ICT in university education:

From pilot projects to established practices

Case Finland and Helsinki University of Technology

Heikki Hallantie/TKK

3 March 2006
EQIBELT-Workshop

What do you know about Finland ?

- Wood industry
- Santa claus
- Nokia
- Complicated language
- Hockey
- Lakes
- Genuine culture

FINLAND

Area total:
337,030 sq km

Population:
5,183,545

GDP/ comp. by sector:
agriculture: 4%
industry: 34%
services: 62%

GDP/ capita:
purchasing power parity
$26,200

International organizations
-Member of United Nations
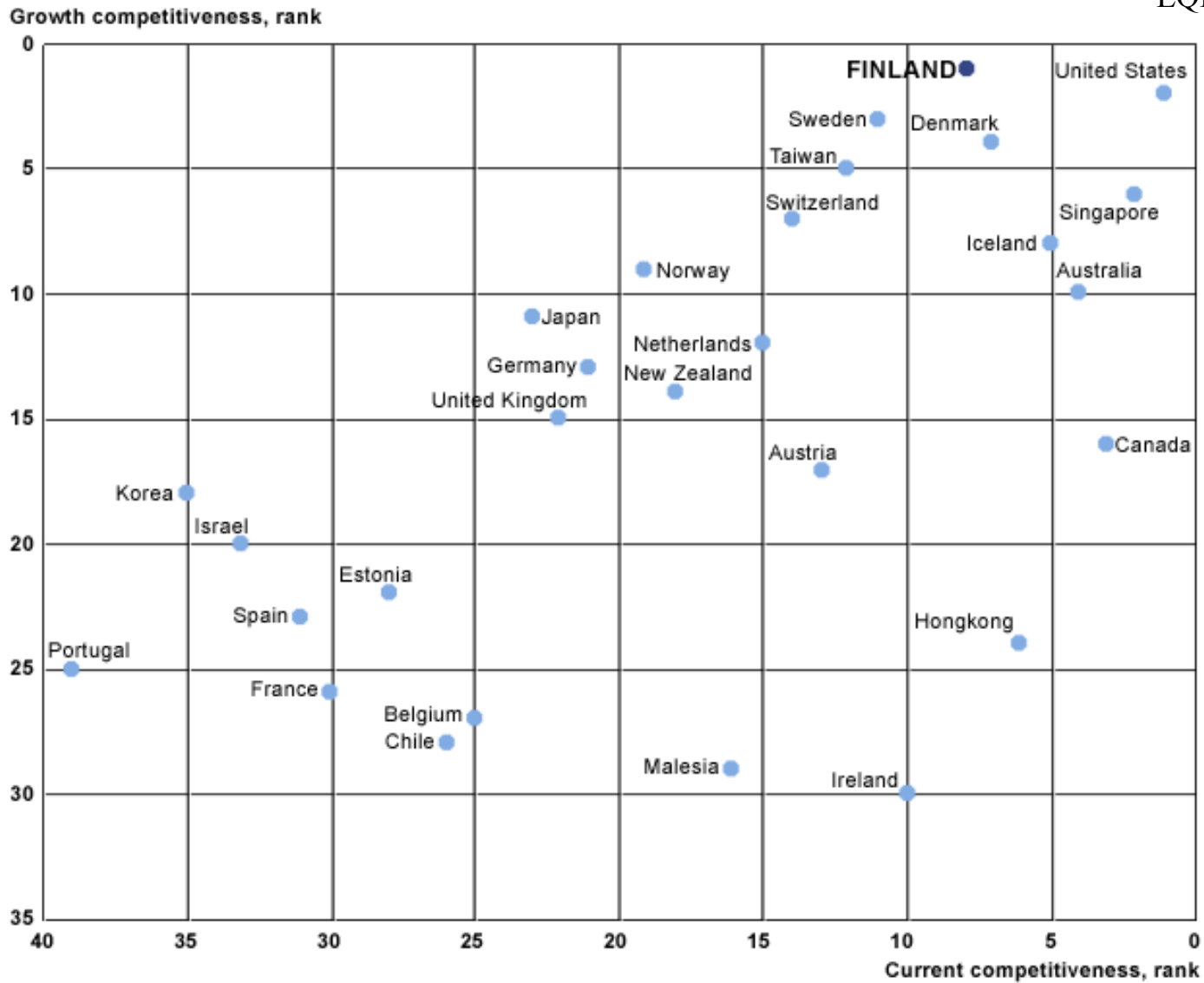since 1955
- Member of European Union
since 1995

http://www.gandalf.it/data/data2.htm
http://www.cia.gov/cia/publications/factbook/

