

Developing international joint studies for engineering education



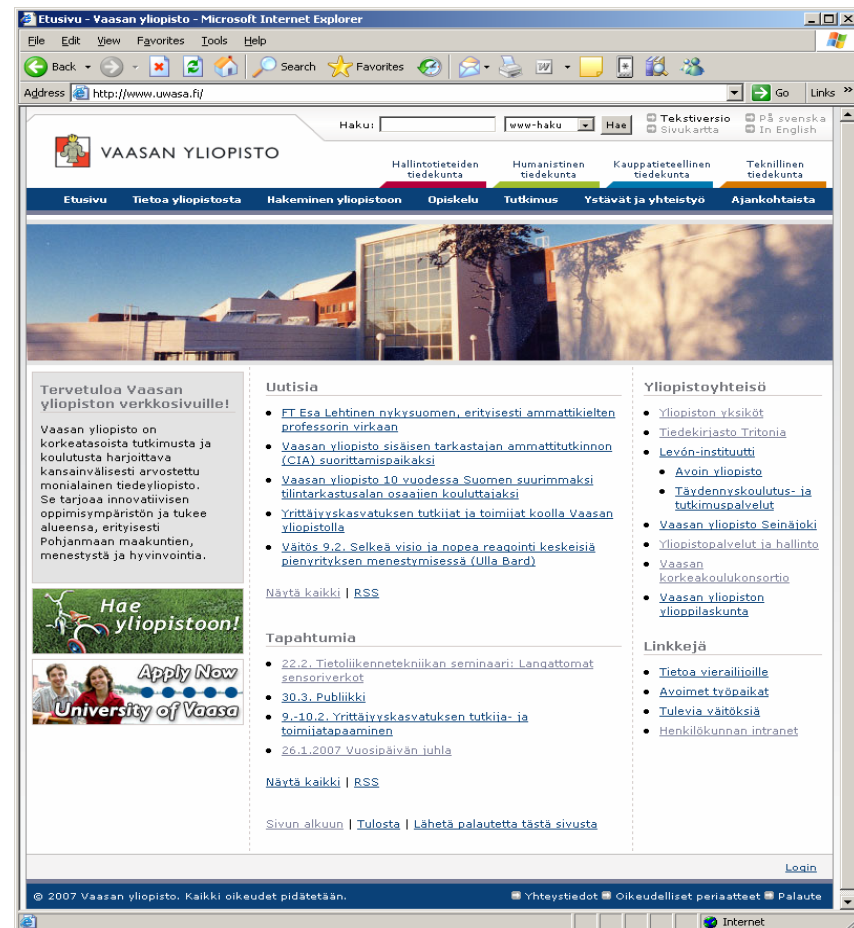
- *Kimmo Salmenjoki, Jarmo Alander, Helmut Dispert, Nadir Ould Kheassal*
- **University of Vaasa, Department of Computer Science, Vaasa, Finland**
- **University of Applied Sciences Kiel, Kiel, Germany**
- **Okanagan College, BC, Canada**

-> Joint studies in Engineering / BSOU

BSN Tallinn 26-27.2.2007

Possibilities- or threats!?

- Global <- local
- Global -> local
- Regional
- Vaasa/Ostrobothnia /Finland...
- ...Sweden / EU/ beyond...
- EU: Bologna
- ->BSOU
- ->within BSN ?



<http://www.uwasa.fi/>

Trends: EU supported regional projects



- EU is strongly affecting all the major actions of the universities, especially the interchange and exchange of students and teachers
- continuing development of higher technology and industry with evenly distributed economical growth within EU
- the Bologna declaration towards an international arena of educational exchange
- Aggreditation (or quality control)
<http://www.koulutuksentarvioin.tineuvosto.fi/> in Finland (Vaasa in 2008/2011)



<http://www.uwasa.fi/kv-asiat/english/>

Trends: FIN Ministry / universities



- At the moment an endless field of Master programs (beauty contents)
- Yliopistojen palvelukeskus / Vaasa (2007-)
- Programs in English, ...



http://www.minedu.fi/OPM/Koulutus/artikkelit/Korkeakoulujen_rakenteellinen_kehittaminen/index.html

