The Finnish ways to deal with the change: challenges and possibilities

EUNIS rectors conference 3.4.2014

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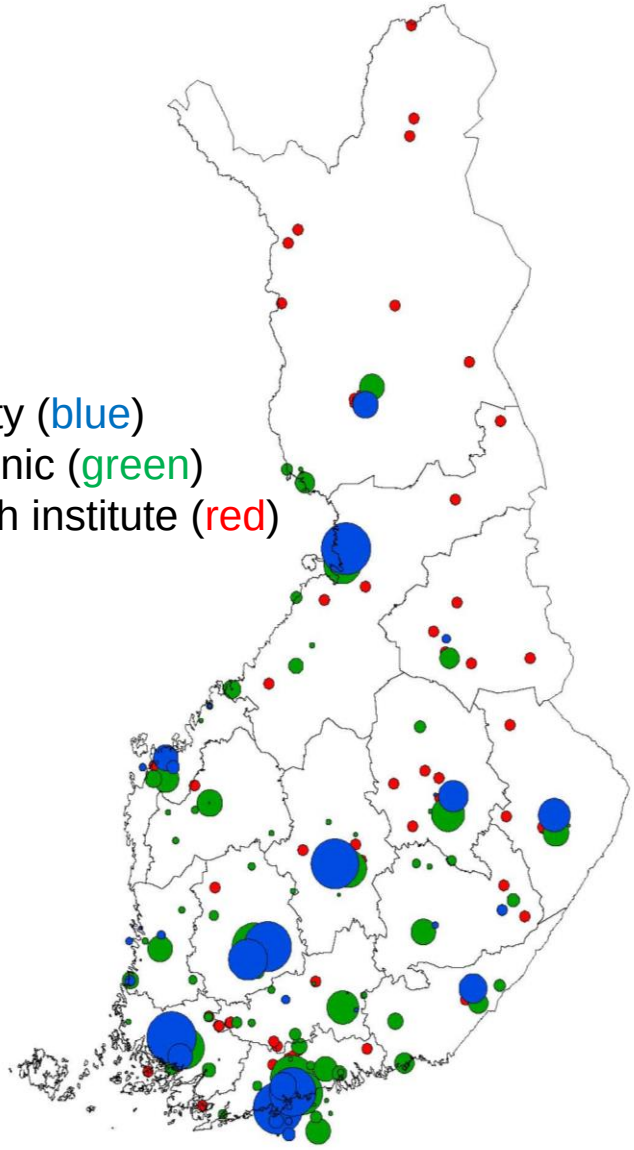
Ministry of Education and Culture
Ministère de l'Éducation et de la culture

Some higher education facts about Finland

- Population of 5,4 million
- Higher education institution network covers the populated parts of the country
  - 14 universities (four in the great Helsinki area)
  - 25 polytechnics
- Student enrolment altogether ca. 316 000
- National languages: Finnish and Swedish



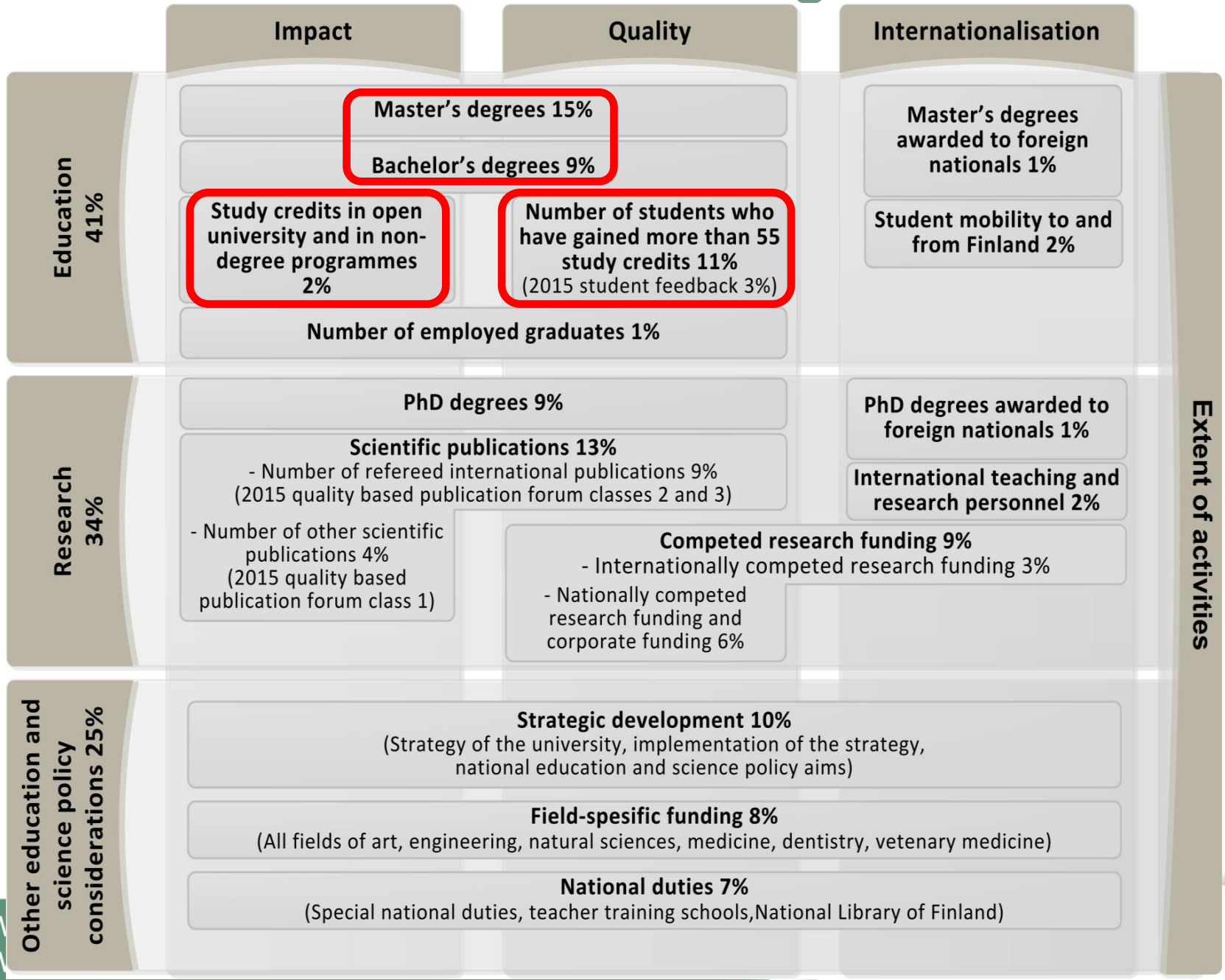
Topics

- *Backdrop:* Finland and the Finnish Higher Education system
- *Education:* MOOCs, OERs, etc. - need for policy?
- *Research:* Finnish Open Science and Research Initiative (ATT)
- *Primary & Secondary education:* Gateway to Digital Learning Resources in the Cloud

