

**Final Report on the Assignment to Assist Leopold-Franzens-  
Universität Innsbruck in Developing a Learning Technologies  
Strategy**

**Heerlen,  
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## Management summary

This report contains the analysis, conclusions and recommendations on a learning technologies strategy for the Leopold-Franzens-Universität Innsbruck. In this report 'learning technologies' denote the technological components and methods used to establish and operate an e-learning system.

The conclusions and recommendations in this report are based on data gathered through a desk study to analyse learning technologies developments within Europe; a review of e-learning technology strategy plans compiled by other higher education institutions; and extensive consultative meetings within UIBK.

The study was carried out for UIBK by a team from the Open University of the Netherlands, headed by Prof. Dr. R. Koper.

The major conclusions are:

1. The majority of UIBK staff who apply e-learning in their courses do so at a rather basic level: to publish course information (lecture time table, exam dates, results) and to distribute lecture notes (word files, PowerPoint presentations). This may enhance logistical efficiency but its pedagogical added value is limited.
2. The deployment of e-learning at UIBK – especially through the Blackboard system – differs considerably between Faculties, Departments, and individual lecturers. This creates opportunities for peer-learning where the 'advanced users' serve as tutors and role models for those new to e-learning.
3. The deployment of regular e-learning, innovative e-learning project, and RTD into learning technologies is not part of an institutional policy at UIBK but instead depends largely on enthusiastic individuals.
4. There is a widespread notion that UIBK management is pushing the e-learning agenda not so much to capitalise on strategic opportunities, but rather to economise on staff input. When this notion is not corrected, it may severely hinder the further diffusion of e-learning within UIBK.
5. There is a large gap between on the one hand strategic opportunities for e-learning as identified by a small group of staff, and on the other hand neutrality or indifference towards e-learning by a large group of staff. The latter is sometimes based on suspicion as mentioned above, but in general can be traced to a lack of knowledge and exposure.
6. So far the deployment of e-learning has basically been dependent on intrinsically motivated staff; there are very few reward mechanisms in place (like compensation of time, pedagogical support, acknowledgement during annual staff assessment) to support the further diffusion of e-learning.
7. E-learning innovation projects and learning technologies RTD projects often are carried out with external partners, involving external funding, and

8. applying/introducing new technologies, but lacking coordination. This creates problems with sustainability and transfer of outcomes to the operational e-learning environment at UIBK.
9. The above conclusions denote UIBK overall to be at the early adoption stage of e-learning, with small pockets within the institution that are well ahead of the majority.
10. At the moment there are no immediate internal nor external threats to UIBK that would require the widespread and rapid deployment of e-learning; at the same time however, this is the time that advances in e-learning may still make a strategic difference.

The major recommendations are:

1. E-learning at UIBK should move beyond its present logistical support focus, and should start adding substantial value to the teaching and learning process. This comprises: further expansion of basic Blackboard use to the vast majority of courses (as an addition to 'Präsenzlehre'); conversion of a substantial number of present courses towards blended learning courses (e.g. to start with introductory courses with large student numbers); and pilot a limited number of full-distance courses (for which there is a clear market, as this will require substantial investments). At the same time, this ambition should be matched by the required investments in support services and technical facilities<sup>1</sup>.
2. Within the university there is a strong need to establish a 'common-ground' where e-learning is concerned. This can be realised through a structured transfer of best practices and lessons learned from peers, complemented with advice from external experts.
3. There is a need for pedagogic support and course model outlines combining traditional teaching with e-learning (the so-called blended learning mode) in addition to technical support (i.e. Blackboard support). Pilots in this area can be supported through a so-called E-learning Team.
4. As with most innovations, the first successes can be attributed to intrinsically motivated individuals, but the further expansion of e-learning will require mechanisms that will formally compensate and reward staff for their efforts in promoting e-learning.
5. For the time being, Blackboard should remain the preferred and supported e-learning environment at UIBK. A review of alternative systems may be appropriate when a next generation systems becomes available (not expected within less than two years).
6. A step-wise approach in the further diffusion of e-learning within UIBK should reward initiatives, based on proven success. This will require the definition of such success criteria (e.g. successful application to foundational courses with large student numbers) and the establishment of an assessment and funding mechanism. The

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<sup>1</sup> The plans as contained in 'Antrag im Rahmen der Ausschreibung des Bundesministeriums für Bildung, Wissenschaft und Kultur – Entwicklung und Umsetzung von e-Learning/e-Teaching-Strategien an Universitäten und Fachhochschulen' form a proper elaboration of these ambitions.

involvement of external e-learning experts in assessment procedures may increase independent judgment, and thereby acceptance.

7. The present indistinct nature of operational e-learning use ('Lehre') and innovation and RTD work ('Forschung') should be clarified by the establishment of an Innovation Fund. This will serve to direct and combine e-learning innovation and learning technologies RTD efforts, which is more effective than small efforts scattered across the university. Such a fund should be matched by a mechanism for proposal appraisal, progress monitoring and outcome assessment.
8. Experiments should not disrupt e-learning courses; ZID staff supporting operational use of Blackboard should not be claimed to solve RTD problems; and not every innovation or RTD project should have to build up its own technical infrastructure. Therefore it is advised that UIBK sets up basic experimental infrastructure to be centrally supported, but accessible to decentralised projects.
9. UIBK should select a management approach in both the area of operational e-learning use ('Lehre'), and in the area of innovation and learning technologies RTD ('Forschung') that fit its e-learning and RTD ambitions.

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# 1. Introduction

A number of international, national and institutional developments at Leopold-Franzens-Universität Innsbruck (UIBK) have led to a wide-spread need to formulate an institutional learning technologies (LT) strategy:

- In reaction to the recently implemented national law on higher education the university is faced with a reorganization of its academic, support and management structures.
- The implementation of the Bologna declaration necessitates the revision of the university curricula.
- The changing demographic, social and economical environment of the university provides opportunities and threats in terms of present and potential target groups for the institution.
- The experiences with the application of 'new media' over the past years at the university have prepared the ground for a more strategic approach towards learning technologies.

The university has solicited the services of the Educational Technology Expertise Centre of the Open University of the Netherlands, more particularly Prof. Dr. Rob Koper, to assist in this process of formulating an institutional learning technologies strategy.

An initial fact finding mission and interviews in July 2004 with top management and Heads of various Services units of the university revealed a number of themes that formed the starting point for the assignment, ultimately summarized in the following question:

*Which are the major strategic objectives to which learning technologies at the Leopold-Franzens-Universität Innsbruck should contribute; what are the educational, technological and organizational requirements to be addressed to secure their realisation; and what is the most realistic phased approach for their implementation and secured future operation.*

The following steps were taken in addition to the initial fact finding mission:

1. A desk study on learning technologies strategies describing the European context (learning technologies movers and inhibitors, state-of-the-art, trends and critical issues for the coming years) and organizational and strategic options for the Leopold-Franzens-Universität Innsbruck. This desk study was to offer input for a project proposal from the university for the call for tender concerning e-learning from the Austrian government, as well as for the provisioned follow-up mission. The desk study report is attached in appendix A.
2. Gather information on other universities' strategic plans. For a short note on the information gathered and a list of strategic plans provided see appendix B.
3. Further consultation with top-management and (semi-structured) interviews with academic staff in a follow-up mission in February 2005 (see appendix C for those invited). In preparation for the interviews respondents were given the desk study report and a listing of issues derived from the desk study (see appendix D).
4. Final reporting on the results of the follow-up mission and resulting recommendations during a visit to UIBK in December 2005. (Appendix E, F and G contain the slides of the presentations given during this visit).

The following sections of this report will give a summary of the strategic and organizational options for the Leopold-Franzens-Universität Innsbruck as described in the desk study; a more extensive description of the interview results obtained in the follow-up mission of February, and the final conclusions and recommendations.

Late 2004 the Austrian Government published a call for tender concerning e-learning, and at UIBK a team was formed to outline a proposal. The proposal formulation process tallied with the visit of the consulting team in February, and both processes were synchronized. The proposal was accepted by the Ministry, and the project kick-off was synchronised with the consulting team's December visit.

## 2. Desk study summary

This section briefly summarizes the options for UIBK to develop an e-learning and learning technologies strategy, as described in the desk study. The full account of the desk study is attached in appendix A.

Regarding learning technologies as a tool in support of teaching and learning (e-learning) three ambition levels are described:

1. LT in support of learning and teaching *logistics*: electronic availability of study guides, lecture notes, registration for exams etc. This is presently the dominant mode of e-learning deployment at UIBK.
2. LT in support of increased *efficiency* of the learning and teaching process: electronic courses may reduce lecture time, travel time and possibly widen access (distance students). This is recognised by some staff as potentially beneficial to UIBK, but at the same time its potential to reduce staff time is regarded as a threat.
3. LT in support of increased *effectiveness* of the learning and teaching process: by supporting new and more effective learning strategies through ICT, e.g. simulations, problem-based group work etc. Here the learning technology application is an integral part of the didactical approach. Only a few initiatives at UIBK have so far explored this venue, often together with external partners and/or externally funded.

Finally, learning technologies can be treated as an academic field in itself:

4. Learning technologies RTD may also be treated as an academic field. The field of 'neue Medien' as used at UIBK however should not be confused with 'learning technologies' as used in this report: here learning technologies denote the technological components and methods used to establish and operate an e-learning system. At UIBK learning technologies as an academic field is still relatively unexplored.

Opting for either of these four scenarios implies certain organisational and technological requirements: from the availability of a stable logistical system in the first scenario, to a stable Virtual Learning Environment with central technical support and support from educational technologists in the second scenario or even an overall change management process in the third scenario. Promoting e-learning and learning technologies as an academic field will again pose additional requirements.

### **3. Follow-up mission meeting results**

The meetings were conducted by the team late February 2005 to which all Faculties were invited (see appendix C for a listing of the meeting schedule). In preparation for the meetings the desk study report and an issues list derived from the desk study were sent in advance to UIBK for distribution to those invited to the meetings (see appendix D).

At the time the meetings were conducted, the university was also working on a proposal for the call for tender concerning e-learning from the Austrian government. A number of those present at the meetings participated directly in this tender process, or were kept informed indirectly. This resulted in the ‘Antrag im Rahmen der Ausschreibung des Bundesministeriums für Bildung, Wissenschaft und Kultur – Entwicklung und Umsetzung von e-Learning/e-Teaching-Strategien an Universitäten und Fachhochschulen’ and its compilation contributed positively to the awareness on e-learning as a strategic issue at UIBK. The overlap between the tender process and the meetings however in a number of cases also required some initial clarification by the team on the relation between the consultancy assignment and the tender process.

The meetings comprised a mix of information provision by the team; reactions by UIBK staff to the interview issues list sent to them in advance; and open and frank discussions.

The major outcomes of the meetings are summarised according to the three themes used in the interview issues list (see appendix C).

- Motives for, and actual implementation of, e-learning at UIBK
- Pedagogical, technological and organizational prerequisites
- E-learning diffusion strategies

For each theme the present situation as emerging from the meetings is described, as well as the future situation as envisaged by UIBK staff .

#### ***Motives for, and actual implementation of, e-learning at UIBK***

The application of e-learning may address various objectives: efficiency gains (realising the same educational outputs with lesser inputs); enhancing effectiveness (improving educational outcomes); educational innovation (realising educational outcomes that were previously impossible without ICT); market considerations (competition and reaching new target audiences); and finally learning technologies can be an academic field of study in itself (RTD objective).