Trends: Technical sciences/ Finland



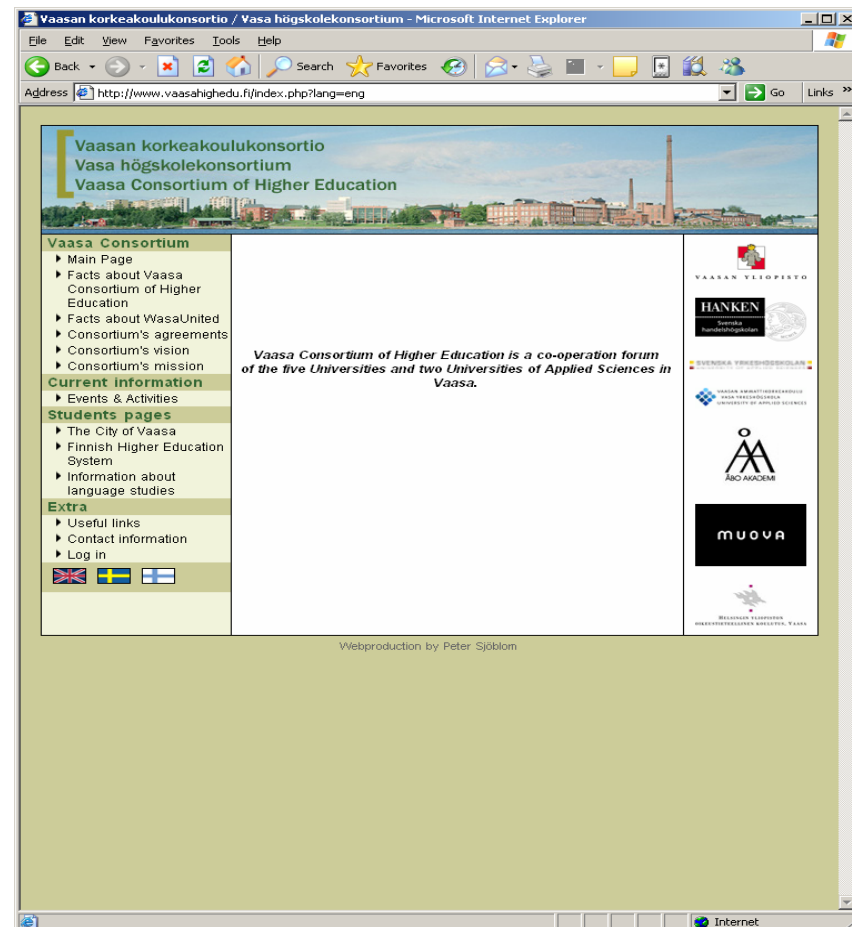
- Internationalization / VUNI: about 200 students in/out, dozens of degree students
- Teacher exchange and projects in Erasmus, EU-US Cooperation Programme in Higher Education and Vocational Education (FIPSE)



http://www.tek.fi/tekniikastahyvinvointia/Aulangon_raportti/

History: local -> regional

- The Master of Engineering education in Vaasa jointly with the University of Technology (HUT) in Helsinki during the years 1991-2003, own localised Master program will be hosted in Vaasa started in autumn 2004. Towards this end, the curriculum of the engineering education was fully reviewed during the year 2003-2004
- Bologna model for two-tier education consisting of three plus two years of study on Bachelor and Master levels already in 2005
- Comparison of the Bachelor and Master level degrees. The group suggested so called "bridge studies" (about 40 ECTS) consisting mainly natural science courses such as mathematics and physics. In 2006- we have developed further specialized "study paths" to interlink the studies in different units in Vaasa