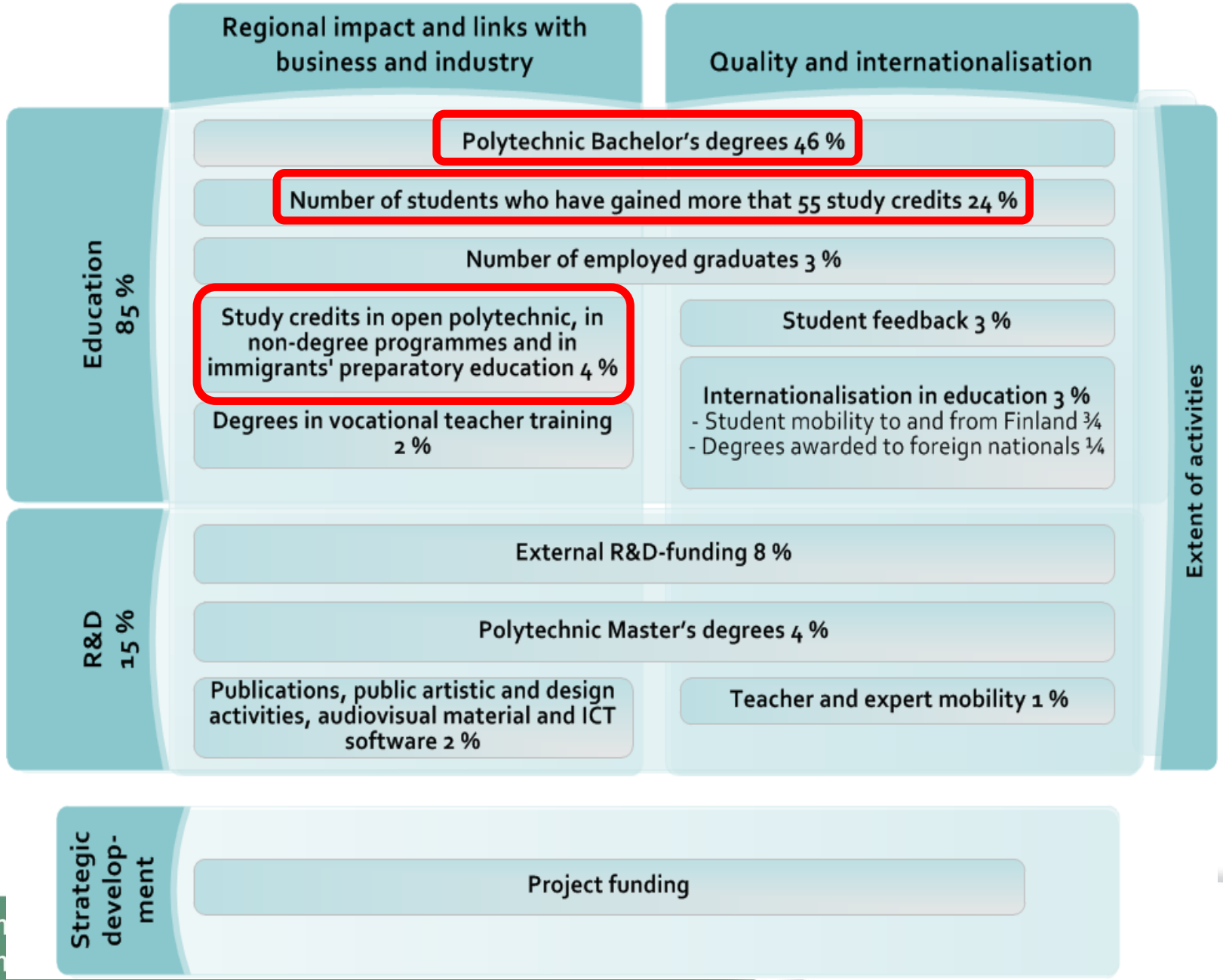
The Finnish Higher Education System: two sectors

- **University sector**
  - 14 research universities, by universities act
  - Student enrollment 168 000, (114 000 FTE) , including 18 000 doctoral
  - All institutions funded by the state
  - degrees to be conferred by each university enacted by government decree
- **Polytechnic sector** [universities of applied sciences] (est. in the mid-1990s)
  - Operation permit from government, lists degrees to be conferred
  - 24 from 1.1.2014
  - Student enrollment 148 000, (114 000 FTE)
  - Institutions partly funded by the state, partly by municipalities (state only from 2015-)
  - Regional development tasks
  - Bachelor degrees (vocational and professional degrees)
  - (Professional) Master's degrees in selected fields

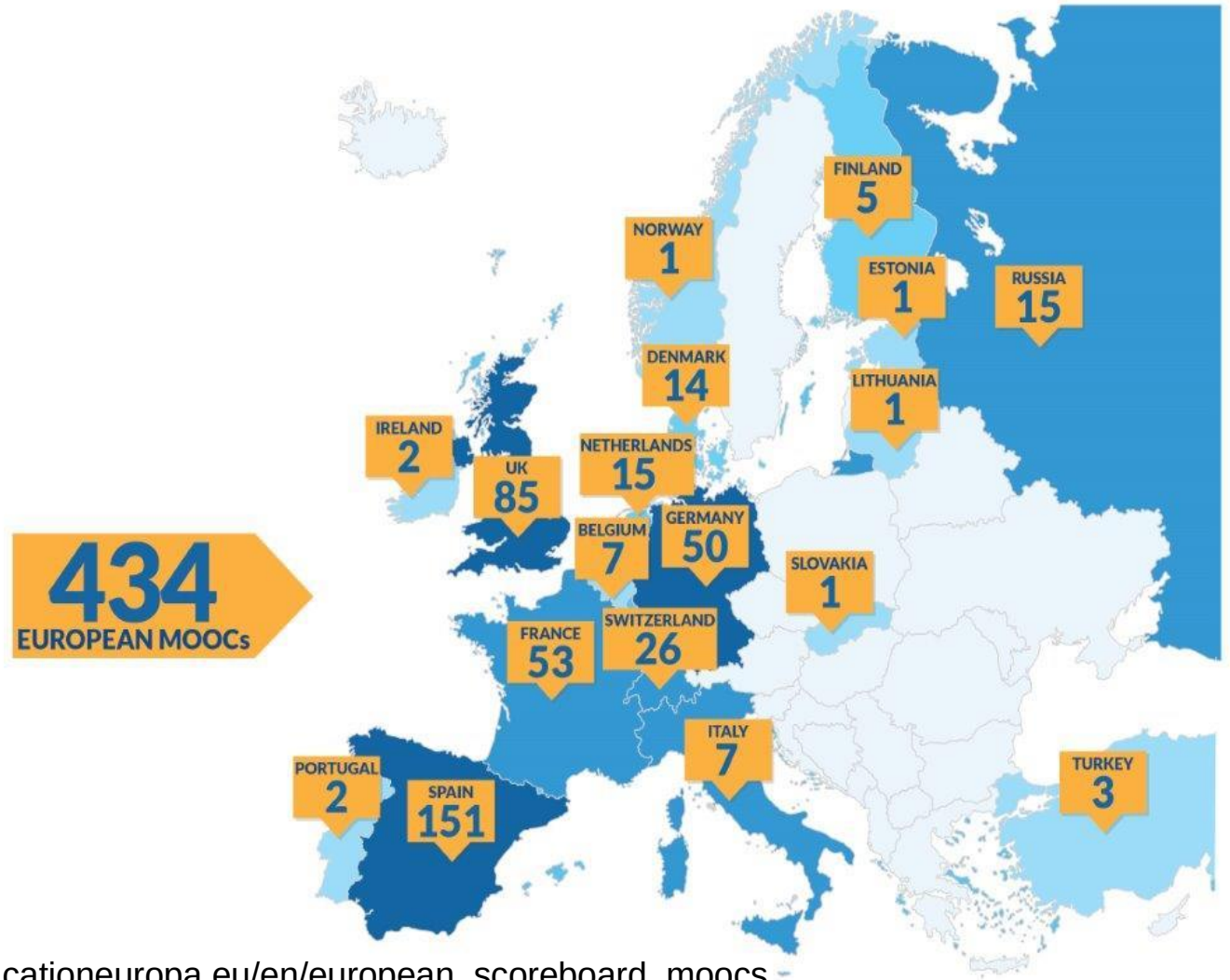
Universities core funding from 2013



Polytechnics core funding from 2014



European MOOC scoreboard



http://openeducationeuropa.eu/en/european_scoreboard_moocs

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MOOCs, cMOOCs, xMOOCm, VOOCs, SOCs, SPOCs, OERs

...

Commonly raised issues

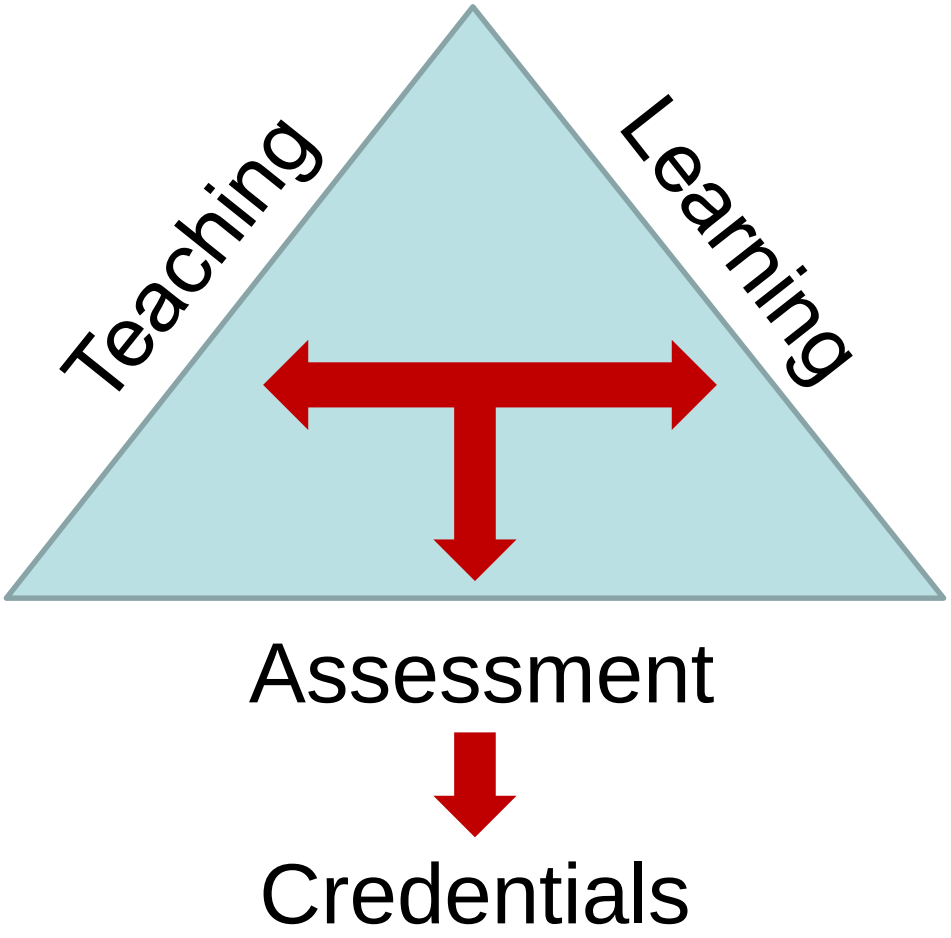
- Free to participate in or free to use as material (and develop further)
- Massive dropout rates in MOOCs
  - but why count dropouts when most are drop-ins in the first place?
- Promise of (global) equity
  - but educated, first-world males seem to dominate in participation?
- Credit for MOOCs? New types of credentials
- IPR issues
- Unbundling
  - of degrees - an “iTunes moment” for education ahead?
  - of roles of organizations (HEIs)
- Business models?
- Platforms? Do we need a ”national platform”?
- MOOCs promise great opportunities for self guided learning!
  - but we will need guided learning too