#### **Present motives and realisation**

The motives given by staff for the present application of e-learning within UIBK vary widely. The following motives were mentioned during the interview sessions: a) the ease of distributing curricular information (timetables, exam dates, results, etc.) to students electronically; b) providing alternative access to learning resources (documents, powerpoint presentations, etc.); c) participating in international curricular projects (e.g. as part of a

student exchange programme); d) innovate teaching and learning; and e) RTD-inspired motives, with learning technologies themselves as the research topic.

The difference in e-learning adoption between Faculties, Departments and individual staff is considerable. When looking at actual practice, the majority of staff actively involved in e-learning and learning technologies do so in either one of the following modes:

- **Basic Blackboard use.** The vast majority of staff who use Blackboard, primarily do so to distribute curricular information and learning materials to their students, and sometimes to collect student assignments: within UIBK Blackboard is primarily used as a logistical system.
- **Extended Blackboard use.** A smaller number of staff also use Blackboard's communication functions, basically mail, to answer questions from students. A very limited number of staff also uses functions like discussion lists and work group spaces as an integrated part of a blended learning approach.
- **Using alternative tools.** Some departments have equipped their own server from which students can download files, and which hosts mail facilities for electronic communication. Sometimes this is used as an alternative to Blackboard, sometimes parallel to Blackboard.
- **E-learning innovation and learning technologies RTD work.** A small number of staff are involved in activities that go beyond the modes described above. They participate in truly innovative e-learning projects and learning technologies RTD work, often with external partners and (partly) externally funded. This usually falls under a Faculty's research programme, and not under the teaching mission.

Extended Blackboard use, innovation and RTD projects often depend on one or a few enthusiastic individuals within a Department or Faculty. These activities, usually in the form of projects, often involve external funding and close cooperation with (inter)national partners. Transfer of their outcomes to the regular teaching and learning processes at UIBK sometimes leads to sustainability problems.

These findings were confirmed by the (few) students that were invited to the meeting. A survey conducted three years ago shows students to be largely receptive to the idea of (blended) distance learning at home or through regional Study Centres.

## **Future motives and opportunities**

In addition to present motives to apply e-learning, staff also indicated new – especially external - developments that may call for the extended deployment of learning technologies. These included a) meeting the expectations of today's generation of students who are conversant with ICT; b) reaching new target groups; c) responding to increased competition by other HE-institutions that already offer e-learning courses; and d) the internationalisation of Higher Education as spearheaded by the Lisbon and Bologna agenda's.

When asked for ideas and concrete plans to realise these opportunities, responses varied considerably between Faculties and Department. Sometimes the lack of concrete plans was based on a justified assessment of one's own situation – e.g. lack of resources, not much added value in applying e-learning, etc. – but in other cases was based on a lack of exposure, understanding and appreciation of the potential benefits and possible modalities of e-learning. Overall for UIBK there is a large gap between the potential benefits of e-learning as identified

by a small number of staff, and actual plans for their realisation that will require the involvement of many.

The overriding apprehension of staff was that the extended use of learning technologies within UIBK was primarily motivated by top-management's aspiration to reduce costs. The widely envisaged scenario was that of coercing staff into the adoption of blended learning as a means to reduce staff input, either directly through the incorporation of e-learning as an important criteria in annual staff assessment, and/or indirectly through reducing Departmental staff budgets and teaching facilities. In addition there was a genuine fear, especially among those who have little personal experience with e-learning, that in such a scenario they would not be given sufficient technical and educational support to facilitate the transformation of their courses from classroom-based to blended learning mode.

### ***Pedagogical, technological and organizational prerequisites***

The successful deployment of e-learning is facilitated by supportive pedagogical, technological and organizational conditions, facilities and services.

#### **Present support**

The most visible support feature for the application of e-learning at UIBK is the installed Blackboard system and the support provided for its operation by ZID. As such many of the opinions, comments, and needs expressed by staff during the interviews tend to focus on the present infrastructure, Blackboard, and the support services.

The present Blackboard users generally agree on the usefulness of the system as a tool to distribute course information (class schedules, examination data, test results etc.) and learning materials (lecture notes, PowerPoint presentations, etc), and to hand in assignments. When looking beyond this logistical function at the added value of Blackboard in terms of increasing efficiency, effectiveness or the innovation potential of teaching and learning at UIBK, opinions vary widely. These range from 'never really tried it', to 'what we do cannot be supported by e-learning', to 'useful', to 'absolutely insufficient for what we need'.

Non-users often cite a lack of time, lack of facilities, and lack of support as reasons not to use Blackboard. Those who claim their pedagogical approach cannot be supported by e-learning sometimes have a legitimate case due to the limited functionality in Blackboard to support for example personalised learning, or due to problems that distance learning in general imposes on real-time interaction. In other cases however a lack of knowledge and appreciation of possibilities seems to underlay hesitant or negative attitudes.

In general there is an appreciation for the Blackboard support provided by ZID, and an acknowledgement that ZID has limited staff capacity. On the other hand it became clear during the meetings that there is uncertainty about what services ZID is expected to provide. This problem tends to converge on the distinction between learning technologies RTD activities (as a field of 'Forschung'), and daily operation and support of Blackboard ( in support of 'Lehre'). Blackboard licensing, the required technical infrastructure, and the organizational support infrastructure are financed from the ZID budget. E-learning innovation and learning technologies RTD projects on the other hand, are often initiated and carried out by individuals or groups within distinct Departments, often financed through national or

international programmes, using project-specific technologies or external infrastructures, and depending on research and development capacity external to the institution. The link between these two processes is not clearly defined at UIBK, which leads to a number of problems. First, outcomes of RTD activities may not be incorporated in the centrally supported e-learning environment due to technological incompatibility. Second, RTD outcomes may be difficult to sustain – for example in terms of maintenance, continued content development, or required tutoring capacity - after RTD funding (often external) comes to an end. And third, this leads to competition for scarce ZID resources to support on the one hand daily teaching and learning through Blackboard, and on the other hand to support RTD activities in individual Departments.

### **Prerequisites for expanding e-learning**

The pedagogical, technological and organizational support needs for the further diffusion of e-learning vary between Faculties, Departments and individual staff. As an indication, we quote some of the needs expressed during the meetings:

- 'We planned a project for distance learning, but now need programmers and financial support to implement it.'
- 'In the end the distance courses will save time, but first we need additional development capacity.'
- 'What is needed are standards, also for the experimental environments.'
- 'For our project we need technical support with data base transfer and learning parsers.'
- 'Blackboard does not provide enough functionality for us. We need access to an environment where we can experiment with other tools.'
- 'We lack sound didactical concepts for e-learning.'
- 'We need support in developing electronic learning materials.'
- 'E-learning should be embedded in a policy on teaching and learning. Such a policy is lacking at the moment.'
- 'The infrastructure for students is insufficient.'
- 'We have our own server. This is tolerated, but we don't have enough staff to look after it.'

As we see, the prerequisites for the further implementation of e-learning covers the whole range of organizational, technological and pedagogical aspects.

Whether Blackboard should remain the central electronic learning environment in future was a recurring issue in almost all meetings. There seemed to exist consensus on the fact that Blackboard use was just beginning to pick up, but subsequently this would lead to two opposing conclusions: 1) UIBK should benefit from this positive development, and build on it, or 2) while use was still low, this was the best time to switch to another system without too much disruption. It should be noted however that some of the supporters of the second option were motivated by financial considerations – opting for an open source system – but turned out to have overestimated annual Blackboard licensing costs.

### ***E-learning diffusion strategies***

Diffusion strategies cover the types of processes – informing, motivating, rewarding, etc. - through which the use of learning technologies is disseminated throughout the institution.

### **Present status**

Staff using Blackboard beyond its basic functionality, as well as those involved in e-learning innovation and learning technologies RTD activities, are in general highly intrinsically motivated. Various staff, both users and non-users, indicated a number of motivational detriments to committing themselves to the further promotion and use of e-learning and learning technologies:

- With the major changes already being implemented at UIBK, pushing the e-learning agenda adds to further feelings of insecurity.
- There is a general feeling that staff is already overburdened, and to immerse oneself in developing e-learning courses or carry out learning technologies RTD work would add another additional workload.
- Tutoring e-learning courses is by many seen as an additional task on top of their regular lecturing load; in this respect the ‘lack of tutors’ was mentioned a number of times as a hindrance to e-learning (implying that tutoring is not the task of the lecturer).
- Promoting and applying e-learning is not rewarded, as it is not part of staff assessment
- The added value of e-learning is often not very clear, making it hard to motivate staff for it.

The overall feeling thus seems to be that as an individual staff member one has to make sacrifices to become involved in e-learning, there are hardly any rewards for it, and in general the peer group is not very receptive to these types of initiatives.

### **How to motivate staff in future**

There seemed broad consensus on a number of issues that might motivate staff to give e-learning a fair chance at UIBK:

- First, the final decision whether or not to apply e-learning in a specific course should in the end rest with the individual lecturer. In a number of cases staff truthfully indicated that at the moment they lacked an informed opinion to make such a decision.
- Second, developing and piloting e-learning materials and courses is an additional task that should somehow be compensated and/or additionally rewarded. This not only applies to the individual lecturer, but also to Departments making a concerted effort to promote e-learning.
- Third, the type of central support (pedagogical, technological, organizational) indicted in the previous section should be available.
- And finally, given the fact that the organization is in a flux, an incremental approach to the further introduction of e-learning is preferred over a broad and top-down implementation exercise.

## 4. Analysis and recommendations

### *Analysis*

#### **Status of e-learning diffusion**

Overall UIBK is in its early adoption stage where the application of e-learning and learning technologies are concerned. This is substantiated by the following characteristics of present use:

- The majority of UIBK staff who apply e-learning in their courses do so at a rather basic level: to publish course information (lecture time table, exam dates, results) and to distribute lecture notes (word files, PowerPoint presentations).
- The deployment of e-learning at UIBK – especially through the Blackboard system – differs considerably between Faculties, Departments, and individual lecturers.
- The deployment of regular e-learning, innovative e-learning project, and RTD into learning technologies is not part of an institutional policy at UIBK but instead depends largely on enthusiastic individuals.
- E-learning innovation projects and learning technologies RTD projects often are carried out with external partners, involving external funding, and applying/introducing new technologies, but lacking coordination. This creates problems with sustainability and transfer of outcomes to the operational e-learning environment at UIBK.

At the same time the use of Blackboard is slowly picking up, indicating that an important threshold in the acceptance of e-learning has been taken. The various interesting e-learning and RTD activities and experiments taking place within pockets of the institution offer an additional opportunity to promote and further expand the deployment of learning technologies at UIBK.

#### **Institutional opportunities and threats**

At the moment UIBK is going through a period of change as the institution attempts to adjust to, and put to its advantage, the changed Austrian higher education landscape. The application of e-learning is acknowledged by a number of staff as providing exiting opportunities in this context. In a number of cases such opportunities have already been realised – often as part of national or international cooperation projects – or are in the process of being planned<sup>2</sup>. There is however a large gap between on the one hand strategic opportunities for e-learning as identified by a relatively small group of staff, and on the other hand neutrality or indifference towards e-learning by a larger group of staff.