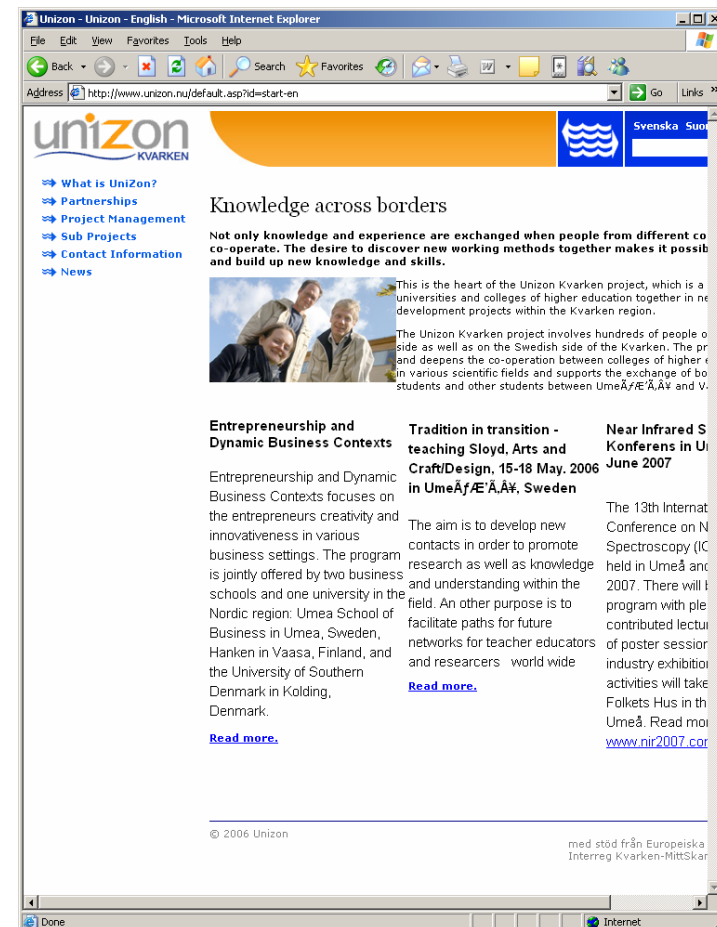


<http://www.vaasahighedu.fi/>

Joint Study with University of Umeå



- The Joint study subproject is a part of the Unizon Kvarken activities that has been running as regional EU projects in Interreg IIIa from the year 2001 until 2006, and continues 2007...
- university units in the Kvarken region, containing the regions Norrbotten in Sweden and Ostrobothnia in Finland
- to plan and oversee common educational activities in engineering education regionally. An initial essential task is to get together the teachers and experts on both sides of the Gulf of Bothnia
- online and distance learning (ODL) teaching models and methods
- ground work, which has now taken place in both universities, at faculty and departmental levels, should be expanded to involve pairing of teacher's to action on common courses or modules



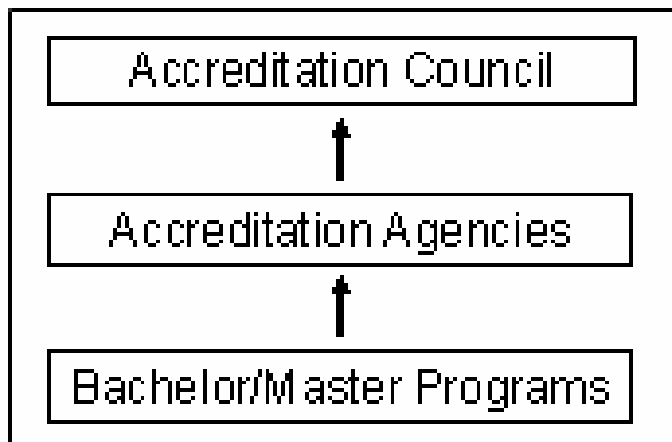
<http://www.unizon.nu/>

Joint module on intelligent systems

- A module contains courses from both sides of the Kvarken, some of the courses being ordinary ones while some are joint ones. In a module some parts may also be national options. The most natural structure of a joint degree is the one planned in the Bologna treaty: The B.Eng. level degree could be from the native university while the M.Eng. level degree would be the really joint one
- The experiments and experience gained with joint courses will greatly help to implement the joint module step. This level is a more institutional level and more intimately linked to curricula structure and planning. Modules may be called minors or majors in a typical degree consisting of several modules (about ten modules of about 20 ECTS)
- NOT EXECUTED- yet in Kvarken!
- A new version of this was run as an Erasmus Intensive Program in TEI of Crete in summer of 2006...

Intelligent systems module	Scope
Robotics course	5 ECTS
Embedded system architectures / Embedded systems	5 ECTS
Embedded system programming	5 ECTS
Cognition science	7 ECTS
Real Time operating systems	7 ECTS