Why MOOCs, OERs?

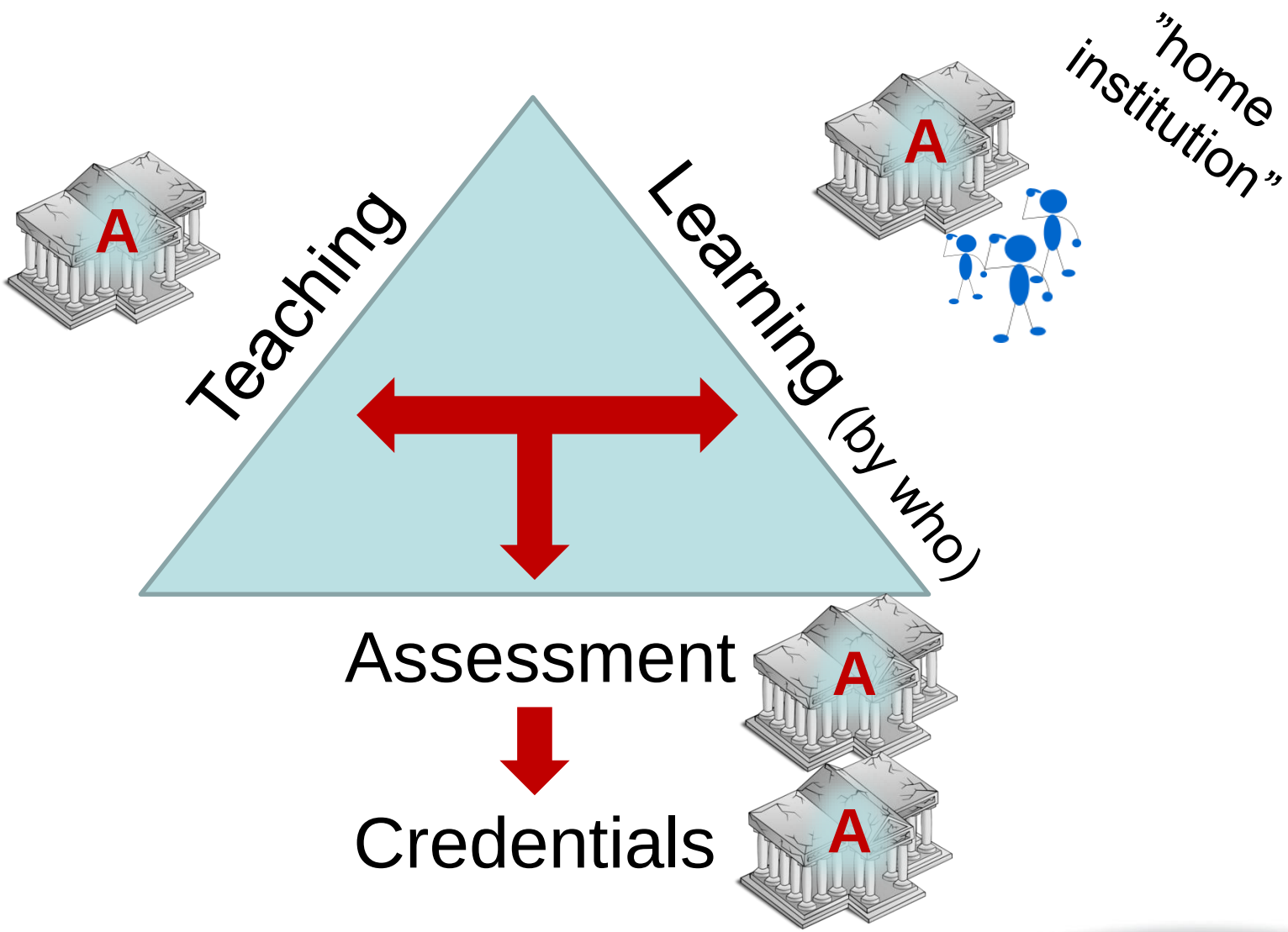
(or in some sense open/shared educational content) from the point of view of an institution / national policy

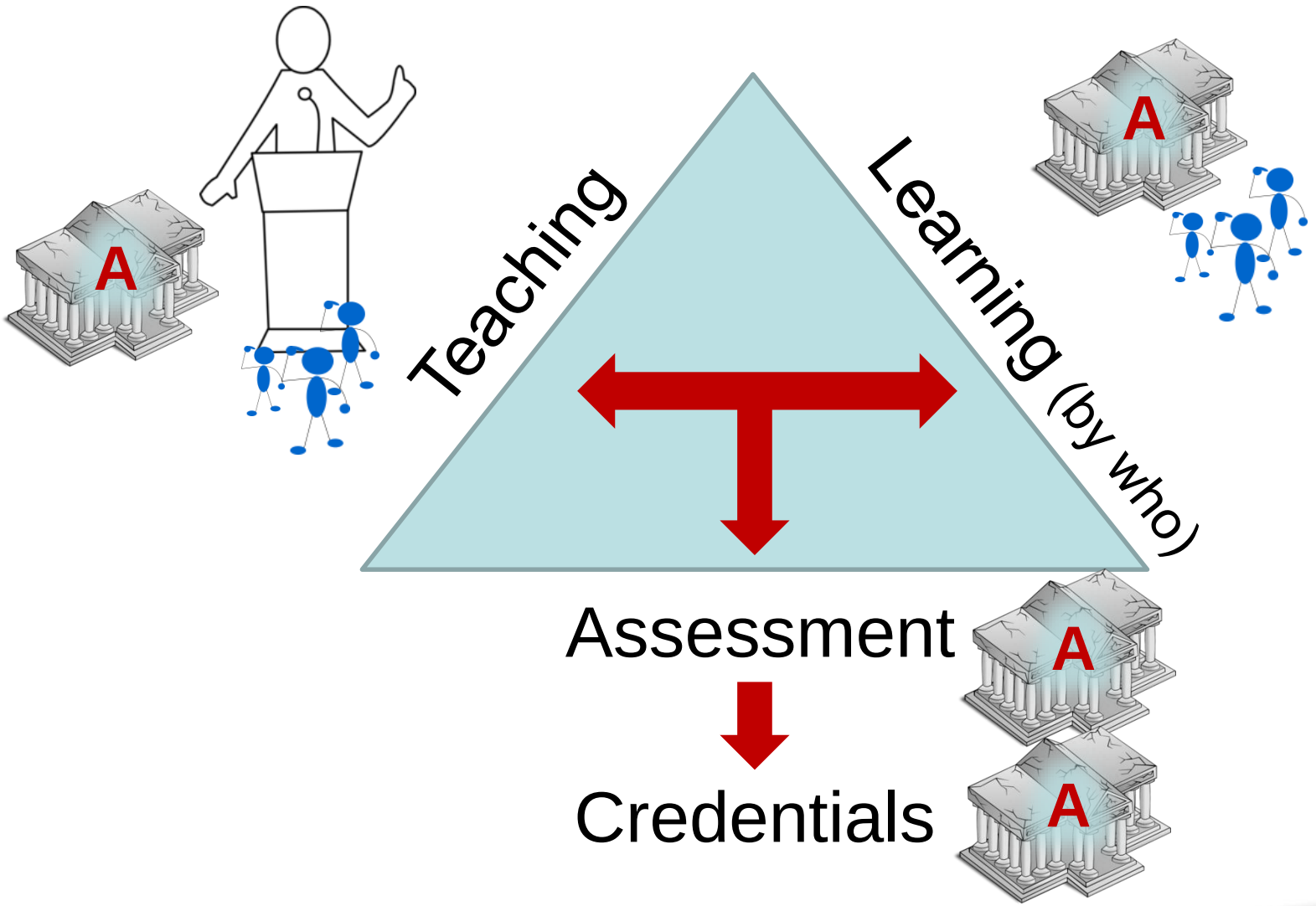
	Global MOOC sphere	Local/national sphere (language!)
Provision	**Motivation:** - visibility - global recruitment - global equity (?)	- outreach - "open university education" - better pedagogy for degree students … ?
Use (*by institution*)	**Motivation:** - use of quality resources - more offerings to students, internationalization	

What is Higher Education?