3 March 2006

EQIBELT-Workshop

Competitiveness

Growth competitiveness, rank / Current competitiveness, rank
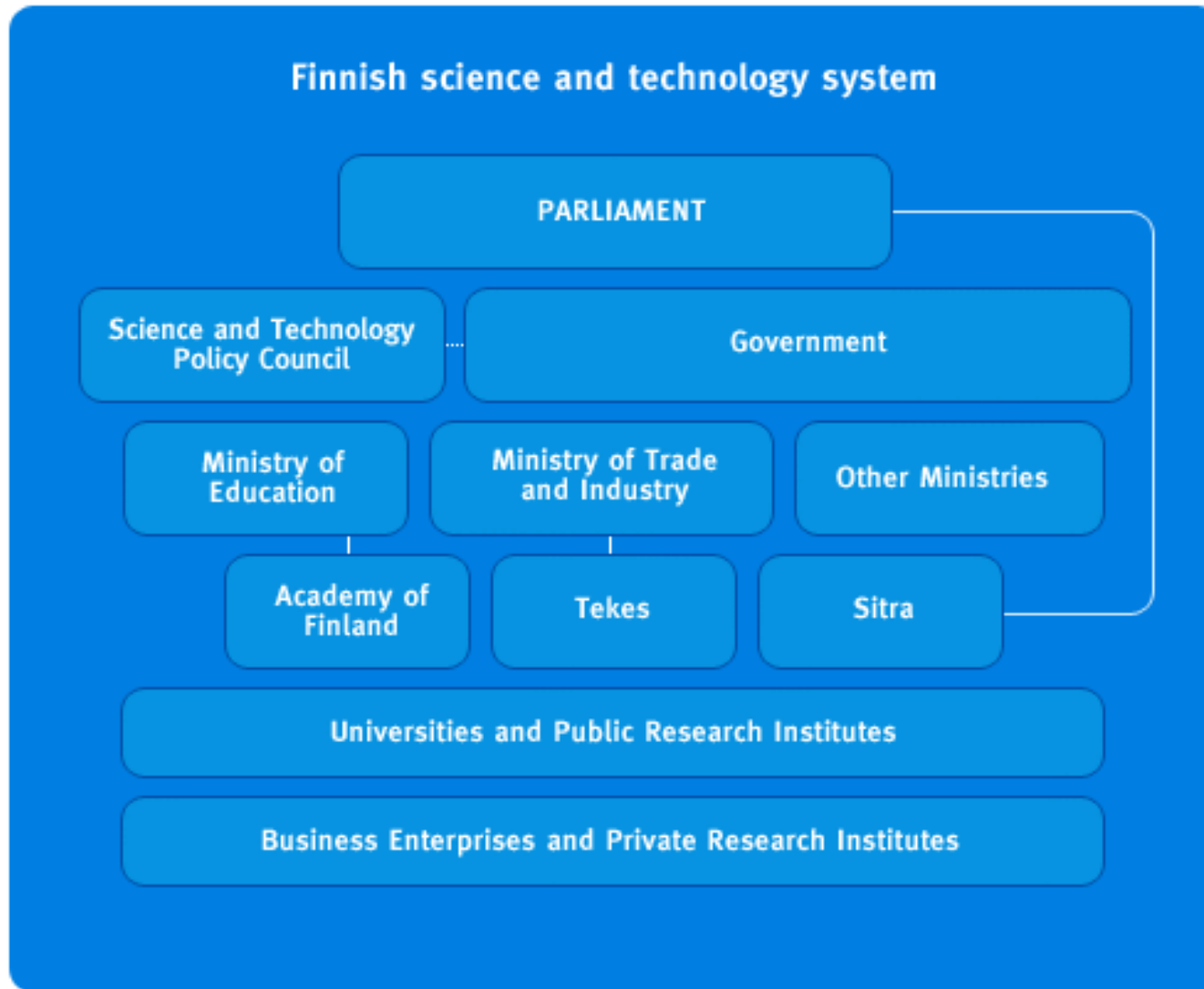
Source: World Economic Forum (WEF), The International Institute for Management Development (IMD)