Accreditation / planning: only time and taste

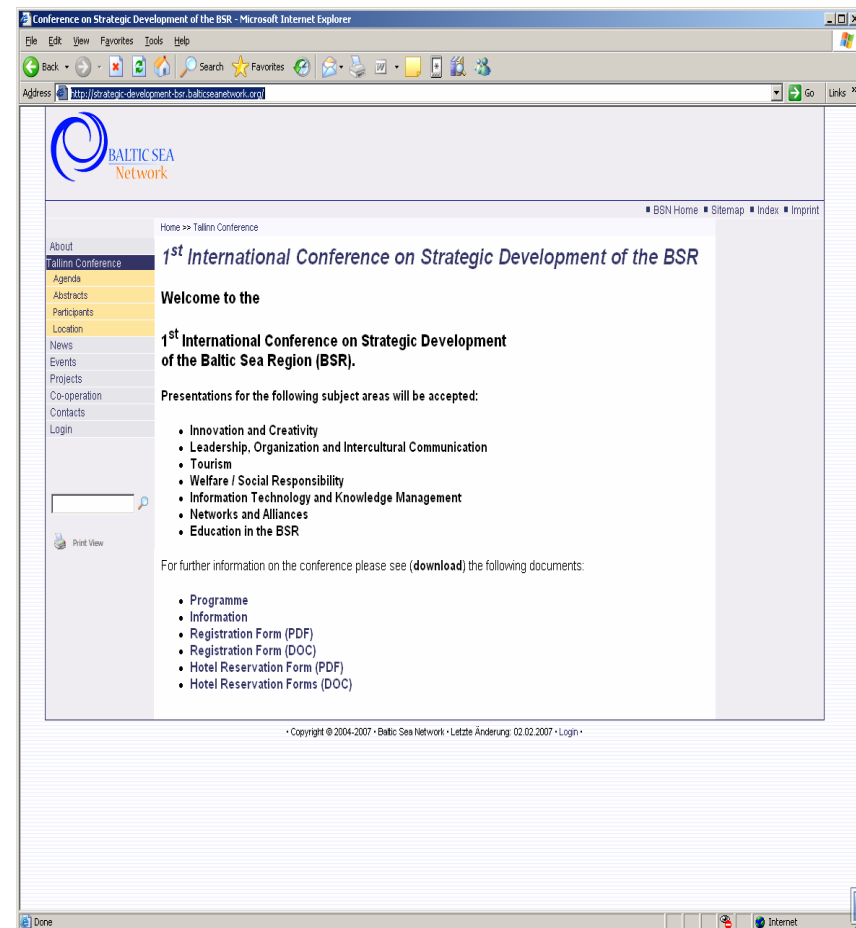


Goal	Actions
Joint courses	To plan and trial some joint courses and collaboration between the corresponding lecturers in <u>Kvarken region</u>
Joint modules	A module is loosely defined to be a set of courses concentrating on some specific topic
Dual or joint degrees	Planning and experiences during several years

structural reorganization of all universities in Finland (and locally process analysis style UML2 and <http://www.cerion.fi/> software... with collaboration...

BSN

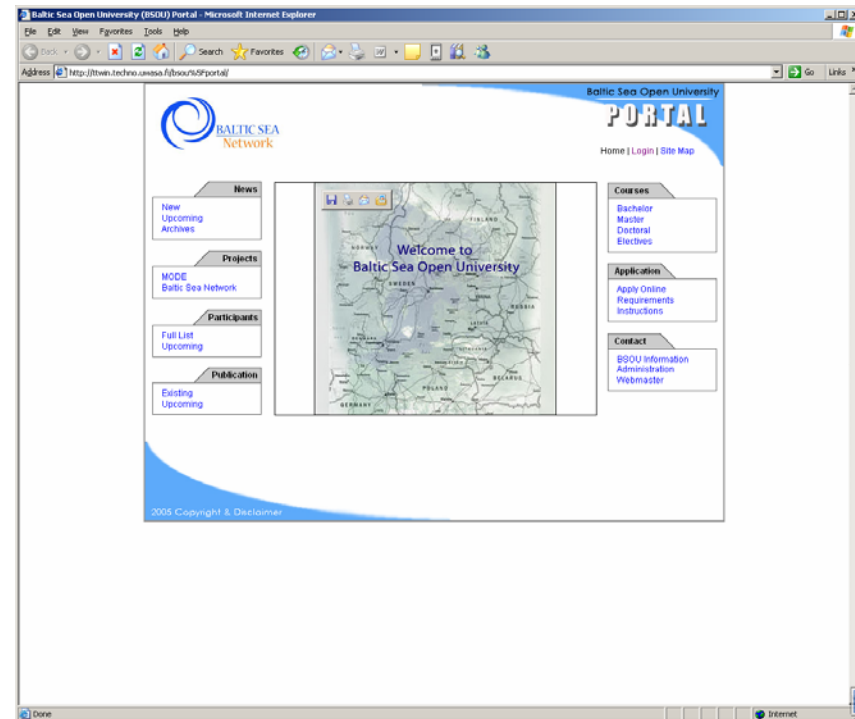
- Wide network- activities
- Workshops to conferences!
- In Kvarken:
<http://www.kvarken-mittskandia.nu>
- In Baltic Sea:
<http://www.botnia-atlantica.eu/>
- -> Money/projects would turn the wheel...



<http://strategic-development-bsr.balticseanetwork.org/>

BSOU/Bologna / ?/2010/?