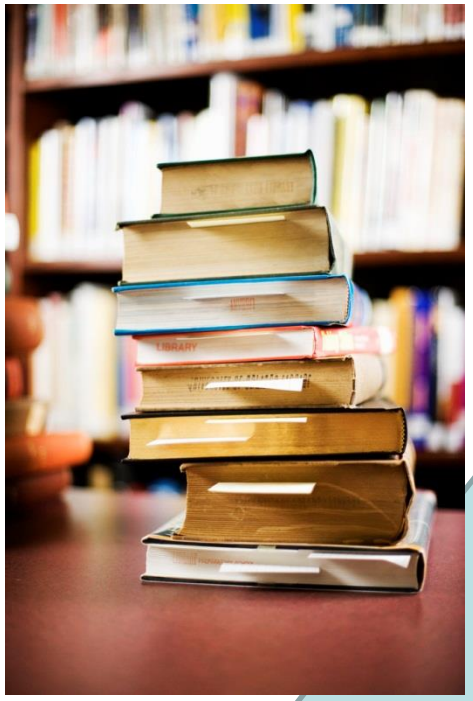


adapted from http://es.scribd.com/doc/207956402/EMOOCs-2014-Policy-Track-2-Uvalic-Trumbic


"home institution"
A
A
Teaching
Learning (by who)
Assessment
A
Credentials
A


A
Teaching
Learning (by who)
A
Assessment
A
Credentials
A

guidance,
facilities

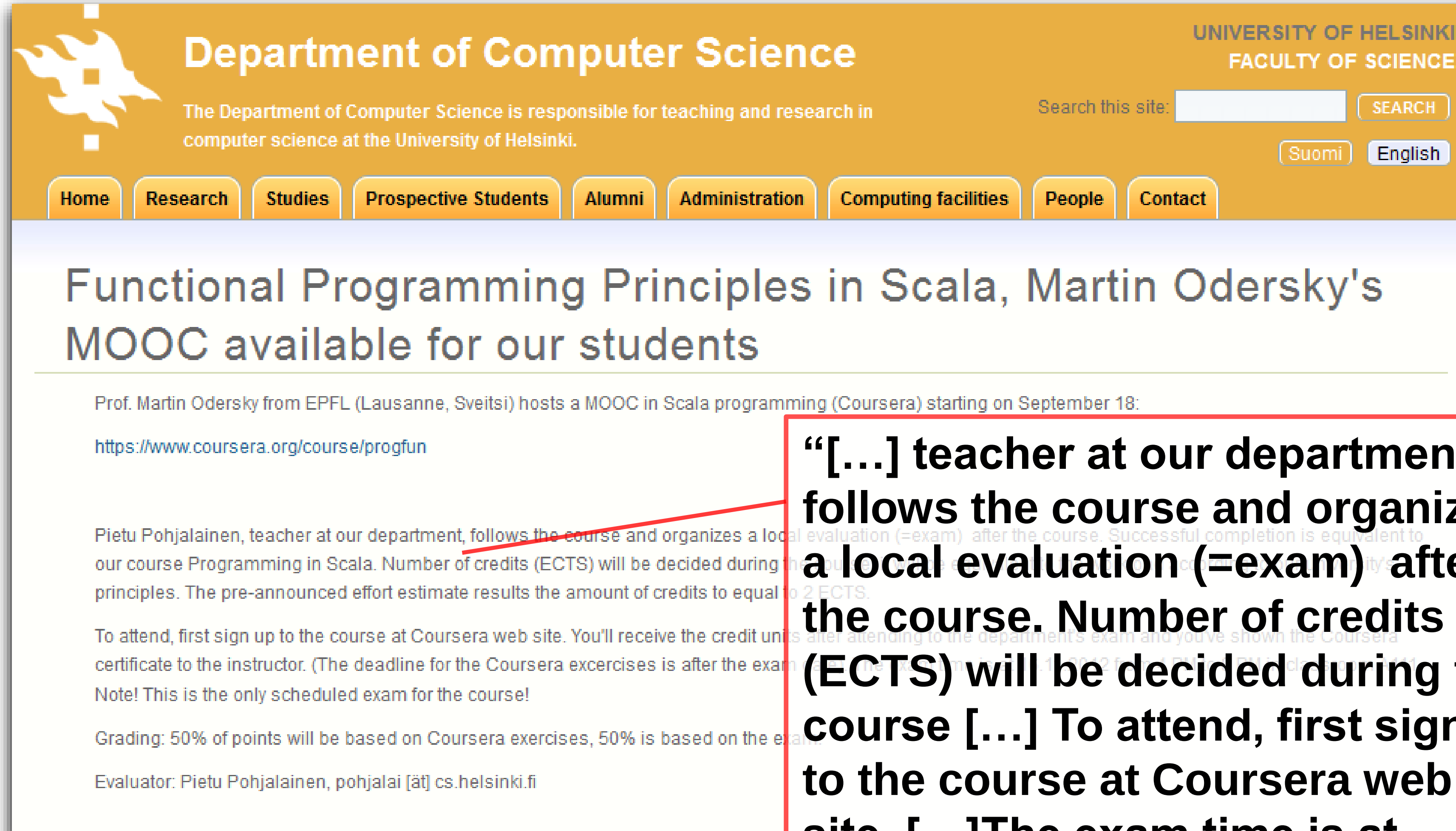


Learning (by who)

Assessment

Credentials

The new Textbook?



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FACULTY OF SCIENCE
Department of Computer Science
The Department of Computer Science is responsible for teaching and research in computer science at the University of Helsinki.
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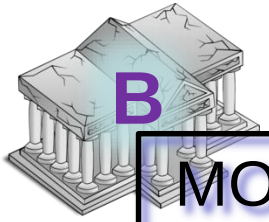
Functional Programming Principles in Scala, Martin Odersky's MOOC available for our students
Prof. Martin Odersky from EPFL (Lausanne, Sveitsi) hosts a MOOC in Scala programming (Coursera) starting on September 18:
https://www.coursera.org/course/progfun
Pietu Pohjalainen, teacher at our department, follows the course and organizes a local evaluation (=exam) after the course. Successful completion is equivalent to
our course Programming in Scala. Number of credits (ECTS) will be decided during
principles. The pre-announced effort estimate results the amount of credits to equal to 2 ECTS.
To attend, first sign up to the course at Coursera web site. You'll receive the credit units after attending to the department's exam and you've shown the Coursera
certificate to the instructor. (The deadline for the Coursera excercises is after the exam
Note! This is the only scheduled exam for the course!
Grading: 50% of points will be based on Coursera exercises, 50% is based on the exam.
Evaluator: Pietu Pohjalainen, pohjalai [ät] cs.helsinki.fi

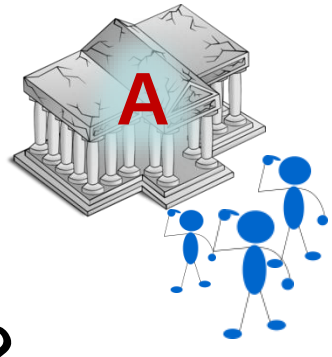
"[…] teacher at our department, follows the course and organizes a local evaluation (=exam) after the course. Number of credits (ECTS) will be decided during the course […] To attend, first sign up to the course at Coursera web site. […]The exam time is at 16.11.2012 from 4 PM to 8 PM in classroom A111"

http://www.cs.helsinki.fi/en/news/7



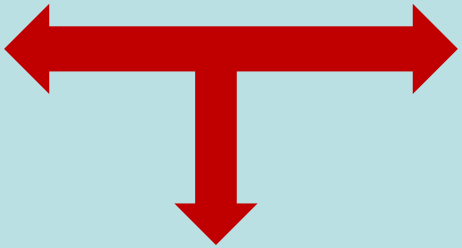
MOOC
or
OER

guidance,
some facilities

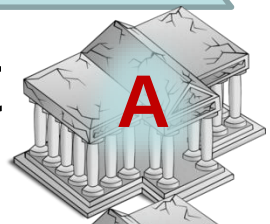


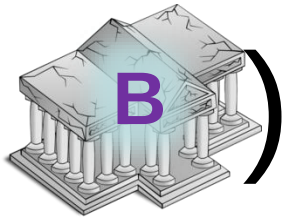
Teaching

Learning (by who)