Finnish Innovation System
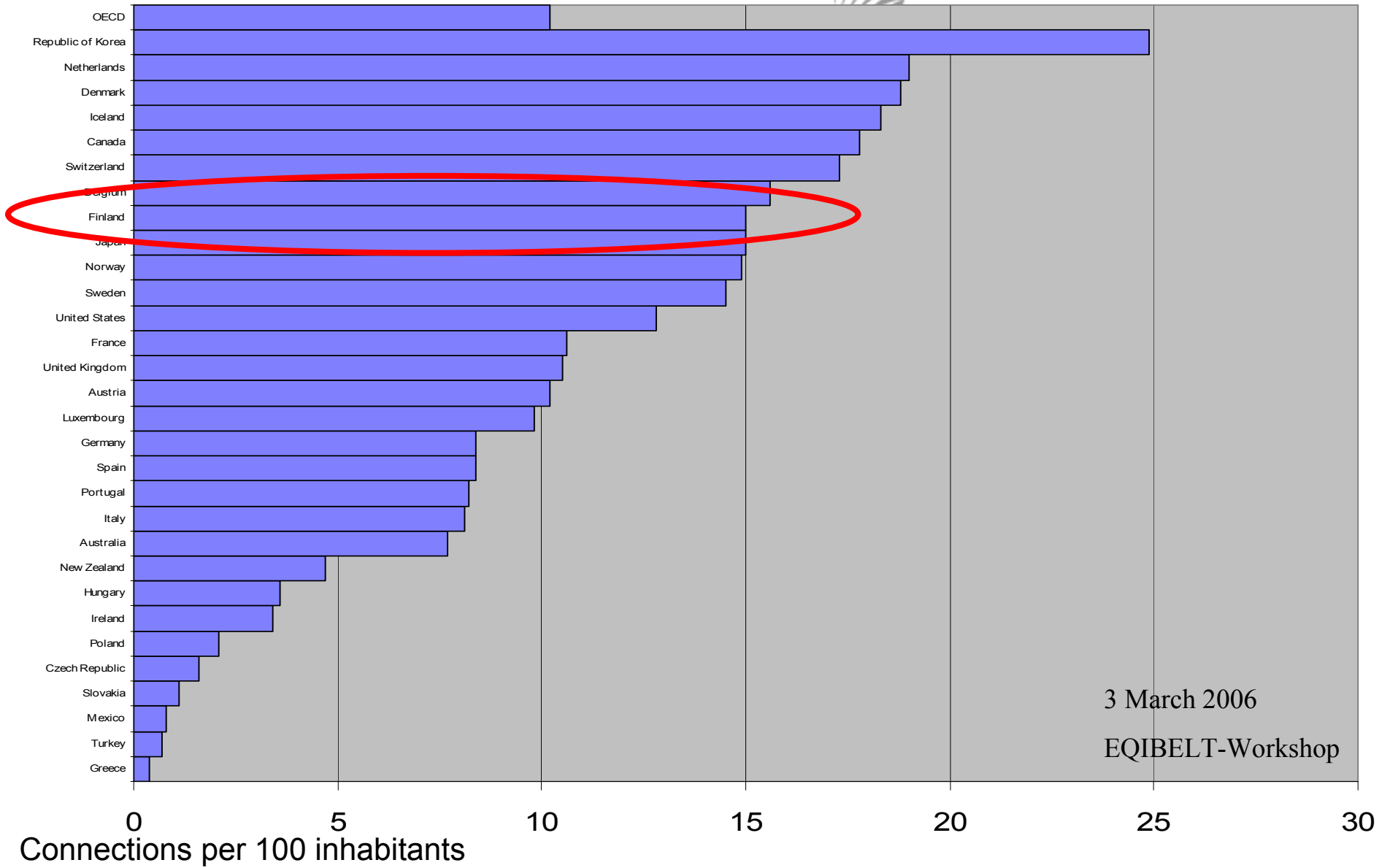
Source: http://www.research.fi

Broad-band Connections

http://www.tilastokeskus.fi

Connections per 100 inhabitants

3 March 2006

EQIBELT-Workshop

Structure of the presentation

- Background & general trends
- ICT's in Finnish University Education
- ICT's in HUT Education
- Examples of Pilot Projects
- Examples of Established Practices
- Lessons learned
- Roadmap to the Future

University as an institution of Information Society

- ICT considered as social communication system instead of technology
- focus on systemic level from individualistic teacher-learner centric approach
- ICT will be an essential part of new education system
- e in e-learning should be read "enhanced"
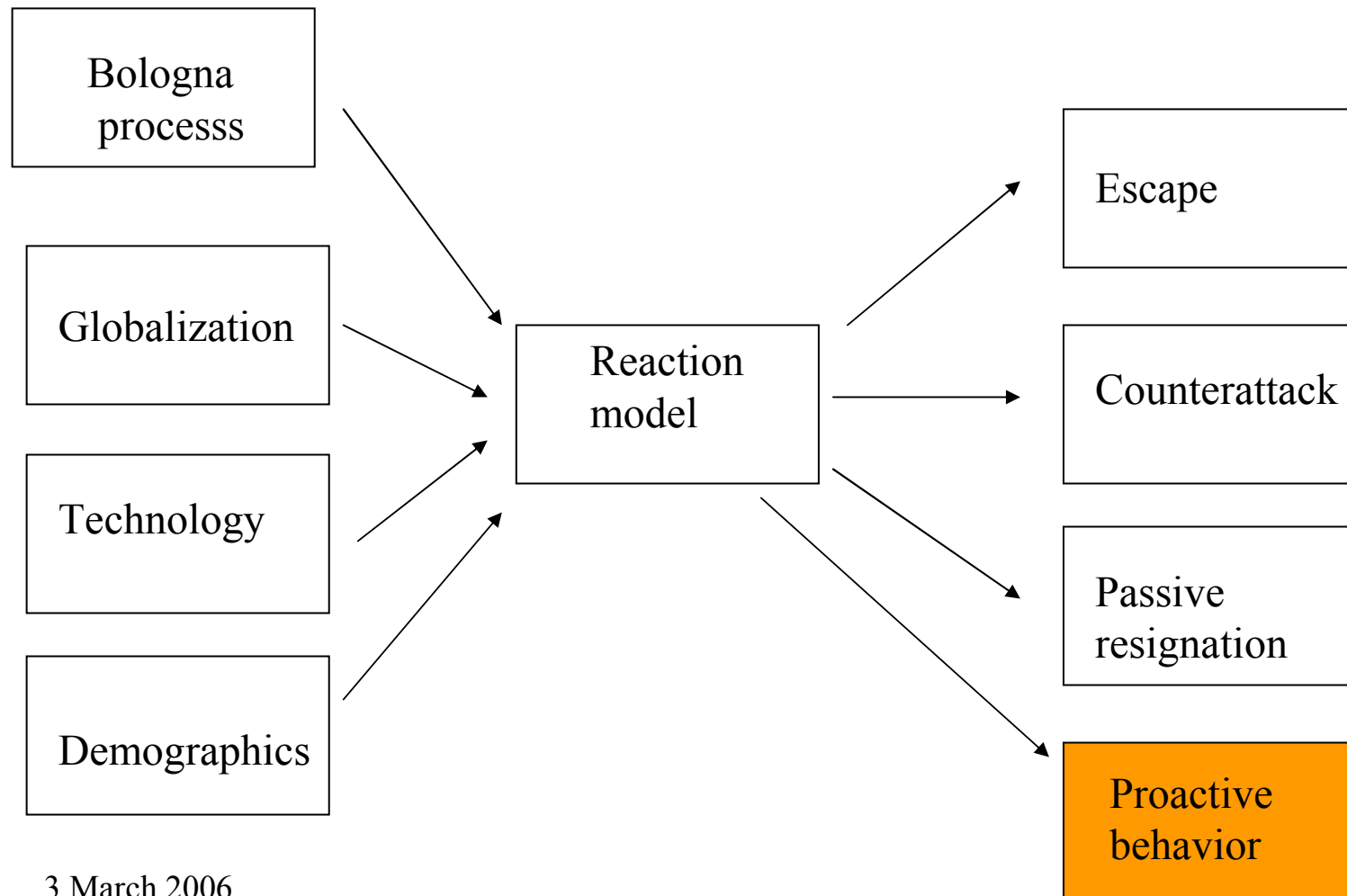- Source: Dr. Jyrki Pulkkinen/Dissertation 2003