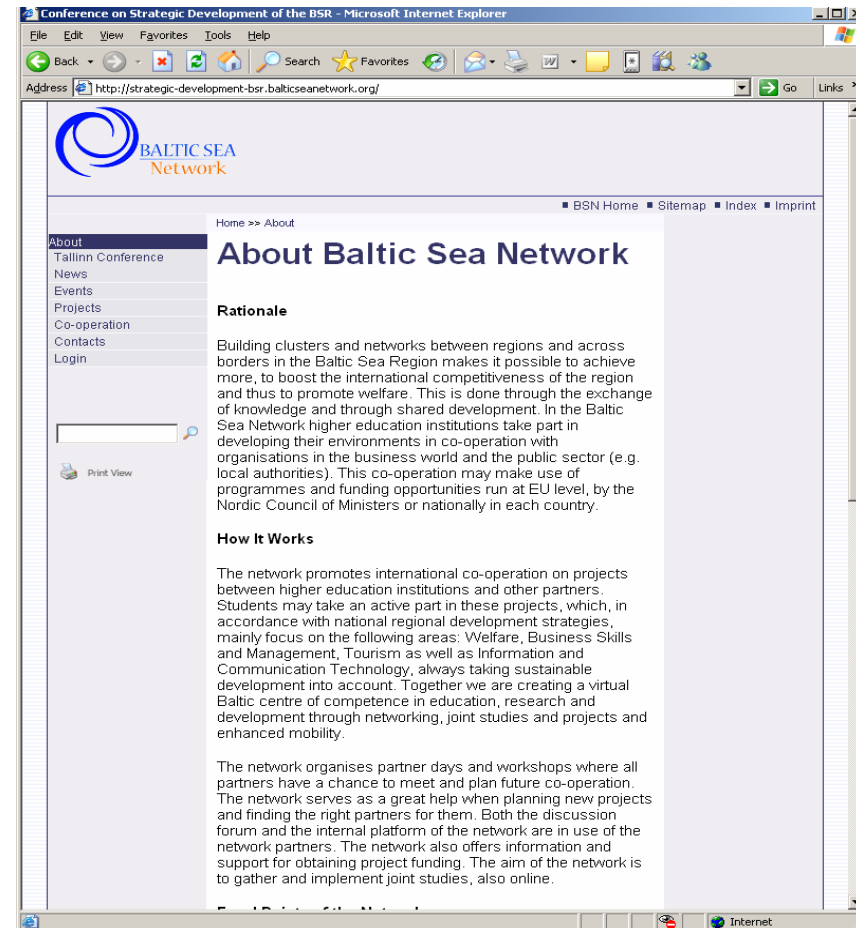
- **Information about the working group**
- *What's the name of the working group?*
- *Who has taken the initiative?*
- *Contact persons in Umeå? in Vaasa?*
- *Who have been processing the cooperation in the working group?*
- *Meetings (who have met and when)*
- **Suggestions**
- *What's the goal for the cooperation?*
- *What kind of activities are you planning?*
- *Timetable - when will the planned activities take place?*
- *Who is going to participate in Sweden and in Finland?*
- *Is the interest of cooperation mutual on both sides?*
- *What's the plan for the future?*
- *More information*
- -> 200 page end report in 02/2007



<http://ttwin.techno.uwasa.fi/bsou%5Fportal/>

BSOU

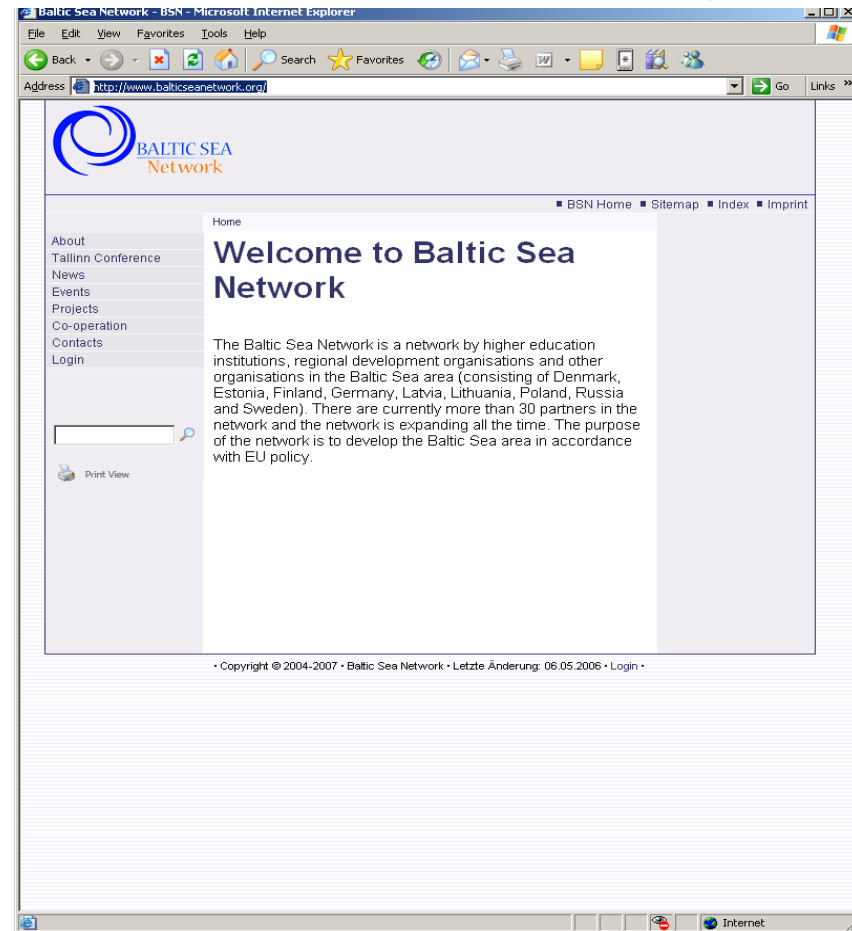
- Common curriculum: courses, modules, programs WITH FOCUS
- Focus for Computer Science Dept. /Vaasa University: information technology and telecommunications (and electrical engineering, automation, energy engineering, material sciences, multimedia, ...)
- Few partners in BSN?