Assessment



(+ 

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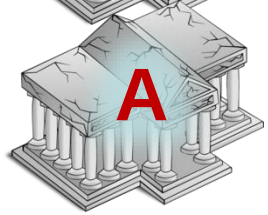
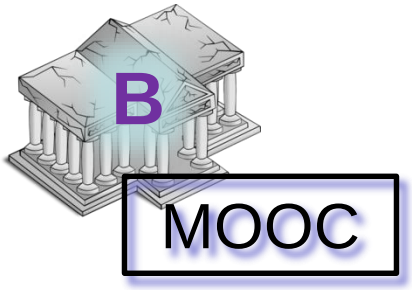
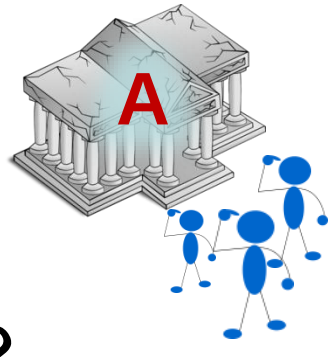
Credentials





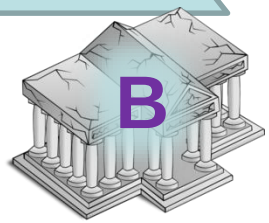
guidance,
some facilities?



Teaching

Learning (by who)

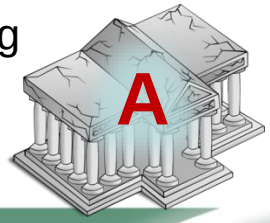
Assessment



!?

Assessment of prior learning

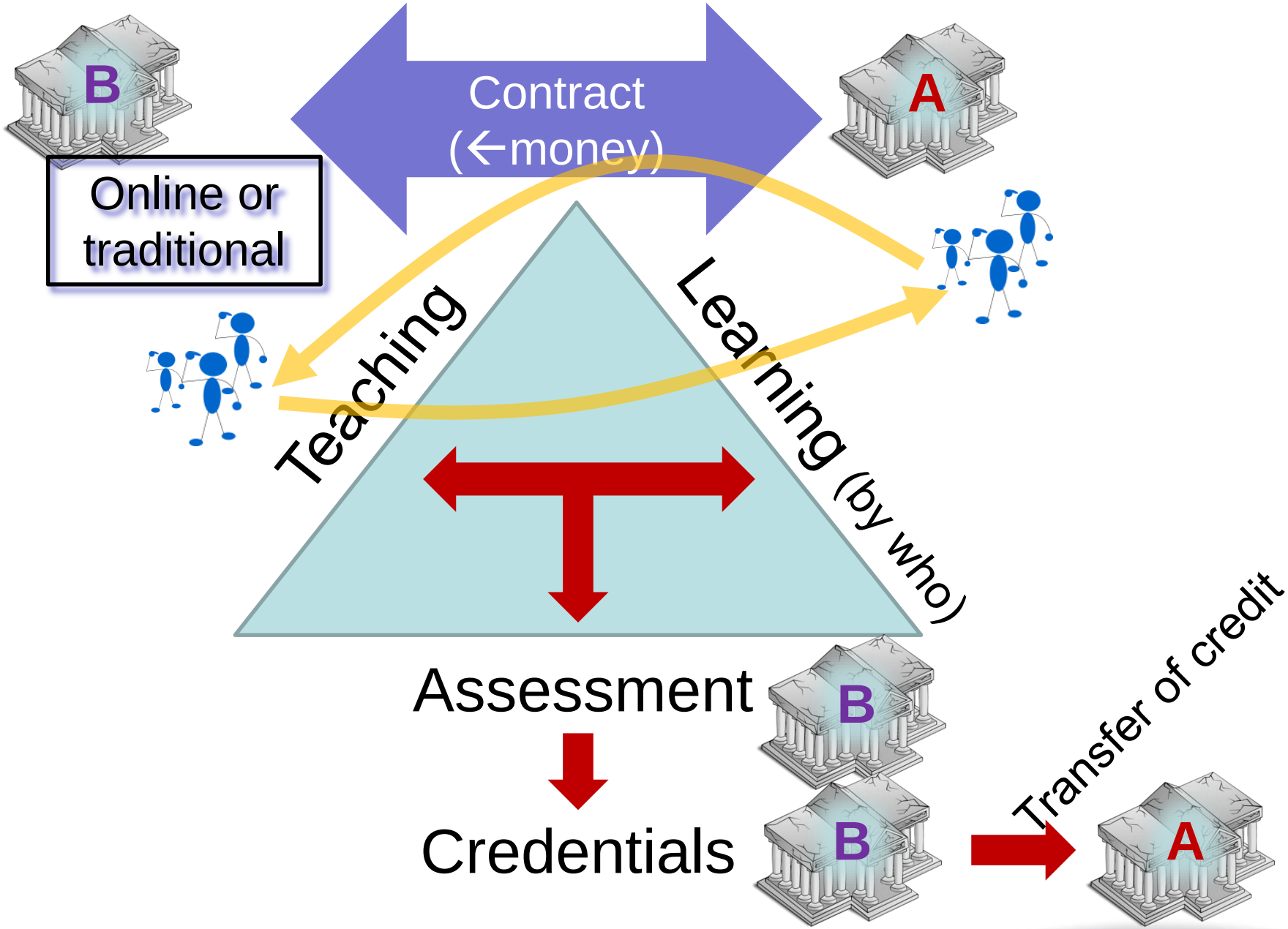
Credentials



Finnish Virtual University

2001 - 2010†

- Finnish Virtual University was founded in 2001 as a consortium of all Finnish universities
- At first provided support services for teachers offering online courses
- **The goal was to make modules with teaching from many universities possible and available to students.**
- At first funded by the ministry, then by universities.
- The consortium was disbanded when universities didn’t want to fund it anymore
- Some services (and contracts) remain:
  - The JOO agreement offers to take separately named courses at other Finnish universities. You may apply to take courses via JOO agreement on the electronic application www.joopas.fi.