Megatrends & Weak signals

- Technology trends
  - price/performance getting better
  - ubiquitous computing

- Globalization

- Demographic factors

- Bologna process

- Big changes in education systems unavoidable

Reaction model

Bologna processs

Globalization

Technology

Demographics

→ Reaction model →

Escape

Counterattack

Passive resignation

Proactive behavior

3 March 2006
EQIBELT-Workshop
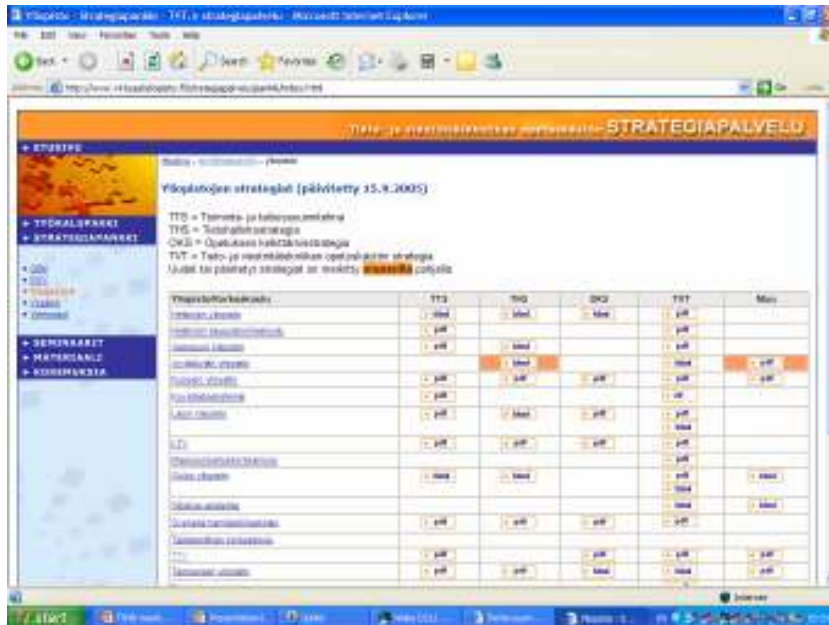
ICT's in Finnish University Education

- The Finnish University System

  - 21 state owned Universities

- Autonomy of Universities

- Finnish Virtual University

  - eLearning hype

  - good and bad experiences

- Towards Portals and MLE's

Finnish Virtual University activities

Local activities at
each university
- e-learning material
- Learning systems
- e-Learning courses
- ICT training
- Local support services

Inter-University co-operation
- Thematic networks
- Common services
- Development projects