The present changes seem to limit acceptance for further change and innovation. This is complemented by apprehension about management's motives for promoting e-learning, which

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<sup>2</sup> See for example some of the planned activities in “Antrag im Rahmen der Ausschreibung des Bundesministeriums für Bildung, Wissenschaft und Kultur – Entwicklung und Umsetzung von e-Learning/e-Teaching-Strategien an Universitäten und Fachhochschulen”

many believe to be an instrument to further reduce (staff) costs. Also there is a widely shared conviction that using and promoting e-learning demands individual sacrifices from staff in terms of additional efforts for which there is hardly any compensation or reward, and which in general is not particularly supported by the peer group. In addition there is also a general lack of awareness about what is and what is not possible with e-learning, and diffusion of good examples beyond the project or Department level has so far been limited.

As a result the deployment of e-learning so far has been largely dependent on intrinsically motivated staff, for whom there have been very few reward mechanisms in place (like compensation of time, pedagogical support, acknowledgement during annual staff assessment) to support the further diffusion of e-learning.

The present situation provides ample room for support to existing e-learning initiatives within UIBK that may function as show cases, parallel to gradually building up a broader user-base for Blackboard. To realise a widespread and massive step forward with the deployment of e-learning however will be problematic in the given context.

## **National and international context**

At the moment there are no immediate internal nor external threats to UIBK that would necessitate rapid, widespread, and massive deployment of e-learning. At the same time however, this is the moment that advances in e-learning may still result in a strategic advantage. Therefore UIBK should not neglect the deployment of learning technologies given national<sup>3</sup> and international<sup>4</sup> developments, and for some programmes or Departments there may indeed be a high urgency not to delay the deployment of e-learning any longer<sup>5</sup>, but for the institution as a whole the urgency at the moment still seems manageable.

## **Recommendations**

A number of the below recommendations are elaborated in the Work Package plans as described in the ‘Antrag im Rahmen der Ausschreibung des Bundesministeriums für Bildung, Wissenschaft und Kultur – Entwicklung und Umsetzung von e-Learning/e-Teaching-Strategien an Universitäten und Fachhochschulen’. Where relevant, reference will be made to the Work Package number (‘See Antrag WP #’).

### ***Take e-learning to the next level***

At present Blackboard is primarily used as a logistical system to distribute course information and lecture notes. This may serve as a preliminary step in getting staff involved with e-learning, but it adds little to efficiency or effectiveness increase. As such UIBK management should clearly communicate that e-learning should move beyond its present logistical support focus, and should start adding real value to the teaching and learning process. This comprises: further expansion of basic Blackboard use to the vast majority of courses (as an addition to ‘Präsenzlehre’); conversion of a substantial number of present courses towards blended

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<sup>3</sup> See “Antrag im Rahmen der Ausschreibung des Bundesministeriums für Bildung, Wissenschaft und Kultur – Entwicklung und Umsetzung von e-Learning/e-Teaching-Strategien an Universitäten und Fachhochschulen”

<sup>4</sup> See appendix A.

<sup>5</sup> See for example some of the planned activities in “Antrag im Rahmen der Ausschreibung des Bundesministeriums für Bildung, Wissenschaft und Kultur – Entwicklung und Umsetzung von e-Learning/e-Teaching-Strategien an Universitäten und Fachhochschulen”

learning courses (e.g. to start with introductory courses with large student numbers); and pilot a limited number of full-distance courses (for which there is a clear market, as this will require substantial investments).

This ambition should be matched by the required investments in support services and technical facilities. The plans as contained in the 'Antrag' form a proper indication of such an ambition.

### ***Establish 'common ground'***

Various individual initiatives, Faculty projects, and international collaboration in the field of e-learning and learning technologies have rendered a range of interesting materials, showcases and lessons learned. On the other hand there is a large discrepancy in knowledge and experience related to learning technologies and e-learning between and within Faculties and Departments. To further the dissemination of e-learning throughout the institution, it is necessary to create a shared e-learning knowledge base. It is therefore advised to set up a structured exchange of best practices, starting with those in which UIBK staff itself is/has been involved, to be complemented with examples from elsewhere. Such a structured exchange comprises an institution-wide programme of regular meetings and demonstrations as part of staff development, and may be supplemented with a specially devised web-site and other promotional activities. (See Antrag WP7)

### ***E-learning Team for didactical support and e-learning course models***

Applying learning technologies not only requires technical support for lecturers, but also pedagogical support: how to secure effective blended learning; how to facilitate group work; how to devise a tutoring strategy; etc. are questions not every lecturer should try to answer on his/her own, but should be based on proven experience and where possibly supported by e-learning course models. The development, demonstration, and dissemination of such models is expected to lower considerably the threshold for many staff, and thus greatly facilitate the acceptance of e-learning. The development of such models for the context of UIBK can typically build on lessons learned (see above) and requires the combined effort of e-learning experts, curriculum developers, and experienced lecturers. (See Antrag WP2, WP3, WP4).

### ***Stimulate professional growth and reward effort and success***

As with most innovations, the first successes can be attributed to intrinsically motivated individuals, but the further expansion of e-learning will require provision of opportunities for staff development, and formal compensation and rewards for staff efforts in promoting e-learning. This implies offering courses for staff, compensating staff for the development efforts required for transferring their courses and programmes towards blended learning; noting such efforts in annual staff assessment procedures; and otherwise promoting such staff as role models among their peers. (See Antrag WP5, WP7)

### ***Maintain Blackboard for the time being***

The general impression is that Blackboard use at UIBK is slowly picking up. Present annual license fees are relatively low as compared to for example staff support costs, while open source products at present hardly provide additional functionality. As such there is at the moment no reason to substitute Blackboard by another virtual learning environment (VLE). Only when a new generation of VLEs becomes available or Blackboard license fees will increase considerably, it will be opportune to consider replacing Blackboard. Therefore it is suggested to carry out a survey of available alternatives to Blackboard in two years time, and

in the mean time to investigate options to secure future transportability of electronic learning materials entered in Blackboard. (See Antrag WP1)

### ***Proceed step by step and reward success***

The present situation – many changes taking place within UIBK at the same time and no immediate external threats requiring a massive e-learning offensive – suggests a step-by-step approach building on proven success. Such a careful approach will address present suspicion and reluctance by staff to engage in e-learning activities, and at the same time reduces financial risks involved with a widespread push for e-learning. The major mechanism for the further promotion of e-learning should be to reward success (see earlier): at the level of individual staff who put in additional effort as well as at the level of the Department or Faculty where resources are directed towards e-learning.

### ***Establish an e-learning and learning technologies Innovation Fund***

One step to take in the short term is to make a clear distinction between the operational use of e-learning as presently already supported through Blackboard and ZID services on the one hand, and the innovation and RTD agenda through an Innovation Fund still to be established on the other hand. Such an innovation fund would provide a mechanism – for example through devising strategic e-learning priorities and co-funding projects that address such priorities - to direct and combine efforts, which is more effective than allowing small and scattered innovation activities to be conducted across the university. By setting up a procedure based on conditional funding, requiring outputs of each project phase meeting pre-defined criteria to be eligible before funding the next phase, will secure ample management control for such an innovation fund. Initial project proposals should be evaluated through a committee comprising UIBK staff as well as external members. A major consideration in project appraisal should be the transfer of outcomes towards the operational teaching and learning processes.

### ***Establish an experimental learning technologies infrastructure***

Experiments should not disrupt e-learning courses; ZID staff supporting operational use of Blackboard should not be claimed to solve RTD problems; and not every innovation or RTD project should have to build up its own technical infrastructure. For this reason it is advised that UIBK sets up basic experimental infrastructure to be centrally supported, but accessible to decentralised projects. Such an infrastructure, through its configuration, may further facilitate the transfer of innovation outcomes to operational processes within UIBK.

### ***Select an appropriate management approach***

A recurring management issue with e-learning is to what extent to separate day-to-day e-learning deployment in regular teaching and learning ('Lehre'), from e-learning innovation and RTD activities ('Forschung'). This is the old discussion about the advantages and disadvantages of closely linking education and research within the university. In the case of e-learning and learning technologies the arguments tend to focus on the following:

- Education on the one hand may benefit from the latest learning technologies research outcomes, but on the other hand favours a stable and reliable e-learning infrastructure which does not agree very well with the uncertainties inherent to innovation and RTD work.
- E-learning research may be inspired by real-life teaching and learning problems and can validate its outcomes through the transfer to day-to-day teaching and learning, but on the other hand a utilitarian focus may leave too little room for more fundamental research issues.

- When separating the two by positioning e-learning support for ‘Lehre’ within the administrative support structure, and learning technologies innovation and ‘Forschung’ within the academic structure, this implies the former to be an expense and the latter a resource. As in times of budget reductions expenses will always be cut in favour of resources, this option implies a rather weak position for e-learning in support of ‘Lehre’.

The following three, and possibly more, structural options are open to UIBK:

1. Completely separate the function of deploying e-learning in the teaching and learning process from the innovation and RTD function. E-learning support becomes part of the support organization, while RTD remains the prime responsibility of the research units and their professors. Through the provision of incentives for e-learning research, e.g. the proposed Innovation Fund, institutional management may still influence the direction of RTD activities and stimulate transfer of its outcomes to UIBK’s daily operations.
2. Create a central academic role/position – at or just below the level of the Vice Rectorates – under which both functions reside. This role/position may be a new and additional position, or be an added mandate to an existing position. This will allow operations of the two functions to be separated and not to interfere, but still secure coordination at the tactical and strategic level. This role/position may be supported by an Advisory Board comprising representatives from the various Faculties.
3. Appoint for each Faculty an academic responsible for both functions, with a central unit responsible for providing basic technical support. This will allow each Faculty to define its own priorities in and between the two functions. The responsible academics may coordinate their efforts through a Consultative Board.

The team has a slight preference for option 2, but cannot fully envisage to what extent this option fits the present strategic and operational context of UIBK. The following are some of the contextual factors effecting the selection of the preferred option:

- The academic culture and regulations about staff positions and mandates (especially those regarding academic and non-academic functions).
- The decision-making structure and mechanisms.
- Budget allocation and depletion procedures.

# **Appendix A: Desk study on learning technologies strategy for UIBK**

## **1. Definition of learning technologies**

Learning technologies are the specific means of establishing the functionality of an e-learning system, that is, to analyse, design, develop, deliver and evaluate learning opportunities for learners in certain contexts and knowledge domains (Koper, 2004).

## **2. The European context**

The European ambition as stated by the European Council to 'become the most competitive and dynamic knowledge-based economy in the world' requires that Europe's education and training systems offer learning and training opportunities tailored to target groups at different life stages: young people, unemployed adults, employees who need or want to update or further develop their competencies (Lisbon European Council, 2000).

In a paper discussing the present condition of European universities in the context of this European ambition van Vught (2004) describes the knowledge gap that exists between Europe and the US and argues that due to broader private investments in higher education and R&D in the US, 'the focus on the relevance and application of knowledge is much stronger in the USA than in Europe, which could also be the reason why in the USA more economic growth is generated from knowledge than in Europe'. Van Vught concludes that 'it becomes more and more important that knowledge institutions integrate their knowledge functions in a broad social context as a resource directed at productivity and economic growth'. This would require addressing a number of challenges:

1. European universities must intensify relations with business and industry, strengthen their regional role and make services and facilities available to third parties.
2. Create a true 'European higher education area' through intensification of the Bologna process and the development of a pan-European research market to address issues like lack of funding, low critical mass and low mobility of researchers.
3. Increase research capacity through European immigration incentives for young academic talent.
4. Create functional diversification of the higher-education and research systems of Europe and identify best research universities.
5. Stimulate both private sector and universities to increase their mutual cooperation.