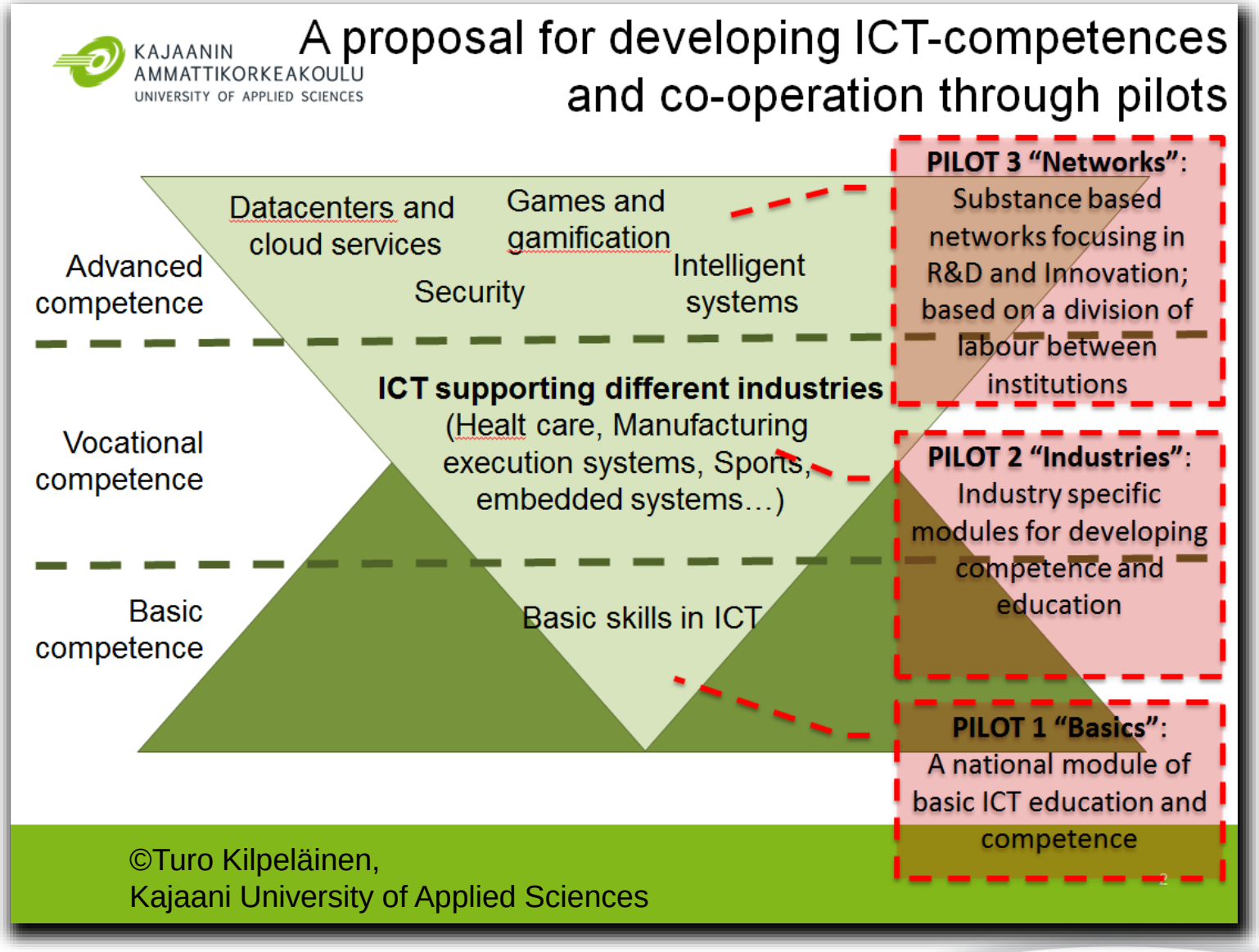

B
Contract
(←money)
A
Online or
traditional
Teaching
Learning (by who)
Assessment
B
Credentials
B
Transfer of credit
A

Going further? - example 1

- **Structural development project, Universities Finland UNIFI: report on Social Sciences 2011***:
  - ”Alliances or networking at national or regional level and finding each institutions own research and teaching profile are opportunities that should continue to be developed. **Commonly organized education over the network of HEIs teaching social sciences should also be considered, as it can free up resources for research. Perhaps it is not necessary to teach basic courses in every university”**

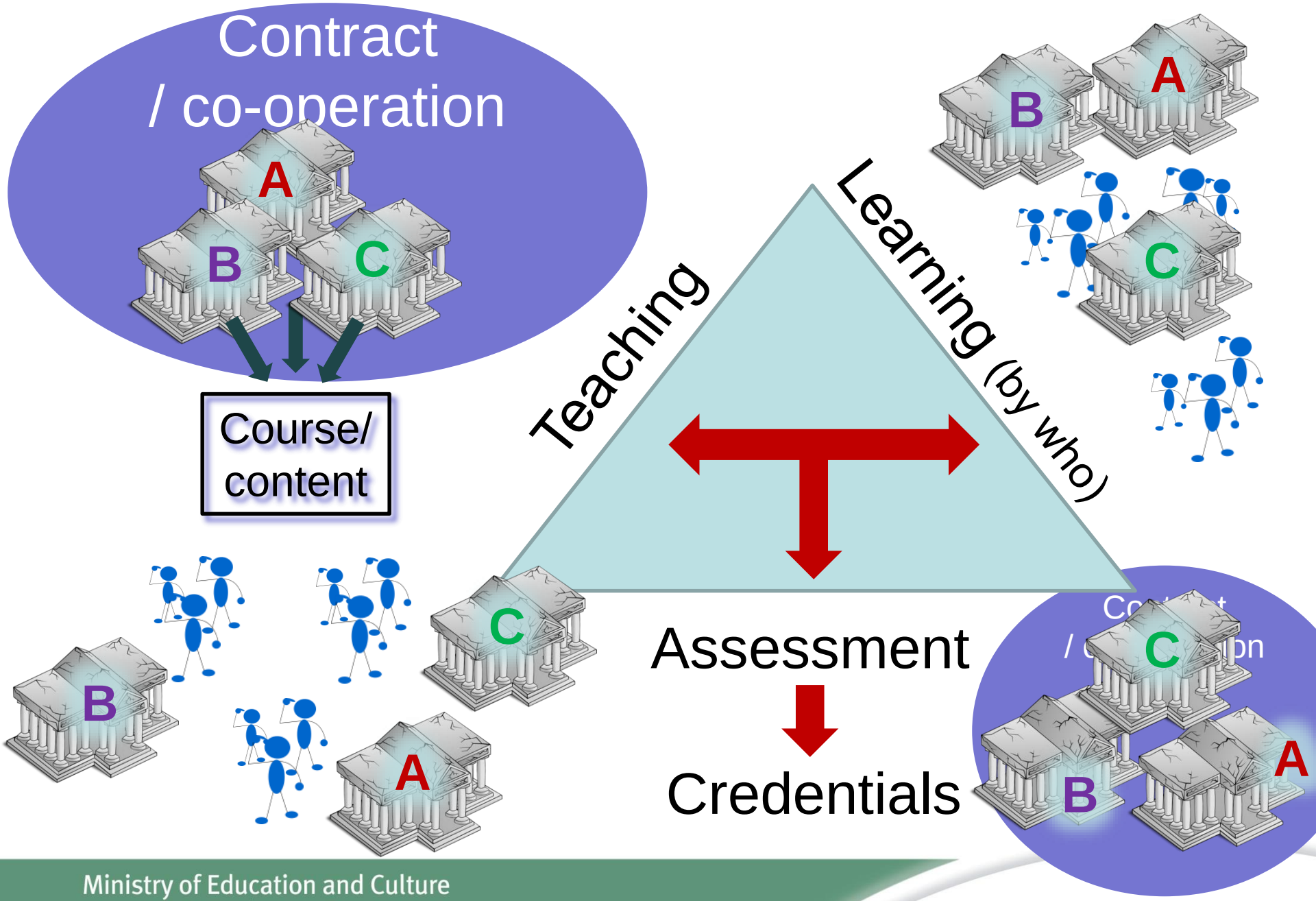
* http://www.rectors-council.helsinki.fi/raportit_ja_julkaisut/RAKE_2011/UNIFI_RAKE_Yhteiskuntatieteet_loppuraportti_liitteineen.pdf
(translation & emphasis by IH)

example 2


KAJAANIN AMMATTIKORKEAKOULU
UNIVERSITY OF APPLIED SCIENCES
A proposal for developing ICT-competences and co-operation through pilots
Datacenters and cloud services
Games and gamification
Security
Intelligent systems
Advanced competence
Vocational competence
Basic competence
ICT supporting different industries (Healt care, Manufacturing execution systems, Sports, embedded systems…)
Basic skills in ICT
PILOT 3 "Networks": Substance based networks focusing in R&D and Innovation; based on a division of labour between institutions
PILOT 2 "Industries": Industry specific modules for developing competence and education
PILOT 1 "Basics": A national module of basic ICT education and competence
©Turo Kilpeläinen,
Kajaani University of Applied Sciences

Example 3:Computer Science / ICT field in Research Universities?

- Ideas have been proposed for developing a common set of courses for ICT education for all universities to use in Computer Science education
- Some would provide, others only use
- Those switching from providing their own teaching to using teaching provided by others, would be able to reallocate resources
- MOOC –like courses /material & flipped classroom could be a tool here


Contract
/ co-operation
A
B
C
Course/
content
Teaching
Learning (by who)
B
A
C
C
B
A
Assessment
Credentials
C
B
A

Why MOOCs, OERs?

(or in some sense open/shared educational content) from the point of view of an institution / national policy

	Global MOOC sphere	Local/national sphere (language!)
Provision	**Motivation:** - visibility - global recruitment - global equity (?)	- Co-operation, division of labor? - "open university education" - outreach
Use (*by institution*)	**Motivation:** - use of quality resources - more offerings to students, internationalization	

Issues

- What is different now vs. 10 years ago in the Finnish case?
- Opposing forces driving differentiation, division of labour, profilization of HEIs?
- IPR…
- What is needed to fully benefit from co-operation in organizing teaching?
  - Curricula would need to be harmonized, at least up to a point
  - Contracts/trust on arranging studies between HEIs would need to be established: how labour/cost/benefit are divided?
  - Would this really result in rising productivity?
  - This still not be possible in every field.
- If this would happen massively, how would things look like from the point of view, say, of our output based funding model?

Other uses of MOOCs or ”MOOC like” teaching

- MOOCs & admissions
  - Admission to degree student status based on a MOOC performance + proctored exam & interview
- Open University/Polytechnic Education
  - meaning education that is a part of a curriculum of degree students, but a study right is given to a small part of education, typically a single course (5-10 ects). A fee of 10€/ECTS can be charged. Additional funding through the funding model.
  - A lot of online education at the moment
  - could be provided "MOOC style"?
- Adult education, life long learning, outreach
- Same materials as are used for degree students could be used in these

Need for policy?

