

The flying auditorium – elearning at the University of Vienna

Edinburgh | WebCT Vista International User Conference

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1.

This is the cover of a novel by a German writer of the twentieth century: The flying classroom, by Erich Kästner. [CLICK] The novel first published in 1935 deals with a boarding-school geography class imagining travels to far distances when developing new matters for the subject, such as flying to the North Pole when discussing the Arctic. At that time it was one of the big literary utopias written in Germany, but it now seems to have become true. I chose this metaphore and applied it to University context because it clearly depicts what the eLearning platform of Vienna University is intended to be: A FLYING AUDITORIUM -- a ‘boarding-school-like’ learning-environment, far-reachingly accessible, and geared to transcend space and time.

2. The vision of students being able to attend classes in their pyjamas is not still up in the air any more. Children and career shall be more easily reconciliable for women, professorial supervision of students is peanuts, and the horrifying experiences of classes overcrowded with people are *passé*.

3.

In the following discourse, I will present an overview on the eLearning implementations at the University of Vienna. It is conceived as a showcase of a large scale University with its specific historical, technical, social, political context and its specific requirements. I will briefly refer on the history of Vienna University and the “Strategy Project”, bridge over to the current technical background, support strategies and impact of the platform on students and teachers, and end up my paper with a critical outlook on our future perspectives. I will try to supply you with an approximative panorama on the eLearning activities at Vienna University, but please be advised that, as a member of the Computer Center, my approach is primarily technical.

Before I start to step into the subject, let me present to you the representatives of Vienna University in Edinburgh: at first, our head of department, Dr. Peter Marksteiner from Vienna University Computer Center (department “Software and centralised systems”) and Dr. Petra Oberhuemer, from the Center for Teaching and Learning (whom several of you might already be acquainted with from the Barcelona Meeting last year).

4.

HISTORY

Founded in 1365 by Duke Rudolf IV and therefore being one of the oldest universities in Europe, Vienna University – therefore being called Alma Mater Rudolphina – looks back on a 640 year-old tradition of Higher Education – for a long time ponderous and down-to-earth. The first e-mail-service was generally supplied in 1986. Not before 1990, Vienna University became its first fix internet connection to the CERN in Geneva. Today it has become a so-called large-scale University. We currently count 80.000 users – students, teachers, administration and staff – all enrolled in the central database of the University of Vienna. But eLearning is only one aspect of the services provided. The takeoff of the auditorium went slowly.

5.

It was a wearisome lecture of stressful pioneer work. While the first scattered elearning initiatives reach back to early innovators in the 90s, the University of Vienna – driven by the reforming University Act of 2002 – started an unprecedented and for the first time concerted implementation of eLearning: the faculty-overlapping “Strategy Project”. It was targeting at an amelioration of science and teaching, and – what was the most important – should be appropriate for the exhaustive application at a large scale university. What was needed was an additional and voluntary service whose skills all teaching staff would easily be able to learn and in the long run autonomously apply. We felt a strong need to build up reliable elearning-structures, which led to an intensive collaboration between the

6. didactically aligned Center for Teaching and Learning (Rectorate) and the technically aligned 7. New Media Support Unit (Computer Center).

8.

After a short phase of experimentation with open source PHP-platforms such as “Ilias” that did not fully meet our needs, the responsables felt the requirement to switch to a more workable commercial solution and eventually concluded to deploy the java-based WebCT 2.1 on a single (server) environment. It consisted of one application server and one database server. From then on we were taking advantage of a platform renounced for its scalability. The results can show their face. In this pilot phase we were having 20 courses while now we are hosting at least 300 for every semester (= term) on Vista.

9.

CURRENT TECHNICAL BACKGROUND

After one year of testing the loads made it necessary to switch to a bigger server solution on Vista 3.0. The migration of all existing data on a cluster in 2005 rendered the services more efficient, so that the eLearning-Platform presently hosts 80.000 users. It consists of one database, two application nodes and one admin server and runs about 350 to 400 courses every semester for more than 16.000 students out of 35 study programmes. The often contested and ambitious goal on a way full of technical, political and bureaucratic obstacles has finally been put into practice: we have reached a university-wide service within a password-protected learning area.

10.