## **Learning technologies movers and inhibitors**

The context of a global knowledge society contains several learning technologies movers and inhibitors (Kluijfhout, 2003). European policies have been directed towards increased mobility of students and hence competition between higher education institutions (Bologna Accord). Besides European funds have been directed towards innovations in education aiming to increase access and flexibility to meet the needs of different target groups.

Similarly policies and funding on a national level have contributed to the development and/or deployment of learning technologies. In countries like the Netherlands and the UK for instance, government policies and funds have been directed towards innovation of education. At the same time a more general decrease in government funding for education constituted an impetus for educational institutions to reach new target groups (part time, distance learners, learning at work) and to improve efficiency through deployment of ICT. Both on a national and institutional level visions, policies, funding and actions regarding innovation of education determine the way and the extend to which learning technologies are deployed. In the Netherlands both governmental and institutional policy and funding regarding the use of ICT in education concentrated on three theme's (Kluijfhout, in prep.): innovation of the teaching-learning process, efficiency of the teaching-learning process and competitiveness, both nationally and internationally. Of course with increased competition, customer and market demands and a drive for excellence in teaching and learning can be identified as major driving forces to adopt e-learning and learning technologies. (HOOP, 2004)

In a comprehensive report on E-learning and sustainability Attwell (2005) describes how four years ago studies in the strategic development of e-learning in universities focused on two different approaches: programmes of e-learning parallel to traditional classroom delivery and the launch of separate e-learning institutions. He goes on to conclude that the second approach has often failed, despite very large expenditure. The UK e-university is given as a case in example. Currently universities in Europe focus on (a combination of) three strategies regarding e-learning, all based on the integration of e-learning within the faculty. The first approach consists of provision of selected courses and programmes through e-learning supplementary to traditional programmes. The second involves integration of e-learning within existing courses and the third approach is to develop e-learning programmes in partnership with industrial organizations. Another development Attwell signals is the growth of partnerships and networks between universities and other educational institutions.

Given these policies, strategies, funds and actions aimed towards innovations in education, where do we stand today? What can we say to be the current state-of-the-art in learning technologies application?

## **State-of-the-art in learning technologies application**

An up-to-date overview of national innovation policies can be found, for a quick glance at: [http://trendchart.cordis.lu/tc\\_country\\_pages.cfm](http://trendchart.cordis.lu/tc_country_pages.cfm). More extensive national reports are available at: [http://trendchart.cordis.lu/country\\_reports.cfm](http://trendchart.cordis.lu/country_reports.cfm). Rather than compare national policies in detail we will here concentrate on and describe trends at large.

Attwell (2005) identifies three stages in the development and application of ICT for learning, describing the second as a period of entrenchment – a phase from which we are only now emerging – in which 'technology development was for the administrators and managers and even the metaphor of teaching and learning applications was that of administration or control.' (p. 15). The major development in this stage is the implementation of learning management systems, which Attwell defines as 'integrated suites of modular and interoperable programmes, providing content creation tools, management functions and learning platforms'. A third, emergent phase in the development of e-learning and ICT applications is driven by a widespread disappointment with the result of the phase of entrenchment and inspired by two

technological developments: open source software (OSS) and standards. Developments which Laagland (2004) identifies as already state-of-the-art in e-learning industry: adoption of open specifications and standards. According to Attwell OSS and standards developments open the door to teachers and learners to produce content with limited knowledge of software and systems. These changes do not guarantee a new period of innovation but do promise 'a new freedom to experiment and innovate and may facilitate a refocusing on the needs of the learner and on pedagogic applications, rather than administration and control'. (p.23)

Kluijfhout (in prep.) also identifies several stages in adopting or promoting the use of ICT and learning technologies in education and characterises the current one as a stage of consolidation, in which management introduces coordination mechanisms to control financial consequences of a now growing trend. Examples of these control mechanisms are a central budget for ICT and reduction of the number of supported VLE-s. Typically in the consolidation phase the question rises regarding the added value of a VLE. Like Attwell Kluijfhout acknowledges disappointing experiences regarding the VLE's impact on educational innovation, effectiveness and cost reduction as a drive to change. Unlike Attwell however he perceives two possible follow-up stages. Disappointment over the VLEs added value might lead an institution into the phase of integration, striving to further integrate the VLE with other systems and the work flow at large in order to still increase effectiveness and efficiency. These institutions show an interest in reuse, collaboration and integrating the VLE with administrative systems. Other institutions however might move to a phase of transformation where the primary, educational process changes under the influence of the new technology. Front runners in the transformation phase are currently focusing on developing and integrating portfolios and tutoring components to enable provision of competency based and personalised education.

Given the present situation and present developments regarding learning technologies, what technology will become available in the short run and what long term trends do we have to reckon with?

## **Upcoming innovations and opportunities**

The Digital University report *E-learning trends 2004* (Geloven, Koper, van der Veen, 2004) offers an overview of current world wide trends in e-learning. The e-learning industry is a growing market and is expected to continue to grow. The time for extensive use of reusable learning objects has finally come, and not just for e-learning industry. Competition in the industry is heavy and it is expected that eventually only highly specialised small players or the big ones delivering Enterprise Applications will survive. It remains to be seen whether middle range players like WebCT and Blackboard will survive. (Laagland, 2004). Avoiding vendor lock-in has been a major driving force in the development of open source and open standards. There are now several standards available (SCORM, IMS Learning Design, IMS Question and Test Interoperability, IMS Learner Information Package). The connection between several standards still is a point of concern though. Integration and harmonisation of standards and architectures will be the trend in this area, along with a more dominant influence from users and user requirements on developments and more extensive reuse of learning materials (Manderveld, 2004). In the area of e-learning applications further development en integration of e-learning specifications (standards) is expected. Whereas the focus used to be on specifications supporting the exchange of content, there is now a shift towards specifications supporting the learning process and administrative and back-office

processes. Open reference architectures are being developed which make it possible to assemble and sustain complex VLEs that are build from exchangable components. A growing awareness of the interwovenness of e-learning with other realms like informal learning, personal knowledgemanagement etc. is expected to increase the need to integrate e-learning specifications with for instance specifications on process-modelling, knowledge-management, gaming etc. Furthermore the need for context-dependent and just-in-time learning will lead to applications that make it possible to generate and offer context-relevant solutions in run-time. (Kluijfhout, 2004). With the large scale availability of broadband Internet the opportunities to offer not just e-learning, but on-line education and on-line tutoring anytime and anyplace will increase. Enabling for instance a student to enroll in a course from another institution, contacting the tutor via e-mail or on-line sessions, taking the assessment on-line at the assesment centre of the local institution etc. So physical locations of educational institutions will perhaps remain centres of educational production but not necessarily delivery as well (Koopal, 2004).

### **Critical issues for the coming years**

So integration will be the critical issue for the coming years. Integration of the VLE with other related administrative or information systems and/or of different components within the VLE, in a reference architecture using open specifications and standards.

When it comes to developing an institutional strategy for sustainability of e-learning Attwell (2005, p.60-63) offers a useful list of recommendations, if some perhaps rather self-evident. There's one recommendation in particular to further address here: develop partnerships and networks. As Attwell points out earlier on in his report this might not only help overcome the problem of limited resources but might well be in fact most adequate for the provision of lifelong learning.

### **3. The National context**

This section should address the issue to what extend the above relates to the Austrian situation. Part of this is covered in the 'Antrag im Rahmen der Ausschreibung des Bundesministeriums für Bildung, Wissenschaft und Kultur – Entwicklung und Umsetzung von e-Learning/e-Teaching-Strategien an Universitäten und Fachhochschulen'.

### **4. Institutional LT strategy options**

The purpose of this section is to translate international trends to strategic options for higher education institutions.

## Learning technologies objectives options for UIBK

For UIBK learning technologies can both be a tool in support of its teaching and learning mission, as well as an academic research topic/field.

When applied as a tool in support of learning and teaching, various ambition levels are possible:

- LT in support of learning and teaching *logistics*: electronic availability of study guides, lecture notes, sending in papers, registration for exams, consulting student results, etc. This is how electronic learning environments in most HE-institutions are used these days: as an additional service besides the regular lectures.
- LT to increase *efficiency* of the learning and teaching process: mainly by substituting real-life lectures by electronic courses, thus saving on lecture time, travel time by students, use of buildings, etc. In practice mainly applied by HE institutions to reach 'distance' students. This can be applied in 'full-distance' mode or in 'blended-learning' mode.
- LT to increase *effectiveness* of the learning and teaching process: by supporting new and more effective learning strategies through ICT, e.g. simulations, case-based education, problem-based group work, dual-mode learning, etc. Here LT-application is an integral part of the didactical approach.

In practice, one might see a combination of approaches between faculties and between lecturers. When applied as a tool in support of learning and teaching, LT should always be considered in relation to the pedagogical and organizational context.

When considered an academic field however, LT should not be confused with pedagogy and organization studies, but should be considered a separate field of study.

## LT organizational structuring options for UIBK

Opting for a certain scenario will have implications for organising the required activities within the organization.

The logistics scenario: this requires the availability of a stable logistical system (not necessarily a VLE), and can be implemented without too much disruption of the existing culture and work procedures. Preferably with centralised technical support, and decentralised functional support.

The efficiency scenario: this requires the availability of a stable VLE with at least sufficient interaction functionality to support distance learning and teaching. When aspiring for conformity, one institutional VLE may be selected with central technical support. When diversity is allowed, faculties may opt for their own VLE. As this scenario will at least partially imply a change in the teaching process, the existing culture should be taken into account, and work procedures may have to be adapted. To result in effective adoption, a solid implementation trajectory will be required, with extensive decentralised functional support for lecturers. Special educational scenario's will need to be developed, tuned to distance learning and teaching. Besides the provision of central technical support (responsible for technical implementation and management), this also requires support from educational technologists

(responsible for functional implementation and management), and user support (first- and second-line help desk function).

The effectiveness scenario: As this implies the application of LT as an integral part of optimising the effectiveness of education, it impacts deeply on one of the institution's core processes. An overall change management process, of which the application of LT is part, will be required. This is a long-term endeavour, which will be facilitated by extensive prior VLE experience. A central Steering Committee with various Work Groups (e.g. for didactical scenario's, quality assurance, tooling, work processes, etc.) will lead such a change process.

The research scenario: LT research may be positioned at various places in the academic organization, depending on the emphasis, priority, means, etc.

- Under an existing research group (e.g. Pedagogy, ICT).
- As a separate research group.
- As a thematic research topic, overlaying various research groups.

Organizationally linking the 'tool' and the 'research' scenarios: the more important the use of LT becomes for the institution, the more vital it becomes to secure that the application of LT in the learning and teaching process is linked to LT as a research field, to secure constant feeding with the latest developments and opportunities.

## **LT implementation strategy options for UIBK**

These depend in part on the ambition (the LT objectives and related scenario to be realised) and the available organizational structuring options. The following are relevant variables to be consider in defining an implementation strategy:

- Scope: the selected scenario (see above).
- Gap: the extent to which the LT ambitions (selected scenario) differ from the present situation.
- Size: the number of faculties, courses, lecturers, students, etc. to be involved in the implementation.
- Phasing: sequential or parallel implementation between faculties.
- Speed: the speed with which the implementation should be realised.
- Steering: bottom-up, top-down, or mixed model.