- Is there need?
  - MOOCs and credits from both Finnish and foreign institutions seem to fit the system as it is today?
- Incentives for co-operation?
  - Exist already
- National support structures / infrastructure?
  - platform?
- Openness?

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Finnish approach to Open Science and its sustainability

- **Digitalization of science** multiplies the amount of data
- Responding to grand challenges and changes in society requires **multidisciplinary and cross sectional approach**
- We Need to ensure the competitiveness of Finnish scientific environment
- Solutions include both hard and soft elements
  - Identification of needs and benefits for individuals, groups and society
  - Identification of problems and finding solutions
  - Financial and other support and incentives on a cost-efficient way
  - Building up infrastructures, harmonization of metadata etc.
  - Changing cultures, trust building
  - Collaboration and open dialogue essential

Open Science and Research 2009-2017

Research Data Survey Project 2009-2011

- Roadmap

National Research Data Project 2011-2014

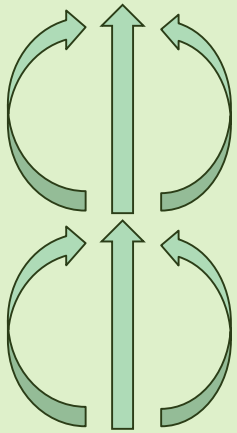
- Services
- Metadata
- International collaboration
- Awareness

Open Science and Research Project Roadmap 2014

- National and international collaboration
- Change of culture
- Open Science Handbook
- Services for preservation
- Services for metadata
- Services for access
- Tools e.g. for identification

Open Science and Research Project Target 2017

- Open access
- Open data
- Open methods



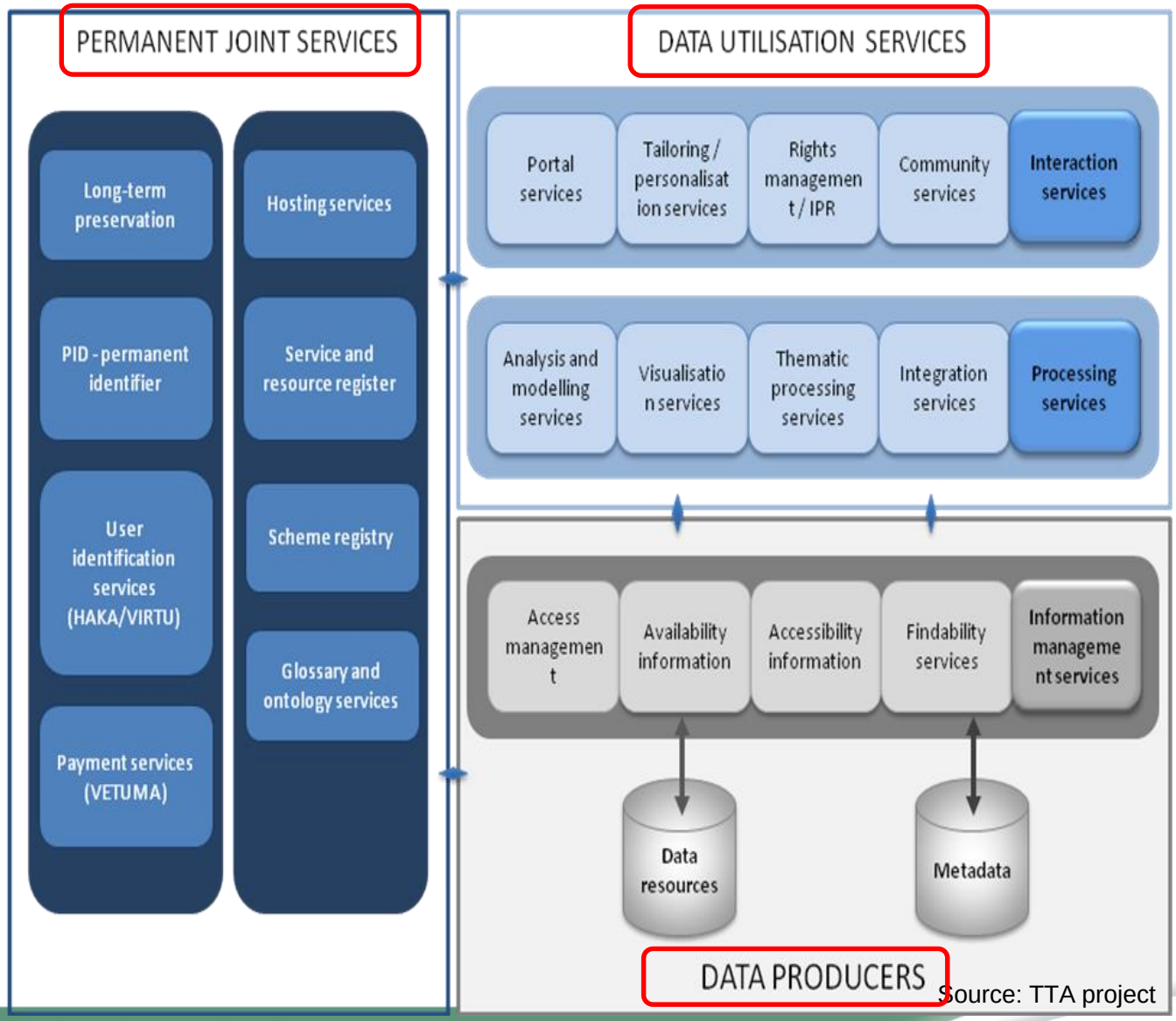
Targets for Open Science and Research Initiative (ATT)

- To incorporate open science and research to the whole research process **to improve the visibility and impact of science and research** in the innovation system and society at large
- To foster the research system in Finland towards better competitiveness and higher quality, **transparent, collaborative and inspirational research process** should be promoted.
- The measures **promote (1) open publications, (2) open research data, (3) open research methods and tools**, as well as increasing skills and knowledge and support services in open science domain.
- Contributions from all research system actors are welcome to **change the research culture** towards openness.
- Finland will engage in **international collaboration** to promote open science and research.

Open Science: Gradual and practical approach in Finland

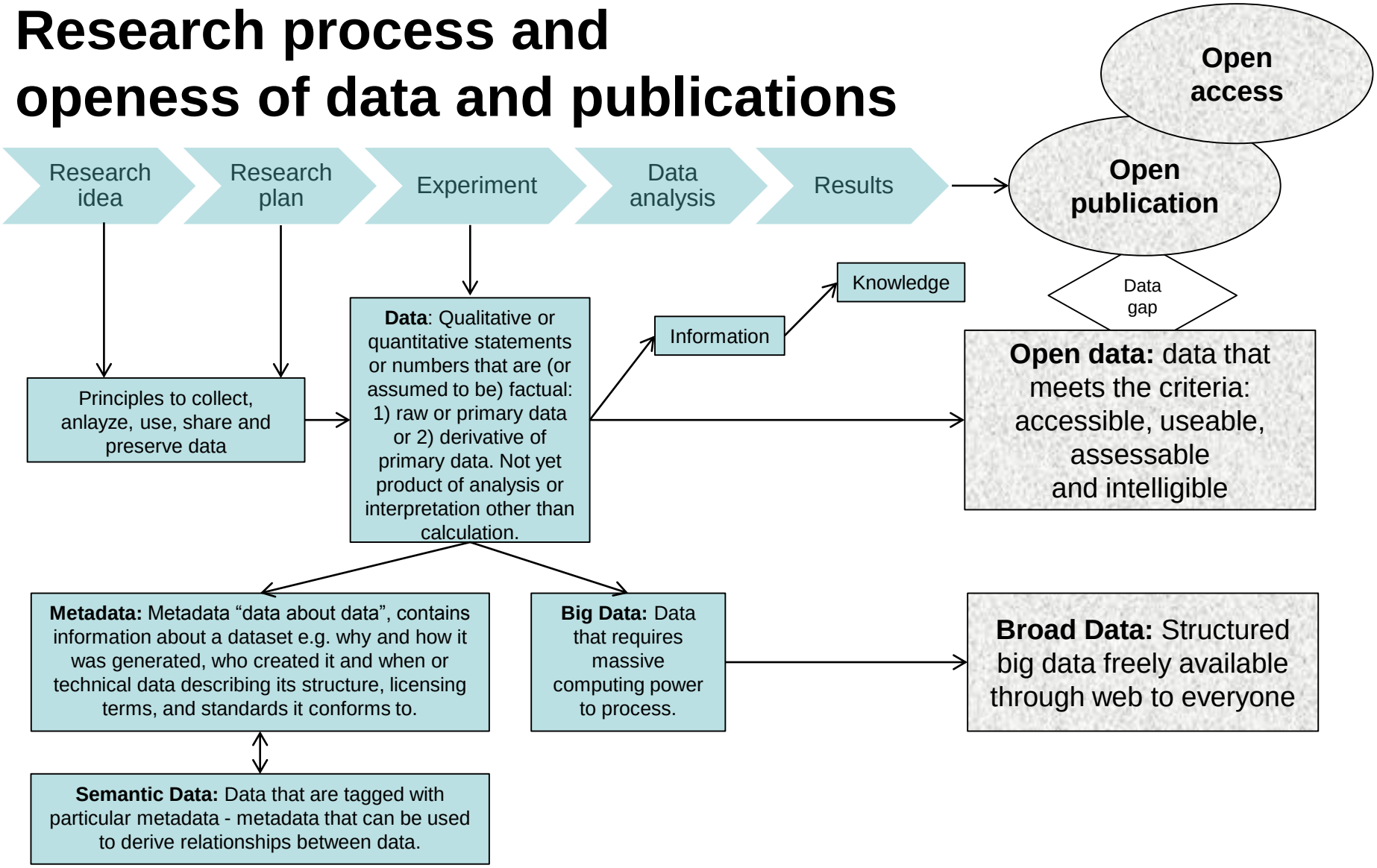
Challenges	Solutions
Creating ownership	ATT and KDK initiatives engaging key actors at different organizational levels
Availability of infrastructures	Infrastructure roadmap including Open Science, funding for infrastructures and services
Harmonization of metadata	Developing standards
Open access, licence policy	Proposals submitted to the Ministry, implementation to follow
Cultural change towards openness	Seminars, training, guidance (education of researchers)
International collaboration	Standardization, making use of researchers' networks, active role in key initiatives

