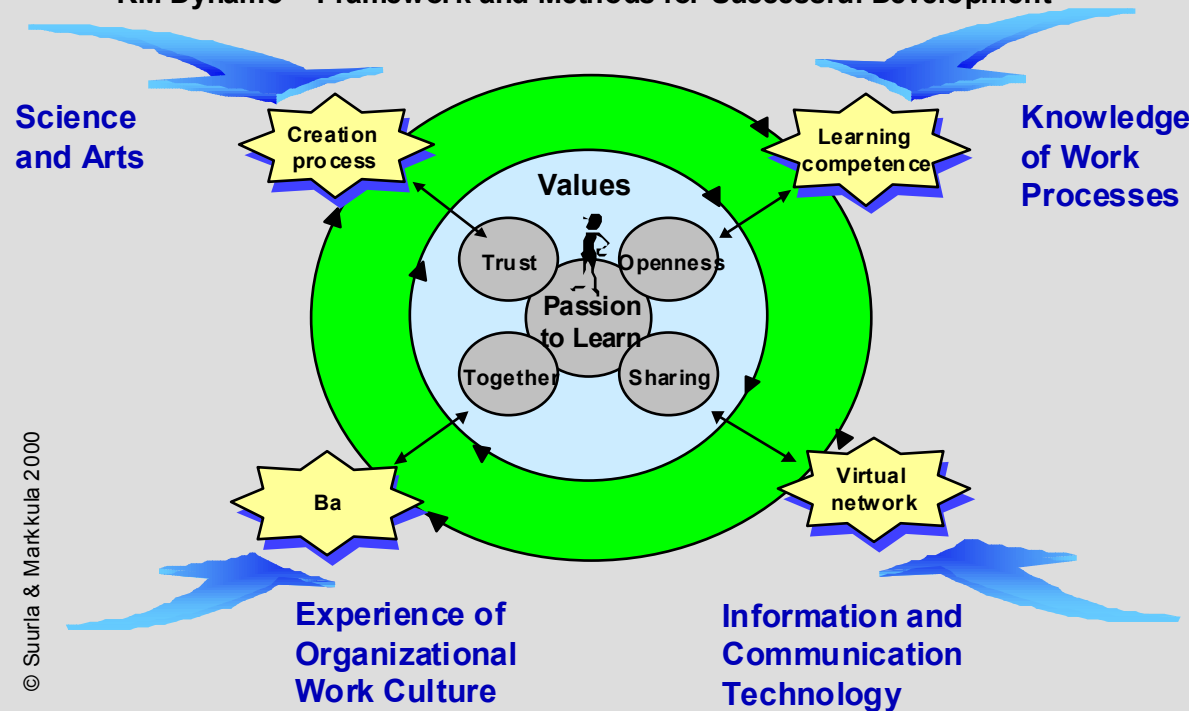


SoL Finland
Society for Organizational Learning



Knowledge Management Dynamo

KM-Dynamo = Framework and Methods for Successful Development



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Society For Organizational
Learning

SoL Global Forum 2003

*- Inventing Desired Futures
in a Global Society*

June 11th - 14th 2003
Dip oli, Espoo, Finland

www.solonline.org

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