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## Appendix B : Short note on universities' strategic plans

The strategic plans have all been gathered searching the world wide web. A selection has been made from universities across several countries: Germany, UK, USA and Canada. The aim was not to make a representative selection, but merely to find some interesting, illustrative examples of strategic plans. The following plans have been assembled:

[http://www.uni-stuttgart.de/online/res/Medienplan\\_2004.pdf](http://www.uni-stuttgart.de/online/res/Medienplan_2004.pdf)

[http://www.uni-ulm.de/veroeffentlichungen/struktur\\_entw\\_plan/Medienentwicklungsplan.pdf](http://www.uni-ulm.de/veroeffentlichungen/struktur_entw_plan/Medienentwicklungsplan.pdf)

[http://www.newmedia.uni-freiburg.de/Profil/MEP\\_revised\\_final.pdf](http://www.newmedia.uni-freiburg.de/Profil/MEP_revised_final.pdf)

<http://www.leeds.ac.uk/about/stratplan/index.htm>

<http://www.fiveyearplan.bham.ac.uk/vision.htm>

<http://www.abdn.ac.uk/admin/docs/straplan3.doc>

<https://www.washington.edu/president/tacs/charge.html>

[http://depts.washington.edu/pettt/2003\\_PETTT\\_Prospectus.pdf](http://depts.washington.edu/pettt/2003_PETTT_Prospectus.pdf)

<http://www.e-strategy.ubc.ca/about.html>

<http://www.trek2000.ubc.ca/principles/index.html>

[http://cio.osu.edu/planit/planit\\_current.pdf](http://cio.osu.edu/planit/planit_current.pdf)

<http://planning.mala.bc.ca/mandate/documents/TheFutureUseofTechnology-March2003.doc>

[http://www.mala.ca/docs/Institutional\\_Service\\_Plan\\_2004-07.pdf](http://www.mala.ca/docs/Institutional_Service_Plan_2004-07.pdf)

Several German Universities offer elaborate plans regarding educational technology, called 'Medienentwicklungsplan'. Examples have been chosen from the Universität Stuttgart, Universität Ulm and the Albert-Ludwig-Universität Freiburg. All three of these plans describe an integrated approach in which educational technology is envisioned to support administrative processes, educational provision and support and to open up new markets ('industrieller Weiterbildungsmarkt für Hochschulen'). With respect to the educational process educational technologies will support the entire workflow from enrolment to assessment and quality assurance. In the research area new technologies are expected to offer opportunities for knowledge transfer and commercial exploitation of scientific knowledge (Medienentwicklungsplan der Universität Stuttgart: 'Wissenstransfer und der Vermarktung von universitärem Wissen').

The plans describe organisational structures and in the Freiburg plan incentives ('Anreizsysteme') as well to reach the stated goals. The German plans stress the importance of central coordination and organisation, not just to achieve consistency ('einheitliches Gesicht'), but also to achieve cost effectiveness, compatibility and effective support: 'Gewisse Dienste, etwa eine Lernplattform, aber auch andere Server, müssen zentral angeboten und gepflegt werden. Ansonsten entstehen Inkompatibilitäten, unnötiger Aufwand und die Unmöglichkeit, Support zu gewährleisten.' (Stuttgart).

The websites of UK universities mostly offer strategic plans of a more general kind with one or two paragraphs on innovation or IT strategies. The University of Leeds' Strategic plan 2002-2006, the University of Birmingham's Five Year Plan and the University of Aberdeen's Strategic Plan 2004-2009 have been selected, with the latter providing more detailed information on two years' and five years' targets.

The search for recent strategic plans from US and Canadian universities proved somewhat problematic. A general impression was of relatively old strategic plans (2001) and scattered technology approaches, as illustrated by information offered on the websites from the University of Washington and the University of British Columbia which is added. Lots of initiatives but rather scattered and seemingly strictly divided (e.g. 'academic technology' and 'information technology' (Washington) / e-Learning, e-Research, e-Community (UBC)). The Ohio State University does offer a comprehensive Information Technology Strategic Plan 2004 (printed copy except for Appendices). Also interesting is the approach of Malaspina University-College, where a university wide Taskforce on Education and Technology has delivered 'A Report on the Future Use of Technology in Teaching and Learning'. The report has had an impact on the subsequent Institutional Service Plan 2004/05-2006/07.

## Appendix C: Meeting schedule

<b>February 24th</b>		
08:30 – 09:30	Rektor	
10:00 – 11:30	Bänninger-Huber, Wieser, Märk	
13:00 – 14:00	Kath.-Theologische Fakultät (Scharer, Sandler NM) Rechtswissenschaftliche Fakultät (Wachter) Fak. f. Bildungswissenschaften (Möller, Hug, Aigner)	
14:30 – 15:30	Fak. für Betriebswirtschaft (Bank, Hugl NM) Fak. für Politikwissenschaft & Soziologie (Rief NM) Fak. für Volkswirtschaft (Sendlhofer, Walde NM)	
16:00 – 17:00	Phil.-Hist. Fak. (Friedrich, Meixner NM) Phil.-Kult. Fak. (Herdina NM) Fak. f. Psychologie und Sportwissenschaften (Juen, Leidlmair NM, Hotter - Vertretung Nachbauer, Sachse ?, Weber ?)	
17:30 – 18:30	ÖH Vorstand u. Fachschaften Behinderte (Egger) Frauen	
19:30	Dinner	

## Appendix D: Listing of issues handed out preliminary to the interviews in the follow-up mission

The listing of issues below can be used to structure the interviews, but a more open format is also possible.

The issues directly relate to the 'Desk study on learning technologies strategy for UIBK' and the definition of learning technologies used there: 'the means of establishing the functionality of an e-learning system, that is, to analyse, design, develop, deliver and evaluate learning opportunities for learners in certain contexts and knowledge domains'.

1. Strategic objectives to which learning technologies at the Leopold-Franzens-Universität Innsbruck should contribute.
  - What are major motives to strengthen the use of learning technologies in Austrian higher education?
  - What are major *external* motives to strengthen the use of learning technologies at UIBK?
  - What are major *internal* motives to strengthen the use of learning technologies at UIBK?
  - With which strategic objectives could the further expansion of learning technologies at UIBK be in conflict?
2. Educational, technological and organizational requirements to be addressed to secure the realisation of learning technologies opportunities.
  - What are the major didactical challenges when further expanding the use of learning technologies?
  - What are the major organizational challenges when further expanding the use of learning technologies?
  - What are the major technological challenges when further expanding the use of learning technologies?
3. Phased approach for their implementation and secured future operation.
  - To what extent should the *application* of learning technologies to support day-to-day teaching and learning be linked to *research* into learning technologies?
    - Be based on a common agenda
    - Be organizationally linked
    - Be financially linked

- .....

- When further expanding the application of learning technologies at UIBK the following aspects should be considered. Briefly react to each:
  - Scope = the strategic objectives addressed and LT ambitions
  - Gap = the extent to which the LT ambitions differ from the present situation
  - Size = the number of faculties, courses, lecturers, students, etc. to be involved
  - Phasing = sequential or parallel implementation between faculties
  - Speed = the speed with which the implementation should be realised
  - Steering = bottom-up, top-down, or mixed model.

**Appendix E: Advise on the development of a Learning Technologies Strategy at the Leopold-Franzens-Universität Innsbruck - presentation by Prof. Dr. R. Koper, December 14, 2005**

# Advise on the development of a Learning Technologies Strategy at the Leopold-Franzens-Universität Innsbruck

Prof. Dr. Rob Koper

Open University of the Netherlands

Educational Technology Expertise Center

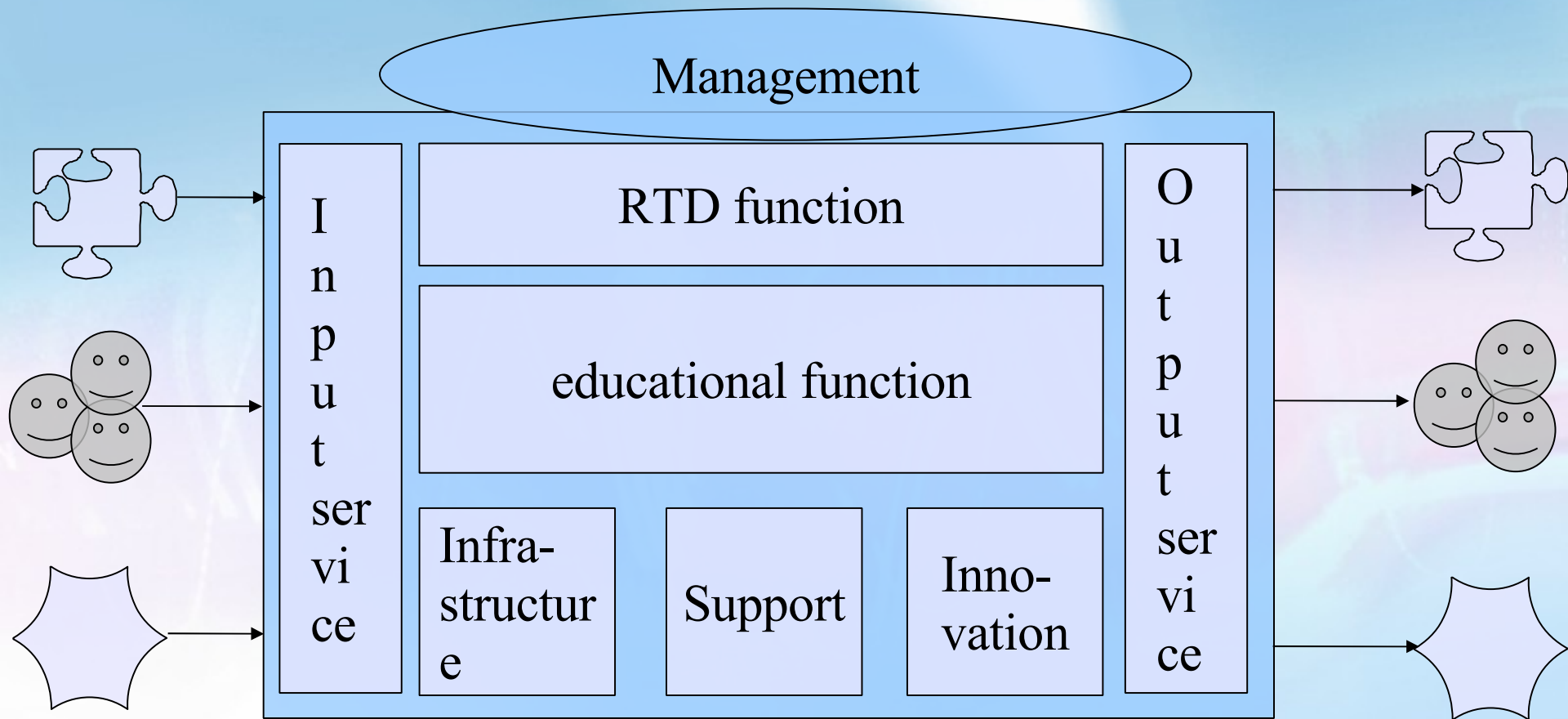
# Context

- Period of change:
  - a. BaMa
  - b. Reorganisation
  - c. e-Learning/e-Teaching agenda
- Uni Innsbruck is an early campus-wide user of an LMS (blackboard)
- However: 'times they are a-changing': new educational approaches, new demands, new technological possibilities, new organisation, new structure of the curriculum, ...
- Need for a strategy on 'e-learning'

# Approach

1. Desk study on learning technologies describing the European context: state-of-the-art, trends and critical issues, including analysis of other universities strategic plans
2. Consultation with top-management
3. Interviews with academic staff

# University as a 'Knowledge Factory'



ICT effect all these functions!!