Information infrastructures for open data – a Finnish example



Source: TTA project

Research process and openess of data and publications



Source for terminology: Science as an open enterprise, The Royal Society 2012, http://royalsociety.org/uploadedFiles/Royal_Society_Content/policy/projects/sape/2012-06-20-SAOE.pdf

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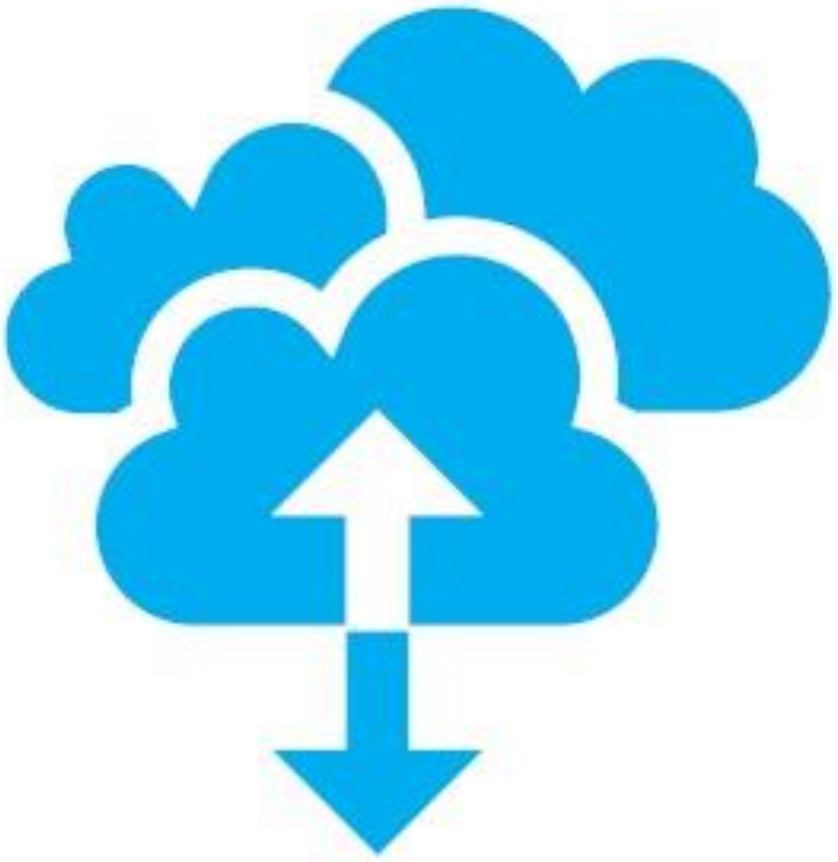
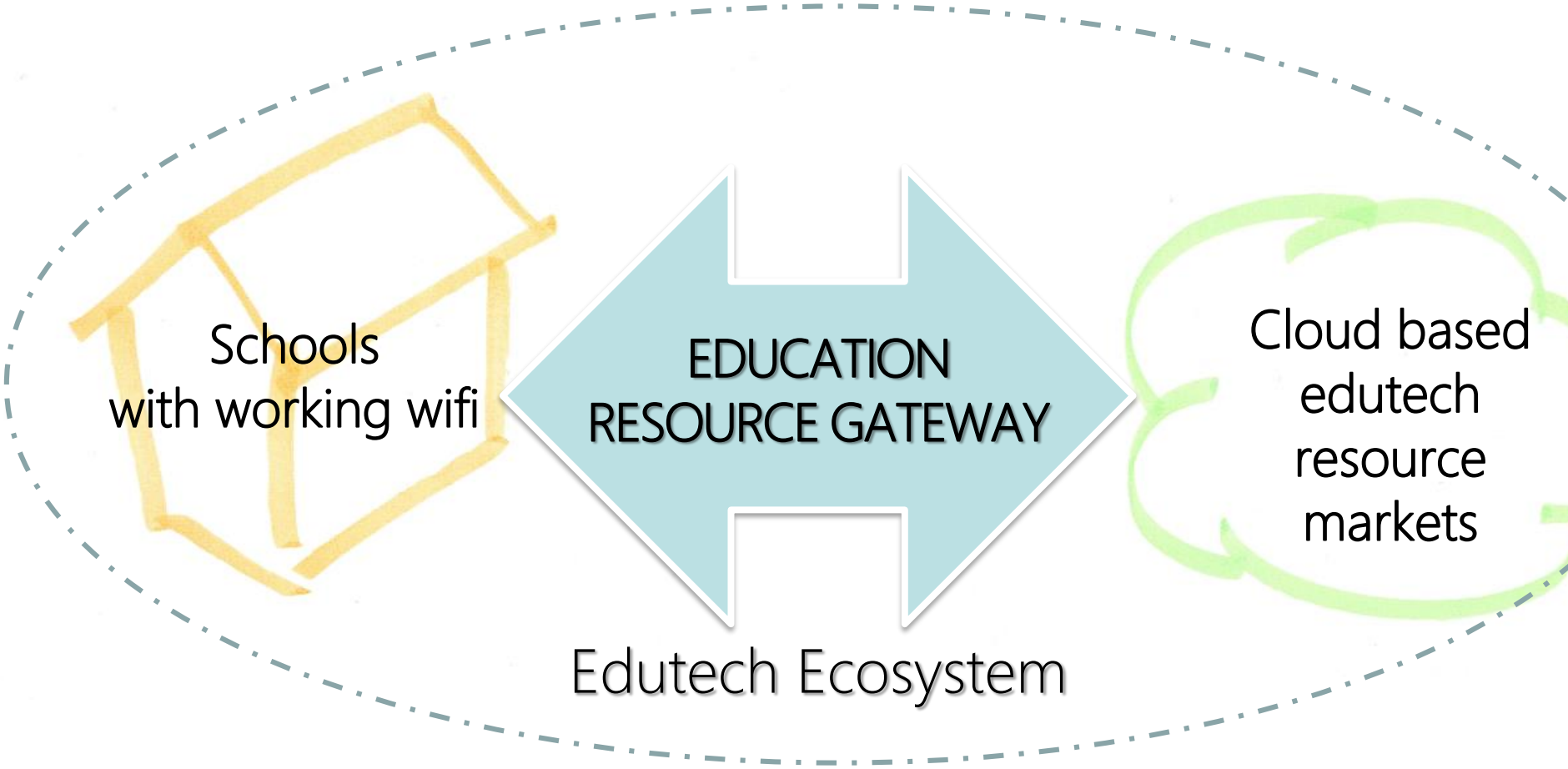
Gateway to Digital Learning Resources in the Cloud



Current situation in digital learning in primary and secondary education

- Some schools use modern digital learning resources extensively, but by large,
- Finnish pupils use less digital resources for learning than their European peers.
- Too much effort is needed for acquisition and deployment of digital learning resources by
  - teachers
  - principals
  - municipality ICT-services
  - providers of digital learning resources
- **This effort should be spent on fostering learning and meaningful activities!**

Aim: An easy to use channel between service providers and schools



EDUCATION RESOURCE GATEWAY

1. Portal for sharing ideas about the use and development of educational cloud services
2. Marketplace or bazaar for service providers and consumers
3. Piloting the use of public ICT infrastructure and services
   (Finnish X-road, identity management, identification)

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Thanks!