It is important to note that for Vienna University we have to consider very specific **requirements** that differ in some aspects highly from the anglo-american system of higher education, for which WebCT is made for. It is a large-scale university with a very heterogeneous structure of curriculums and courses, comprising 65.000 students and about 7000 staff. After curricular reforms, we momentarily offer degrees from the traditional system, such as “Magister” and “Dr.”, AND are planning to settle the “Bakkalaureat”, Master, Dr., and PhD from the Bologna system among the existing structures.

11. Let me point out the differences to our standard installation. At first, the differences to the anglo-american learning-style of education: standard courses in WebCT 2.1 were – for example - formerly made for about 20-30 students. At Vienna University it occurs that we have courses with 350 students – and more - enrolled. This has been customized in Vista 3 concerning grade book, performance, user tracking and assignments. These developments were one reason for our decision to migrate.

Keeping in mind that we are a large scale university with a huge number of users and courses, we were aware of the fact that the WebCT-internal admin interfaces would not be sufficient for us. We need connection to our own databases. So we were forced to knit our own interfaces associated to these databases, and thus at the same time were obliged to invest in higher resources of external programming and staff.

Furthermore, the characteristics of anglo-american curriculums are very strict in comparison to the Austrian “open structure” in rebuilding phase. The distinction in designer and instructor view is not very logical from our point of view – because teachers ARE by default designers and instructors. They do not need five different ways to get to the same tool. Teachers we are training are often confused by the double or triple structure of file manager, content inventory and basic view. Group work highly welcomed in Austrian courses is not fully supported by WebCT: a common filespace for filesharing was promised for Vista 3.0 and is still missing. Let me refer in detail to the consequences of these different structures in part IV where I will discuss evaluation and critique.

12. Mapped in the Admin Interface of WebCT Vista, we have one institution level spread into 35 groups that represent what I would analogically call faculties. The faculties themselves are divided into a course level that contains the titles of the virtual courses at Vienna University. On section level we have the according number of the course that is requested from an online course directory.

13. But the distinction between institution, group, course and section does not fulfil our needs of structure. For our requirements, we would need two more levels. The problem we also have is that single courses can be associated to different faculties (i.e. “Studienprogrammleitungen”).

14.

SUPPORT STRATEGIES | IMPACT | RESONANCE

The most important aspect to sustain the elearning activities at our university is: they are totally carried by a sense of **voluntariness**. Support should not press, but only assist people who want to implement eLearning in their teaching. The principle of the elearning initiatives of the University of Vienna is based on **Blended Learning**, a mixture between attendance and online courses. We wish to guarantee the maintenance of a partly autonomous ‘elearning apparatus’, with as little support necessary as possible.

After the responsables had made the experience that former projects with very strict prescriptions had not led to the desired acceptance of the platform, they decided to change the outlines at the commencement of using WebCT. For the use of WebCT we did not dictate any terms, but promoted an open structure in order to rather encourage people to build up their online courses. What we would do not was putting any pressure on designers by strict terms of reference in content-building. Little by little individual designers found their style and designed courses suitable to create templates from, that in the end could be placed at the disposal of others, for instance those instructors who led courses of the same type. To be sure, we could observe that these developments led to very heterogeneous and unclear structures in course-design but also a very wide-spread use of the tool. This was the challenge and the objective: to integrate eLearning harmoniously into the existing infra-structures of the University of Vienna.

If ever any full professor or student now is keen to use WebCT for the first time, he or she has **automatically access** to the WebCT Personal Desktop. This is made by a query of the central user database. To make his course appear in the course list and supply it for students, he or she has to register their course via an external interface. At the moment we are creating the section in the WebCT-Admin-Interface manually and import the data via IMS-ID in the external administration tools.

15.

The external administration tools include the **points of intersection** between the Vista Cluster and the databases of Vienna University. An important one is a **comprehensive software** for the entire **university administration** of courses, students and grades. For that reason we are not able to use the WebCT built-in tools for course administration. Another one is the university-wide **Online-Course-Directory** (developed by our head of department, Peter Marksteiner). The student enrolment for courses appearing on the course list works more or less automatically. We have a triple structure. **16.** For lectures and other courses without admission restriction, students can enrol directly via online course directory. Teachers will register their courses with the help of an external interface linked to WebCT, and dispose **17.** accessorially of an interface for monitoring the student enrolments. Teachers are normally enrolled as designers and instructors and are totally free to design their own courses.

18.