<http://strategic-development-bsr.balticseanetwork.org/>

Possible alternate BSOU models:

- BUSINESS: BSVC.org -> <http://x316.bui-av.haw-hamburg.de/bsvc2006/index.php> (TRM Transregional management)
- REGIONAL: <http://www.balticseanetwork.net/>
- ORGANIZATIONAL: ... models

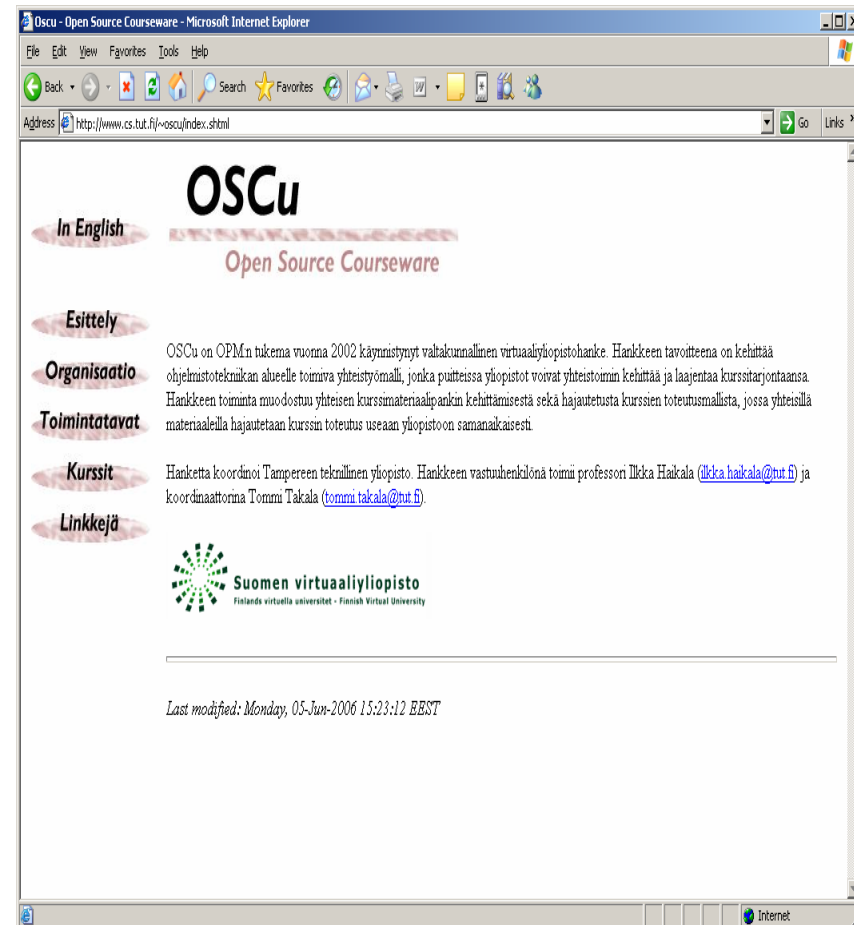


<http://www.balticseanetwork.org/>

FIN: OSCU Open Source Courseware



- Software engineering in six places (Tampere, Oulu, Helsinki x2, Turku, Kuopio, Vaasa)
- Videolectures and local groups for exercises
- Coordination + development, since 2002 project of the Virtual University in Finland
- Courses like Software architectures, Mobile programming etc.
- -> Still works- and continues...



<http://www.cs.tut.fi/~oscu>

Conclusions

- 3-4 realities: physical, planned&project, online, virtual ???
- Global/Regional/Local...
- People/people/content
- ...
- FUTURE: networking, videoconferencing, CSCW, KMO conferences- Lecce, Italy, 10-11.9.2007