National level activities at Service Unit
- Common portal and support services
- Common agreements
- International co-operation
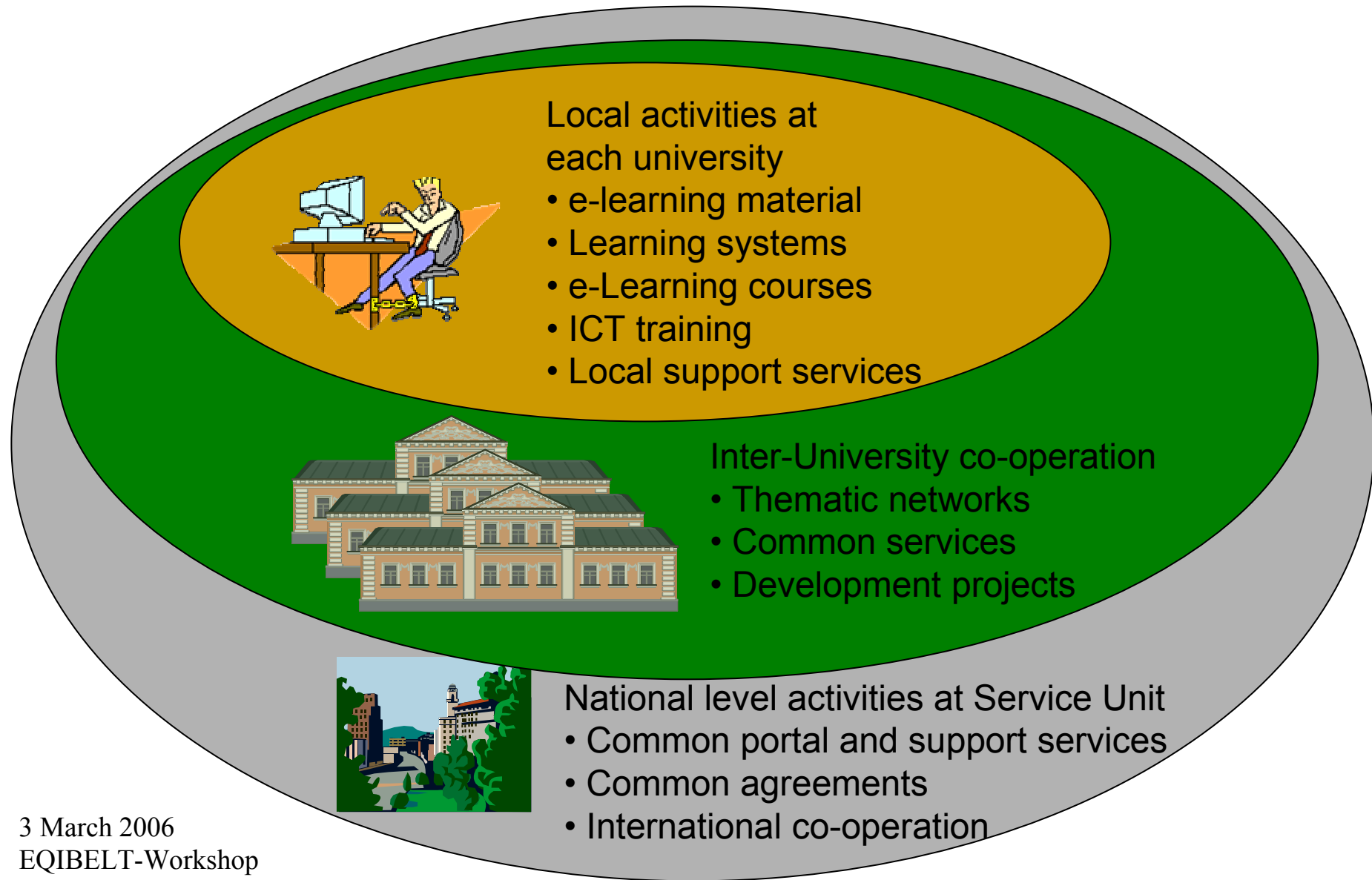
3 March 2006
EQIBELT-Workshop

Case: Strategic Development and ICT Strategy Service

➢ The development of Finnish Virtual University started as strategic level initiative

➢ In order to support the universities to define an ICT strategy, a strategy support service was created by the FVU

➢ Strategy service has tools how to built up a balance score card based strategy

➢ Strategy service has a data base of different ICT strategies of Finnish universities

➢ Strategy service is supported by strategy consulting offered by the senior experts of FVU

Experiences: - all universities have made ICT strategies
                  - the quality of university strategy work has increased
                  - the openness of universities goals has increased

Case: Learning Center "Aleksandria" at Helsinki University

➢ The Finnish Virtual University activities of Helsinki University are organized as Learning Centre "Aleksandria"

➢ In addition of the virtual university activities the unit has components of university library, university language centre and IT support units.

> ➢ The Language Centre is responsible for the Self-Access Centre for language study
>
> ➢ the Library offers a major part of Aleksandria's library services
>
> ➢ Information Technology Department takes care of IT support, user account administration, and software distribution and sales.

➢ At the Learning Centre there are 350 computers available for the students' use free of charge 24 hours per day.

➢ The local virtual university unit offers the teaching staff of the University of Helsinki support services in the use of ICT in teaching.

Case: ICT training program "TieVie"

➢ Finnish Virtual University ICT training program "TieVie" is networked expert organization comprised of experts from 13 universities

➢ TieVie has trained almost 600 university teachers to have the basic level educational ICT skills and over 300 teachers and specialists have been trained to expert level.

> ➢ Altogether the number of trained people represents about 11 % of total number of Finnish university teachers.

Case: Service Unit

➢ The Service Unit of the Finnish Virtual University offers and maintains the national virtual university services like portal services and flexible study right services.

➢ The unit negotiates national level agreements between the consortium members and with partners.

➢ The personnel participate in national development projects and the results of the projects are distributed via service unit channels.

➢ The service Unit is also one contact point for all domestic and international contacts.

➢ The service unit has a staff of 7 persons.