# Major Conclusions

- Majority of staff applies e-learning at rather basic level (course info, share lecture notes/powerpoints)
- Large gap between strategic opportunities for e-learning as identified by a relatively small group of staff and neutrality or indifference towards e-learning by a larger group.
- Deployment of e-learning depends largely on enthusiastic individuals instead of institutional policy (incl. reward mechanisms)

## Conclusions (continued)

- Deployment of e-learning differs considerably between faculties, departments and individual lecturers (opportunity for peer-learning)
- Widespread apprehension about management's motives (cost reduction instead of improvement of quality of teaching and learning) for e-learning
- There is ample room to experiment with the use of new technologies to innovate teaching and learning

# Consequence

- e-learning is still perceived and organised as something separate from teaching and learning
- The major driver for European Universities to invest in e-learning:  
to make their education more accessible, more effective, more efficient and more attractive and to explore new markets (lifelong learning, integration of learning in the workplace, ...)
- In the current context of the UI, it will be problematic to realise this massive step forward to innovate teaching and learning and to explore new markets.

# Recommendations

1

e-Learning at UI should move beyond its present *logistical* support focus and should start *adding substantial value to the teaching and learning process*, including blended learning and (a limited number of) distance learning courses

## 2

First successes come from intrinsically motivated individuals, but further expansion of e-learning will require *incentive mechanisms* for staff to promote the effective use of new technologies in teaching

Rewards initiatives based on proven success; define such success criteria (eg effective use of e-learning in foundational courses with large number of students)

# 3

Within the university there is a strong need to establish *common ground* on e-learning:

Need for a structured assessment and transfer of good practices and experience throughout the university, complemented with the advise of external experts (define criteria for good practices, an assessment procedure and a funding mechanism)

4

Establish a *support facility* to help faculty to use and design effective, efficient and attractive e-learning courses

(supplement to the current support on the use of the technical infrastructure)

# 5

For the time being Blackboard should remain the preferred LMS at UI.

At the same time the Uni should start to explore and experiment with the use of future e-learning infrastructures that will replace Blackboard in a few years

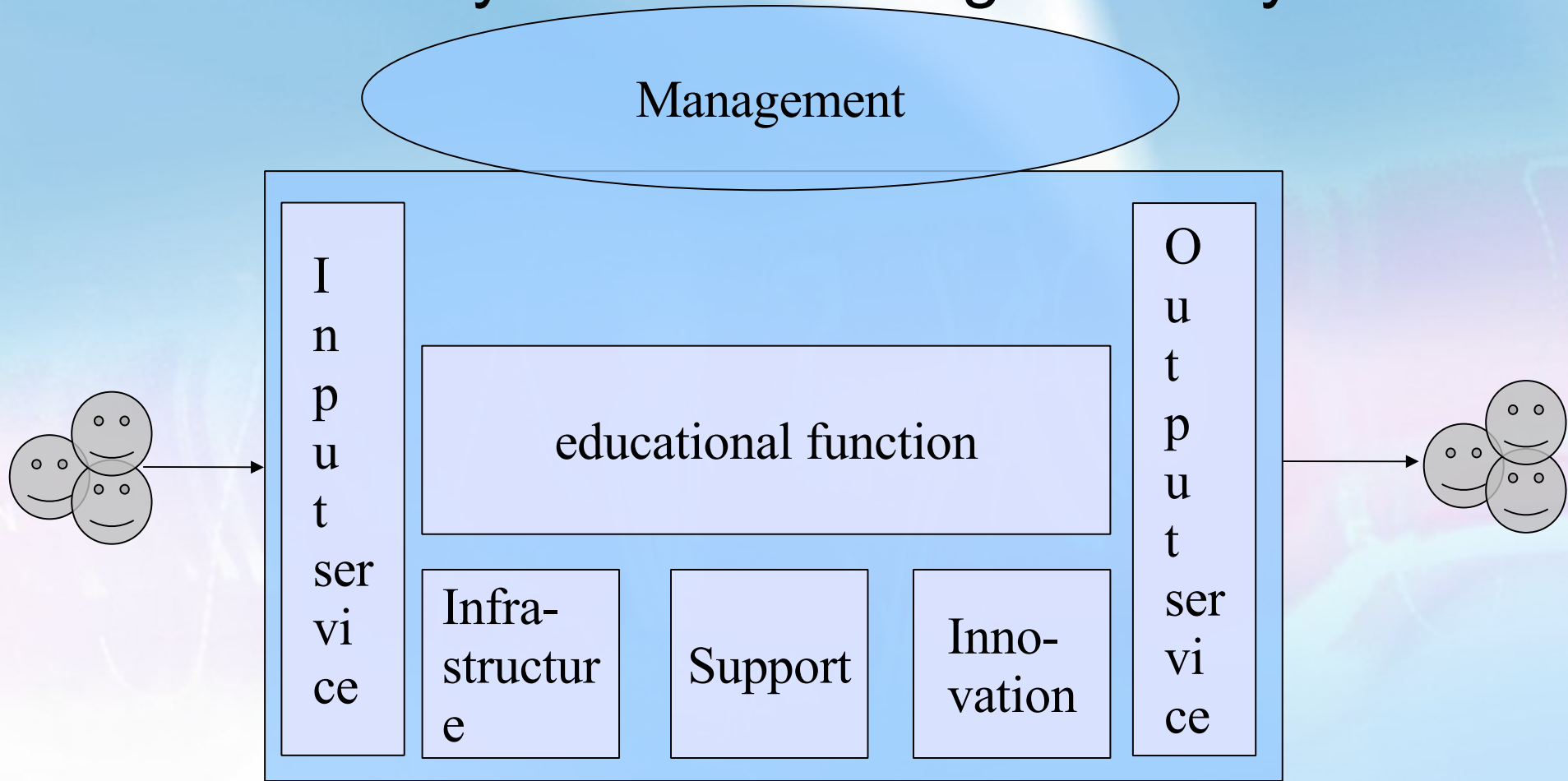
(mainly standards based, interoperable e-learning infrastructures based on Service Oriented Architectures)

# 6

Operational e-learning use and Innovation and RTD work in e-Learning should be distinguished as much as possible: separate infrastructures, separate management, support and funding (regular versus innovation funds)

Also, stimulate high-quality experiments with new technologies in education, but be clear about its experimental status to staff and students, and use regular assessment criteria for the quality of RTD (e.g. peer-reviewed publications, impact and dissemination measures)

# University as a 'Knowledge Factory'



Thank You!

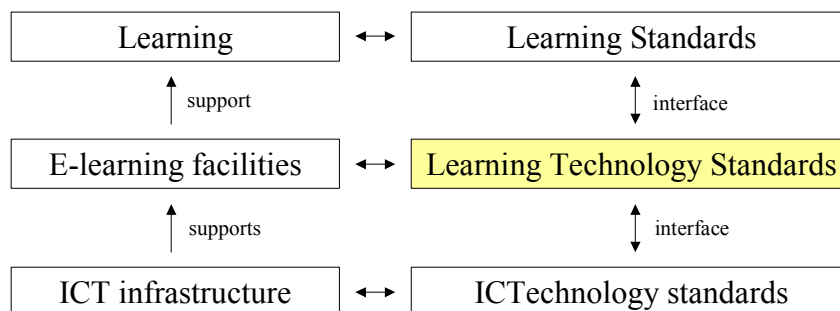
OpenUniversiteitNederland

**Appendix F: Learning technology standards and their  
implication for higher education – presentation by Dr. E.  
Kluijfhout**

## Standards in daily life

- They are everywhere
- They refer to certain norms
- Standards make life predictable
- Adoption can range from local to global

## Standards in the learning domain



# Learning technologies

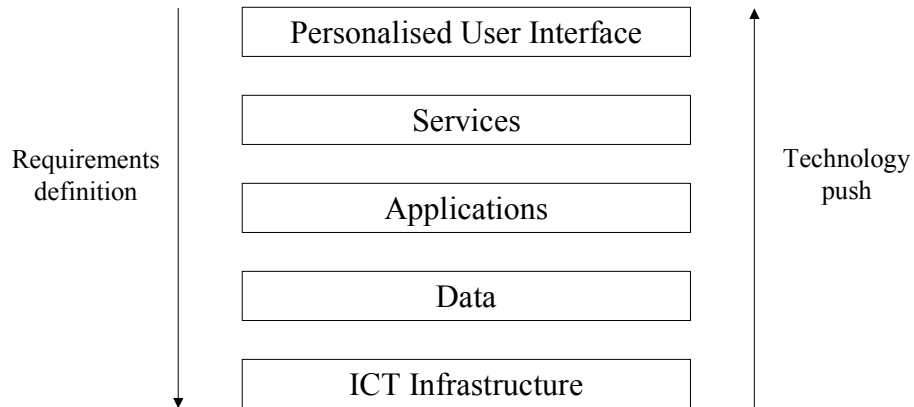
- Evolved over the past 2-3 decades
- Fast succession of technology generations
- Easily accessible and young field with few rules and regulations
- Wide variety of LT adoption levels and products between (and within) institutions

## LT standards on what?

- Data definitions (learning objects, student characteristics, etc.)
- Interoperability between applications:
  - Data formats
  - Packaging
  - Sequencing
- Personalised Learning Services (SO-Architectures)

Overall motive: drive towards integration and harmonisation

# LT system levels



## Some existing LT standards

- Metadata
- Repository interfacing
- Content packaging and sequencing
- Assessment
- Student and course data
- Accessibility
- Learner competencies
- Learning activity modelling
- .....

## What LT standards may do for you

- Prolong the shelf-life of e-content
- Share, distribute and re-use e-content
- Create interoperability between systems and between domains
- Cooperate with others
- Become less dependent on one system/supplier
- In future: compile personalised e-learning environments

## Problems that LT standards will not solve

- The production of inferior learning materials
- Sub-standard teaching practices
- Sloppy records keeping
- Ineffective organizational procedures
- Attitudes that foster the creation of 'islands'
- High costs of education

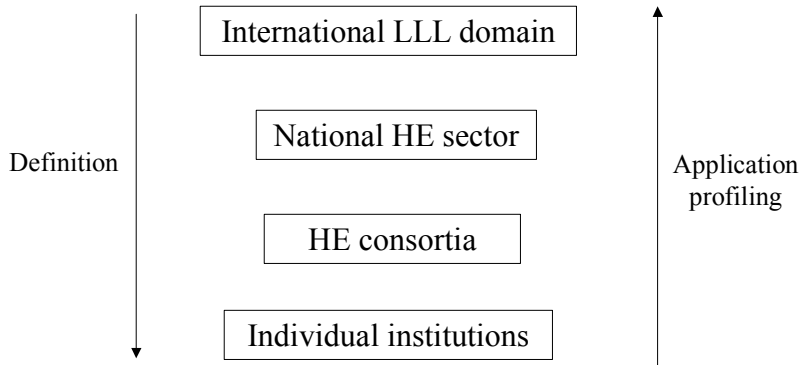
## Problems with present LT standards

- There are too many of them
- Together they do not cover the full education domain
- Some are overlapping
- They are constantly changing
- Data definitions between standards are not harmonised
- Some only support the most basic pedagogical models
- Some are rather empty one-dimensional containers
- ‘Conformance to standards’ means different things to different people

## Specifications, standards, user requirements and application profiles

- *Specifications* are typically drawn up by (inter)national research communities (e.g. IMS, CETIS-SIGs)
- These are then tested by *user groups* (e.g. AICC)
- And finally submitted to official national or international *standards* bodies (e.g. IEEE, ISO)
- Applying standards in real life through the creation of *application profiles*

## LT standards scope in HE



## Standards landscape

Domain \ Scope	Individual Institution	National HE Sector	Internat. LLL domain
Learning standards			
LT standards			
ICT standards			

# Austrian HE and LT standards

- Adopting LT standards?
- Application profiling of standards?
- Creating new LT standards?
  