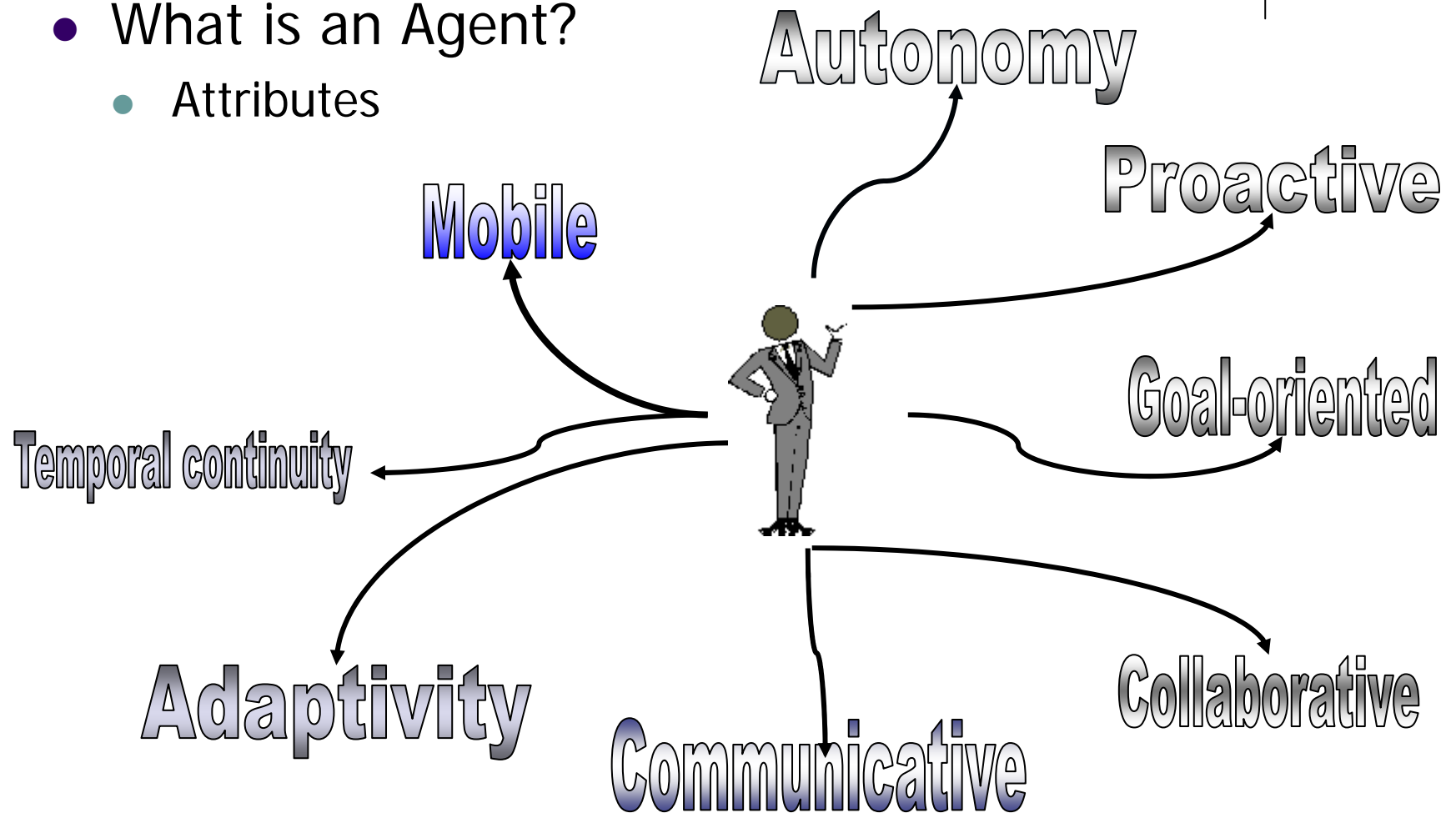


The screenshot shows a Microsoft Internet Explorer browser window displaying the website for the Second KMO Conference. The browser's address bar shows the URL <http://kmo2007.dti.unimi.it/index.php?id=main.htm>. The website header features the text "KMO'2007 Knowledge Management in Organisations" and "New Trends in Knowledge Management" with a date of "September 10-11, 2007 in Lecce, Italy". The main content area is titled "Second KMO Conference" and "eBMS - University of Lecce September 10-11, 2007". It includes a navigation menu on the left with items like "Home", "Call for Papers", "Industrial Track", "Keynotes", "Submission Instructions", "Registration", "Conference Officials", and "Important Dates". The main text describes the conference's focus on knowledge management and lists various topics of interest, such as "Knowledge Representation", "Application of knowledge representation techniques to semantic modelling", and "The use of semantic webs for KM".