ICT's in TKK's Education

- Early adoption in pilot courses
- Student database in 90's
- Web-based course registration system in 90's
- Finnish Virtual University initiative 1999
- Common Course management platform in 2004
- MLE- project in 2005

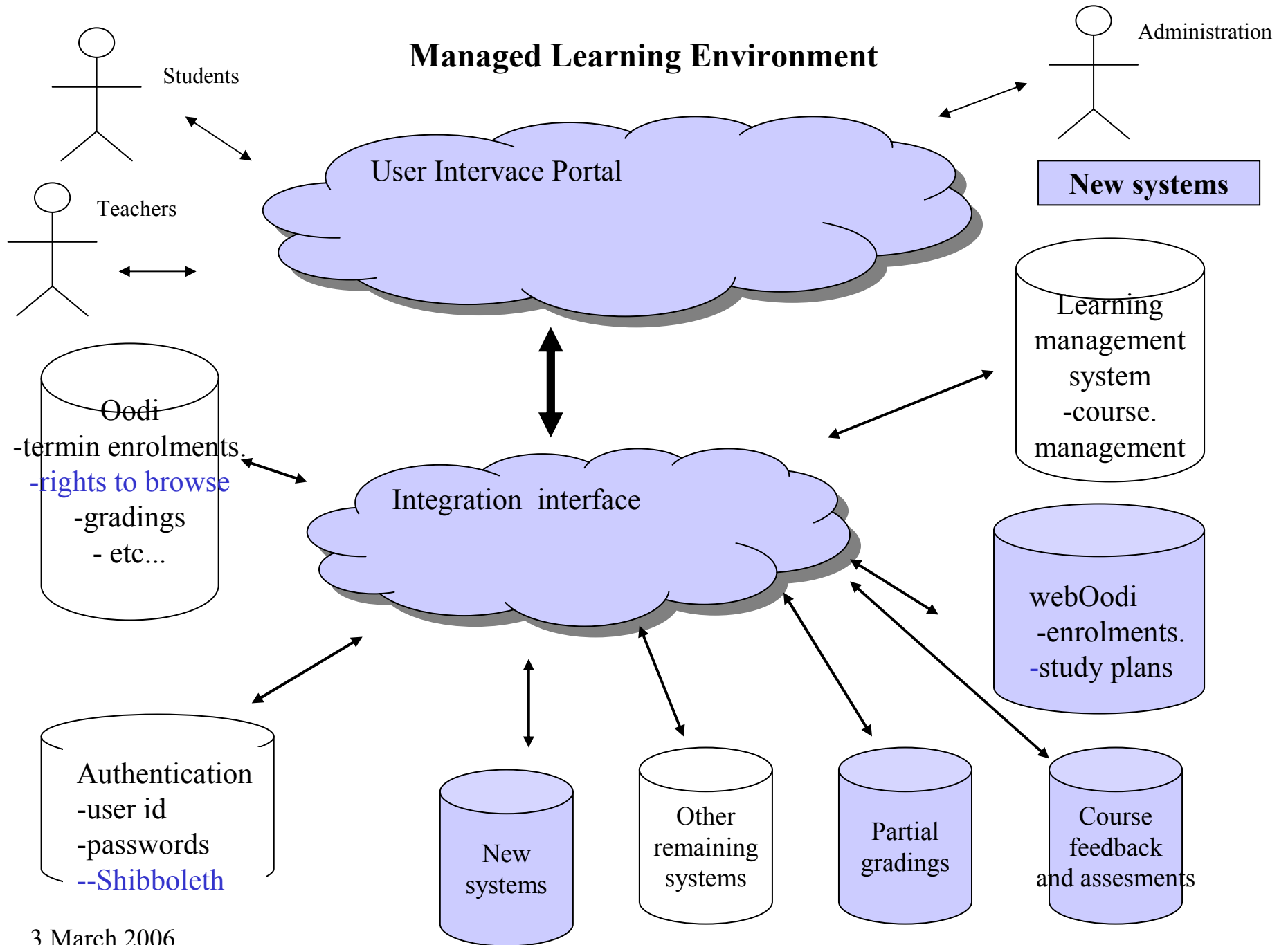# electronic environment@Helsinki University of Technology – eTKK

www.tkk.fi/eTKK (in finnish only)