- Data?
- Systems?
- Architectures?
  
- How will they add value to HE?
- Not everything that is possible may be useful

## For more info

- [www.cetis.ac.uk/statis/standards.html](http://www.cetis.ac.uk/statis/standards.html)
- [www.imsglobal.org](http://www.imsglobal.org)

[eric.kluijfhout@ou.nl](mailto:eric.kluijfhout@ou.nl)

[eric.kluijfhout@home.nl](mailto:eric.kluijfhout@home.nl)

**Appendix G: TENCompetence: a new e-learning strategy –  
presentation by Prof. Dr. R. Koper**

# TENCompetence: A new e-learning strategy



Building The European Network for Lifelong Competence Development

Prof. Dr. Rob Koper  
Director of R&D into Learning Technologies  
Workshop Leopold-Franzens-Universität  
Innsbruck, Austria, 15 December 2005

# TENCompetence Project

- EU IST–Technology Enhanced Learning Integrated Project
- 4 years: December 2005 – December 2009
- Budget 13.8 million euro + additional for pilots



**TEN Competence**

Building The European Network for Lifelong Competence Development

# Partners

- Open Universiteit Nederland (co-ordinator)
- ALTRAN (Software de Base, S.A. Madrid)
- LogicaCMG
- Universitat Pompeu Fabra Barcelona
- GIUNTI Interactive Labs
- Centre for Research and Technology - Hellas
- L3S (Universität Hannover)
- INSEAD (Institut Europeen d'Adm. Des Affaires)
- The University of Bolton, representing The JISC
- Universiteit van Amsterdam
- Sofia University "St. Kliment Ohridski"
- SURF
- Synergetics



**TEN Competence**

Building The European Network for Lifelong Competence Development

# Objective

- Development of an European Infrastructure for lifelong competence development
- Develops and integrates new pedagogical & organisational models for lifelong competence development
- Infrastructure is based on integrated open source components, integrated into a SOA
- To be used by any individual, school, team or organisation to develop competences
- We build on existing methods, open standards & open source tools



**TEN Competence**

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# Pilots & Associated Partners

## Pilots:

- Training for digital cinema
- Lifelong learning for health care workers
- Lifelong learning for people responsible for the water management in the Nile region in Africa
- Antwerp Lifelong Learning City

## Building a growing network of associated partners:

- bring in use cases
- early access to software and documentation
- organise additional pilots
- develop business

You are invited to participate!



**TEN Competence**

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# A European Infrastructure For Lifelong Competence Development

## Why?



**TEN Competence**

Building The European Network for Lifelong Competence Development

# Problems to be solved by TENCompetence

- Current **Pedagogical & Organisational Models** for learning *do not meet the demands* and possibilities of lifelong competence development and the new learning technologies that are available
- For individuals, groups and organisations it is hard to **get an overview** of all the possible formal and informal learning opportunities that are available, and to identify the most appropriate ones
- For an organisation it is hard to **assess the competencies** of applicants, employees and learners who have studied and worked in a variety of settings or multiple countries
- The availability of **support** is crucial for effective task performance. Current e-learning environments provide too little effective and efficient support to the users
- Worlds of knowledge management, education, training and informal learning are **not integrated well enough**: many fragmented methods & tools



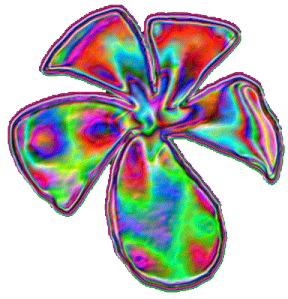
**TEN Competence**

Building The European Network for Lifelong Competence Development

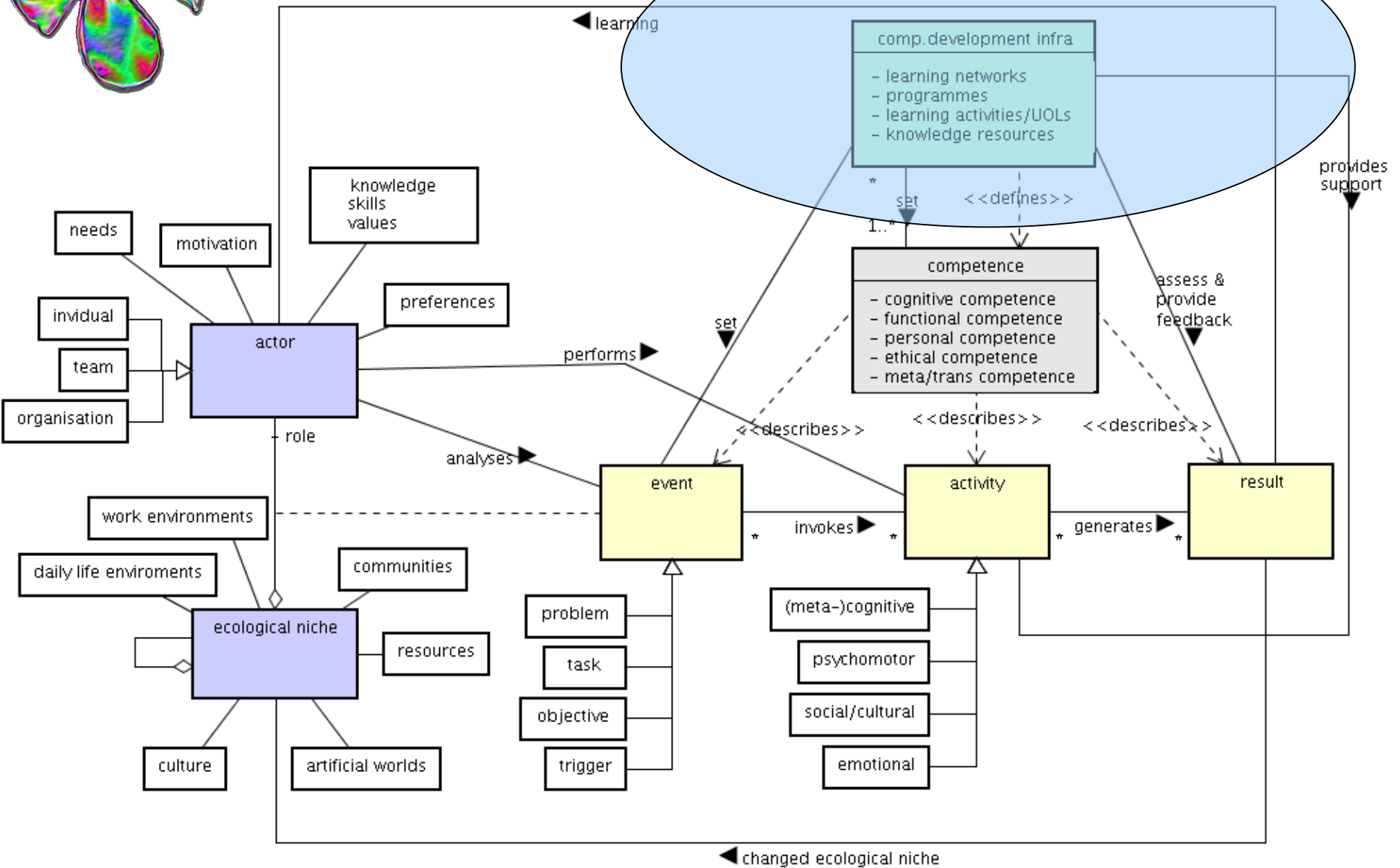
# Key role for 'competences'

- The concept of competence can bridge the world of education, training, knowledge management, human resource management & informal learning
- Many definitions, problem for system development
- Difference:
  - Competence: Effective performance in a domain at different levels of proficiency
  - Competency: Skill (synonym)
- Initial definition of 'competence' and 'competence development' in the project (next slides...)





# TENCompetence Infrastructure





# Elaboration of the Infrastructure



**TEN Competence**

Building The European Network for Lifelong Competence Development

# The Vision: how will it work in future?

- One learning network per occupation/domain of expertise
- A competence framework for each learning network that specifies effective performance in the field for different proficiency levels
- Formal or Informal Competence Development Programmes (including dynamically created learning routes) that are aimed at the attainment of proficiency for one or more competences in the competence framework
- Learning activities or units of learning that are available/shared in the network and are the building blocks of the programmes
- Knowledge resources that are available/shared in the network and are used in the learning activities and units of learning



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# How will it work? <continued>

- Members of the learning network:
  - People in the profession (from very beginners to experts)
  - Suppliers of formal and informal programmes/courses
  - Suppliers of materials, tools, etc. needed in the profession
  - Employers and professional associations
- Functions to be performed by the members:
  - find & perform knowledge/learning activities/programmes
  - share & discuss knowledge/learning activities/programmes
  - support trainees in the profession
  - provide feedback on quality of programmes/courses
  - provide feedback on quality of tools from suppliers
  - define professional competences at different proficiency levels
- Facilitated by: Social Exchange Mechanisms; Support Agents



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# Requirements for the infrastructure