<http://kmo2007.dti.unimi.it/>

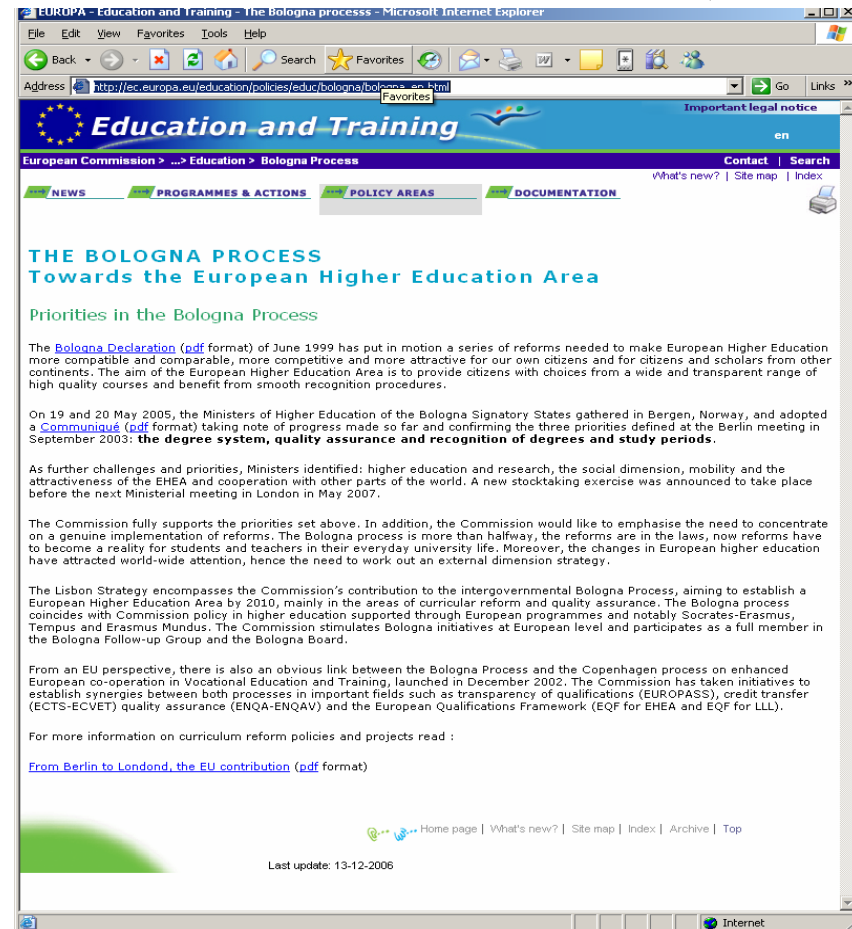
Introduction to Technology

- What is an Agent?
 - Attributes



Next trends: Bologna 2010

- Concerning the exchangeability of degrees and their accreditation even the differences in national legislation and forms of accreditation leaves a lot of questions unsolved at the moment
- In Finland the terminology has been subdivided into joint and shared degrees. The latter are typically addressed by a diploma supplement that provides the overall degree structure and the courses (name, ECTS and grade) in English for practical comparison
- Of course, this approach means considerable administrative work and communication, between students, organisations and partners—maybe even after the Bologna process



Prosessien kuvaustasot ja -hierarkia

(Virtanen – Wennberg 2005)



Prosessin kuvaustaso	Organisaatiotaso
Prosessikartta <ul style="list-style-type: none">• Yleiskuvaus organisaation toiminnasta ja sitä tukevasta prosessirakenteesta (Ydin- ja tukiprosessit)• Jäsentää organisaation prosessien kokonaisuuden• Korvaa prosessiorganisaatiossa perinteisen organisaatiokaavion	Koko organisaatio
Pääprosessin (ydin- tai tukiprosessi) kuvaus <ul style="list-style-type: none">• Yleiskuvaus prosessien sisällöstä• Prosessien keskeiset työprosessit/osaprosessit tunnistettu	Osastot
Prosessin työkulkukaavio / Työprosessit (osaprosessit) <ul style="list-style-type: none">• Prosessien kulkukaaviot kuvaavat minkälaisen työvaiheiden kautta prosessit etenevät organisaatioyksikön sisällä• Kuvaa prosessin toimintojen ja tehtävien lisäksi niistä vastaavat suorittajat	Tiimit
Prosessin toimintotaulukko / Toiminnot ja tehtävät <ul style="list-style-type: none">• Prosessien kulkukaaviota tukeva tekstidokumentti• Taulukosta selviää kuhunkin prosessin vaiheeseen liittyvät toiminnot, niistä vastaavat henkilöt, keskeiset suoritteet, tietovirtojen hallinta jne.• Toimintotaulukon sisältö riippuu prosessikuvausten käyttötarkoituksesta	Työpiste

References

- Baltic Sea Network, <http://www.balticseanetwork.org/>
- Bologna information (in Finnish), <http://www.minedu.fi/opm/koulutus/yliopistokoulutus/bologna/berliininkommunikea.pdf>
- Bologna information (in Finnish), University of Jyväskylä, <http://www.jyu.fi/bologna/>
- Career Space project, <http://www.career-space.com/index.htm>
- EU: The Bologna declaration and process within EU, http://europa.eu.int/comm/education/policies/educ/bologna/bologna_en.html
- Joint study in Engineering in Kvarken, <http://www.kvarken.org/unizon/main.asp?sid=10&slid=1788>
- PICCLE, <http://www.ed.psu.edu/k-12/piccle/>
- Unizon project, <http://www.kvarken.org/unizon/news.asp?lang=3>
- BSOU portal, <http://ttwin.techno.uwasa.fi/bsou%5Fportal/>
- Intensive program in Intelligent Computer Systems, <http://ics.career.teicrete.gr/>, TEI Crete, 06/2006