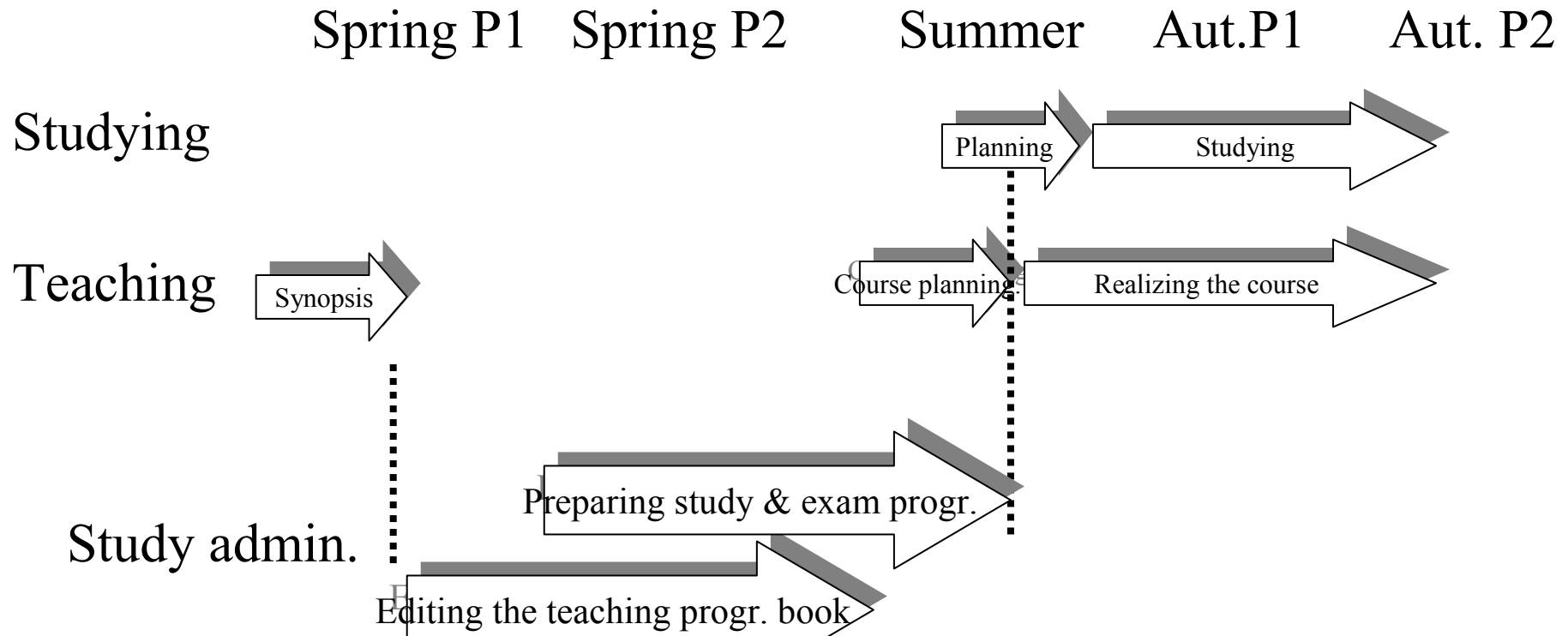| Project coodination (M.Melin / M.Sipilä)				
eAGE – electronically Administrated Generic Environment	**MLE** - Managed Learning Environment	**CMS** – Content Management System	**Quality system**	**URTHA** – **Project Management System**
M.Pirttivaara J. Salmela	H.Hallantie T.Toivonen	M.Melin J.Lahtinen	M.Melin	I.Lähteenmäki
Shibboleth (A.Tontti)= SSO user recognition				

Existing systems, that must work in cooperation with the new systems:

- Employee information system
- Study systems
- Billing system
- Travel system
- Electric phonebook
- Machine registry
- Economy management system
- Resource management system

3 March 2006
EQIBELT-Workshop

Managed Learning Environment

Students

Teachers

Administration

New systems

User Intervace Portal

Learning management system
-course. management

Oodi
-termin enrolments.
-rights to browse
-gradings
- etc...

Integration interface

webOodi
-enrolments.
-study plans

Authentication
-user id
-passwords
--Shibboleth

New systems

Other remaining systems

Partial gradings

Course feedback and assesments

3 March 2006
EQIBELT-Workshop

Yearly cycle of studies as a process scheme

| | Spring P1 | Spring P2 | Summer | Aut.P1 | Aut. P2 |

Studying

Planning → Studying

Teaching

Synopsis →

Course planning → Realizing the course

Study admin.

Preparing study & exam progr. →

Editing the teaching progr. book →

Problem: 1. Preparing the study and exam program is not transparent to the student -> No time for planning the studies

Solution: 1. Administrative processes should be transparent to students.