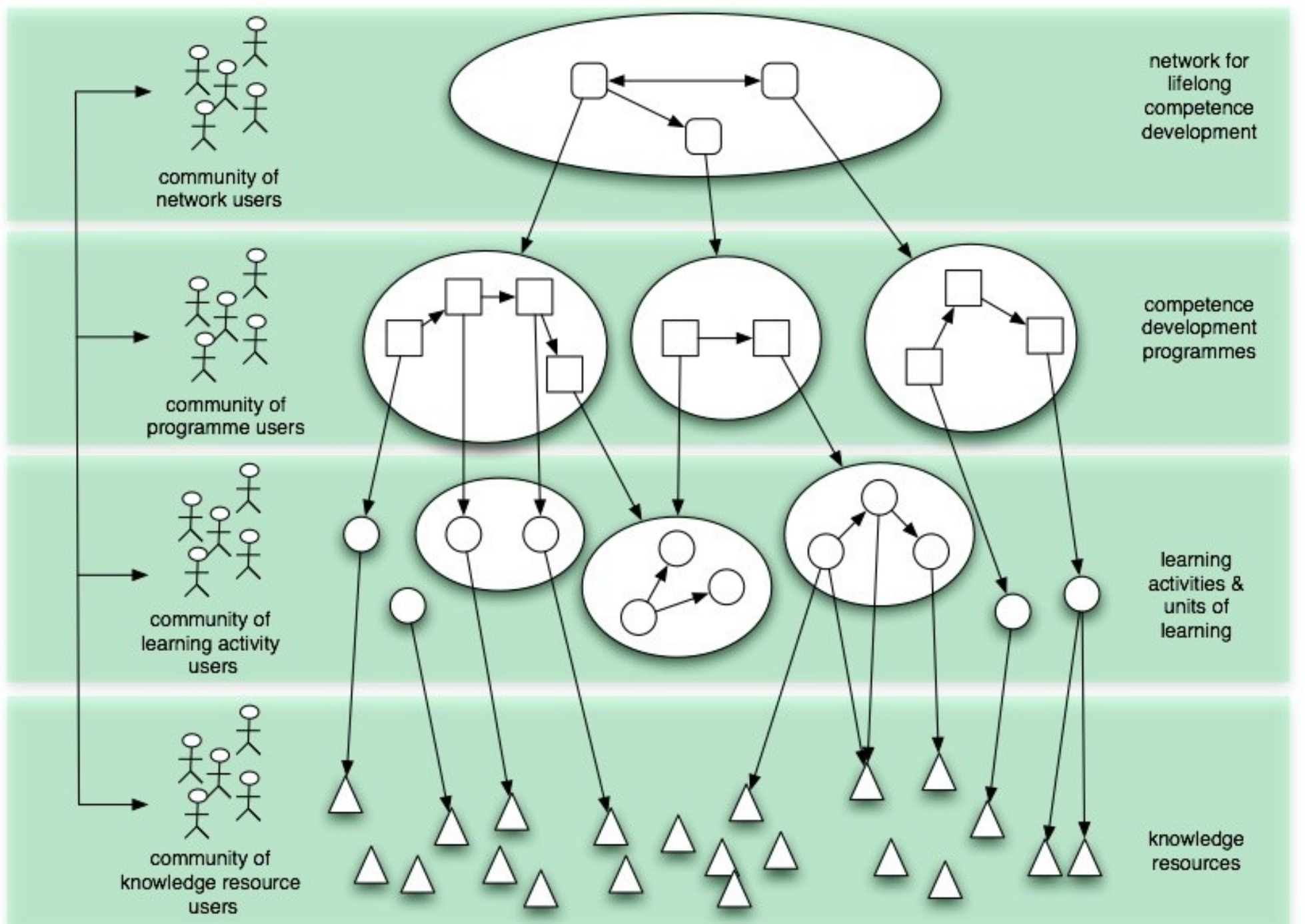
1. Based on **new pedagogical & organisational models**
2. Supports users to **find** adequate learning resources to develop their competence
3. Support to facilitate the **pro-active sharing** of resources
4. Support for competence **assessment**
5. Support agents to **help users**
6. Includes principles and policies of **self-organisation**
7. **Integrate** isolated open source tools



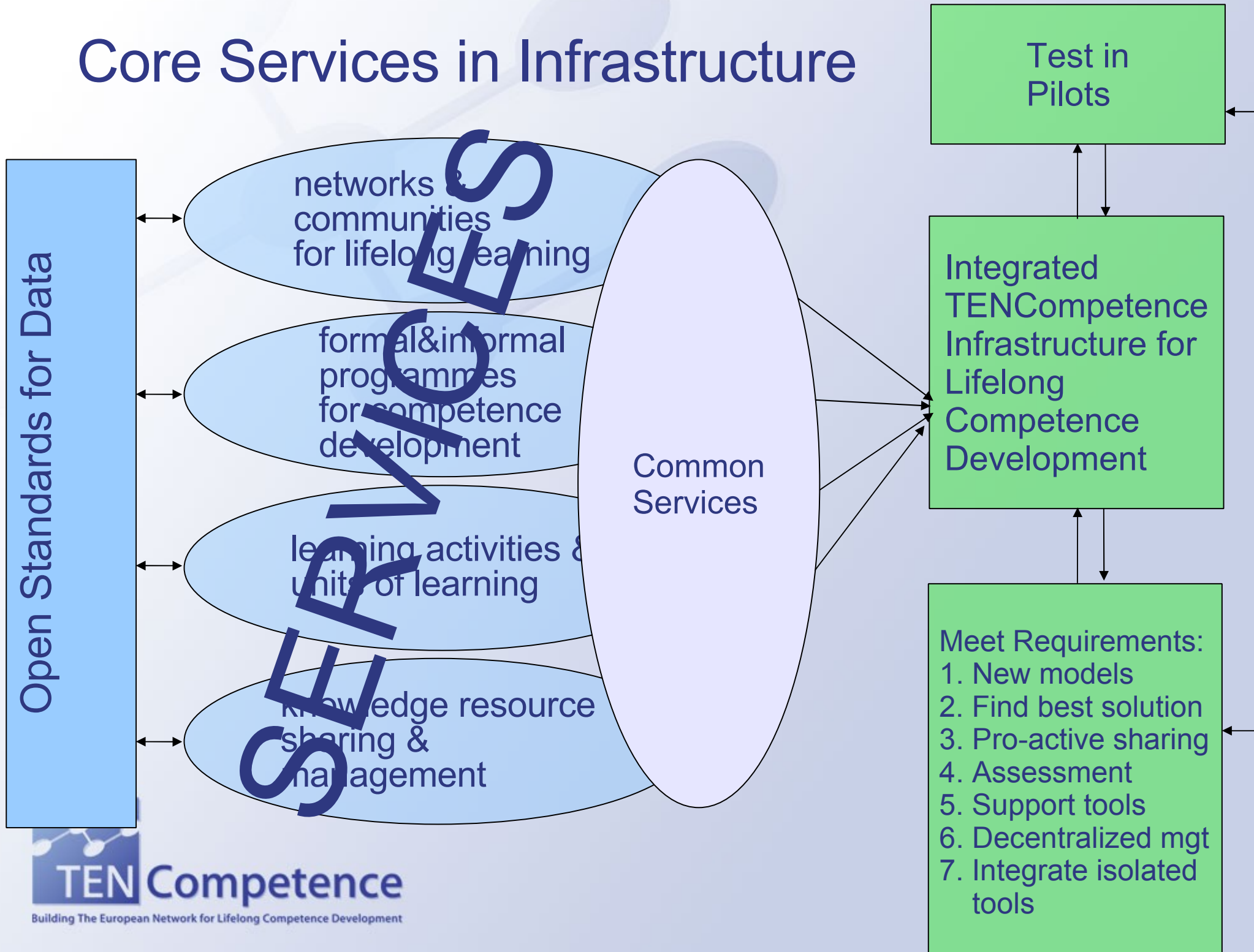
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# Integration of 4 'worlds'



# Core Services in Infrastructure



# Examples of Common Services (From ELF)

## Common Services

AV conferencing	Alert	Archiving	Authentication	Authorisation
Calendaring	Chat	Content Management	Context	DRM
E-mail management	Federated Search	Filing	Format Conversion	Forum
Group	Harvesting	Identifier	Logging	Mapping
Member	Messaging	Metadata Management	Metadata Schema Registry	Packaging
Person	Presence	Rating / Annotation	Resolver	Role
Rules	Scheduling	Search	Service Registry	Terminology
User Preferences	Whiteboard	Workflow		

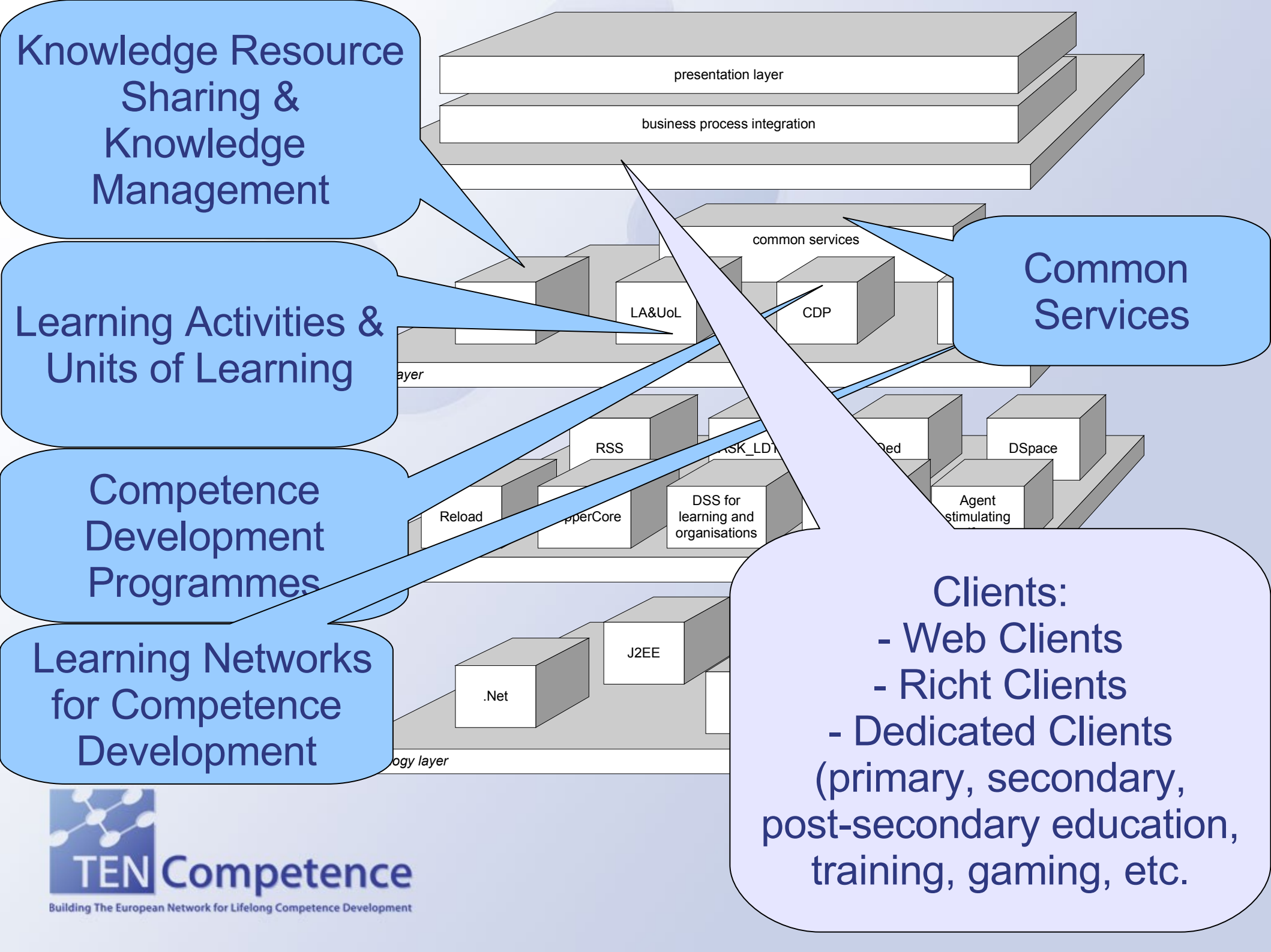
# Example: Learning Activities & UOLs Services

- Edit Learning Activity,
- Add Learning Objects, Common Services ('lower' service layer!)
- Sequence Learning Activities to a Unit of Learning
- Personalise a Learning Activity or a Unit of Learning
- Classify Learning Activities and UOLs
- Store Learning Activities and UOLs
- Search Learning Activities and UOLs
- Rate the quality of Learning Activities and UOLs
- Get users (community) that use a certain LA or UOL
- Contact user via (skype, chat, mail, etc.)
- ...



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# References

- [www.tencompetence.org](http://www.tencompetence.org) (project)  
(also for becoming an associated partner)
- email: [info@tencompetence.org](mailto:info@tencompetence.org)  
[rob.koper@ou.nl](mailto:rob.koper@ou.nl)
- Thanks!