2. Study & exam planning pprocess sould be completed end of June.

Lessons learned

- Progress is much slower than anticipated
- Avoid technology push
- Involve users
- Process re-engineering is necessary
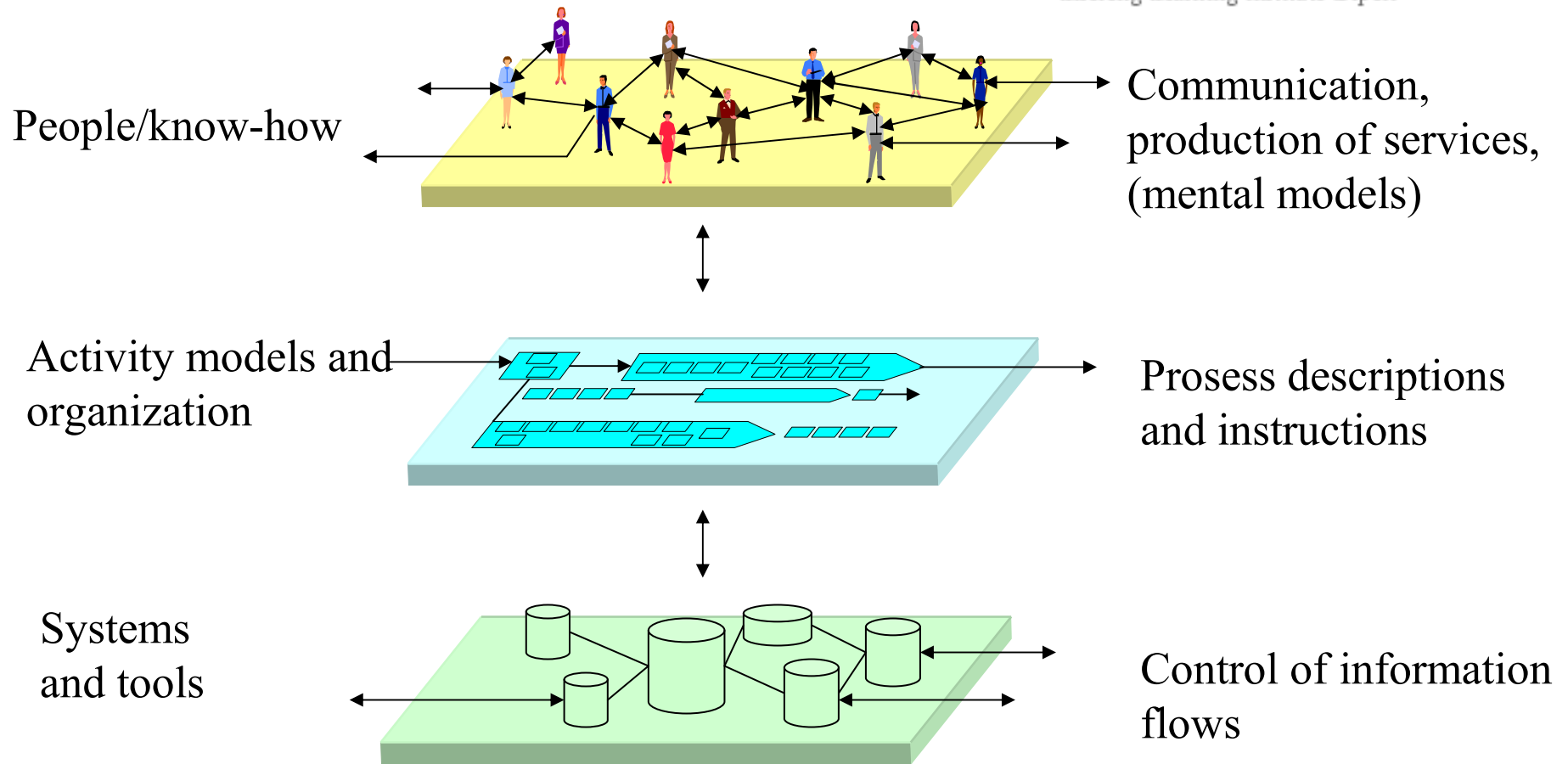- Paradigm change in education nenessary
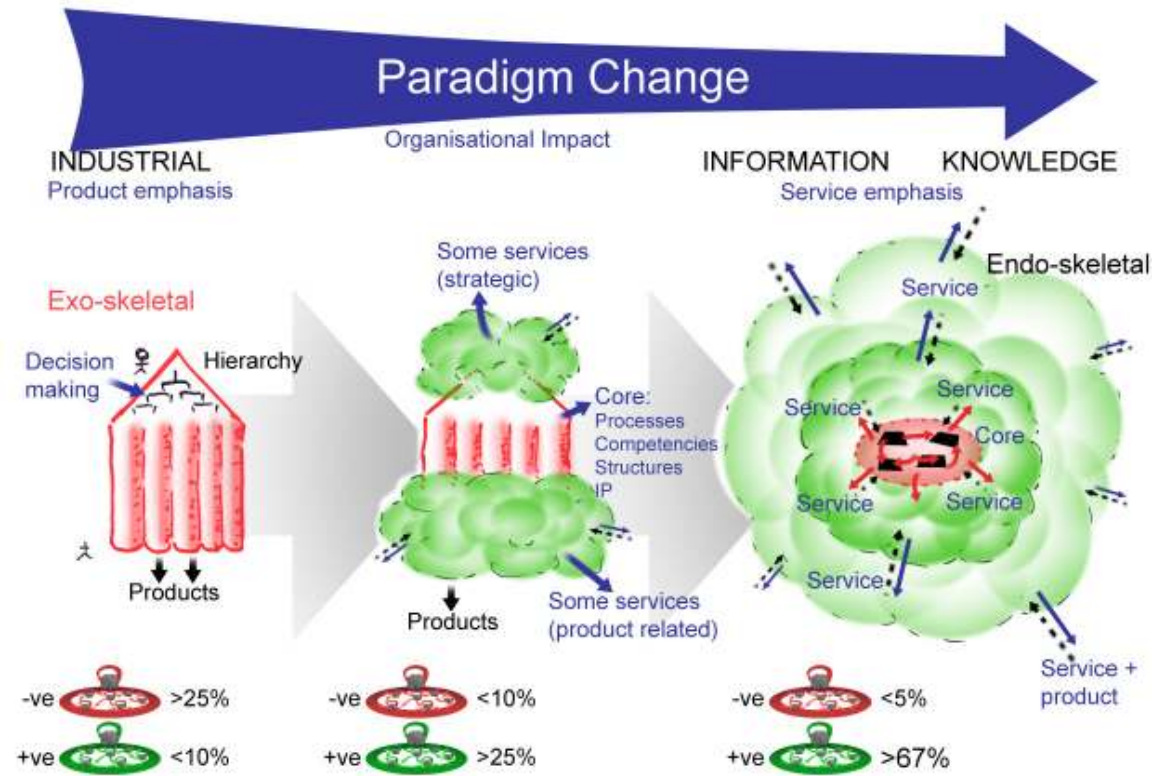
Roadmap to the future

- University as an institute of Information society

- From formal hierarchies to open networks

- Global competition and co-operation of Universities

The 3-tier organization model

People/know-how

Communication,
production of services,
(mental models)

Activity models and
organization

Prosess descriptions
and instructions

Systems
and tools

Control of information
flows

3 March 2006
EQIBELT-Workshop

Bob Day

Any Questions/Comments?
Thank you for listening

heikki.hallantie@tkk.fi