The initial utilisation of the platform – I refer to the teacher’s side - was cautious but consistently increasing. The steering concept was to find multipliers in faculty staff in order to convey the idea and the knowledge of the platform. From every faculty the support team had contact to teachers, mostly from the abandoned ILIAS-phase. They became “pioneers” who did voluntary and honorary work for their eLearning initiatives. The teams of the Center for Teaching and Learning and the Computer Center developed and edited a support strategy program in order to proceed the spread of media competences. This was realised in training concepts and learning modules being persistently optimized. It currently consists of the following elements.

19.

eLearning Introductory Course

(all-day event – technical and didactical part)

Advanced Training Courses (technical)

- Content Building (half-day events)
- Communication Tools
- Learning Groups and Assignments
- Assessments

Didactical & Technical Workshops

Didactical Advanced Courses („Blended Learning“)

Training Course „e-competence“

We see the Introductory Course as basis for an enrolment in the Advanced Courses, but it is not committing. The Advanced Courses are rather independently applicable. The Didactical and Technical Workshop is pragmatically oriented. With the beginning of every semester, we offer two or three sets of courses – normally more introductory courses. If ever we perceive (by a surge of support or enrolments) an increase of demand, we can flexibly react – and offer more.

As for the personal support, we have two systems of assistance.

20. For didactical questions, teachers contact the Center for Teaching and Learning.

21. For technical reasons they contact the New Media Support Unit of the Computer Center.

Assistance is offered by a separate New Media Support Helpdesk people can reach by telephone or personally within the opening hours. Both institutions work closely together and produce documentations and guidelines associated to the structure and infrastructure of the platform.

22.

As we have built surroundings like an FAQ database accessible by web – we could filter out most of the “standard support” like login-problems, problems with the very complicated installation of Java Applets and Updates. Currently we mostly support teachers having problems with their content-building or Java-Applications. We are also supervising the first projects with big online entrance or final exams on faculty level (which already led to high but still digestible loads – from the huge number of logins in CPU).

Another important challenge will be the integration of WebCT in a streaming project currently prepared at the University of Vienna. Videostreams of the courses held shall be placed at the disposal of students either synchronously and on demand. This will also require a reliable storage system that is already in preparation. One new investment project is a powerful high speed scanner that converts printed scripts into pdfs, that can be implemented as course content in the WebCT Vista-Sections. This is an important institution/equipment highly welcomed by designers because it guarantees to integrate traditional teaching strategies into new ones – and to ease the transition of both working structures.

Students rather seldomly get personally in touch with us - the platform is – from the student’s view - intuitive enough that students normally get along. To assist teachers additionally with their activities, the Center for Teaching and Learning assigns so-called **e-tutors** to teachers who still feel clueless or uncertain in their media skills.

23.

EVALUATION AND CRITIQUE

As a natural result of our policy of voluntariness (and also as a result of our independence), emphasis initially has not been laid on evaluation, but there were several initiatives of the Center for Teaching and Learning to obtain a qualitative feedback to the platform that helped us optimize features, eliminate bugs and ameliorate the supporting course concept for designers and instructors. There were 4 university-internal and external (that is: international) evaluations with each different outlines regarding the use of WebCT Vista. Let me enumerate, group and summarize the feedback of the study in order of priority. Most of the critique will be – as it fits in the scope of such a conference – filtered and so far focussed on technical issues.

At first glance it may sound like a perfect idyll, but behind the curtain – or shall I say, below the wings - it is not just as simple as that. During the development of the existing structures we had to face – and are still facing – many obstacles, troubles, bugs and features that would not satisfy our specific requirements. At least *our* flying auditorium carries a heavy cargo of bugs and problems that I would like to refer to in detail.

Generally teachers complained about the anglo-american learning style depicted/imaged in the platform course structure. To be sure, courses are scalable, but still the grade book, features like assessments and assignments are not aligned to gather and hold 400 students per section. There were also complaints about the lacking usability and intuitiveness of the interface. We paid 800 € for a German language pack that was not gender-sensitive and full of linguistic errors. We could never bring it in because it had technical errors. As we have many teachers using Vista for their language courses we would strongly need reliable language packs – and switchable ones. When we started to implement WebCT Vista 3.0, the remotely administered installation produced a bulk of system errors partially not REproducible – thus we lost the confidence of many users who withdrew from using the platform. The User Tracking also did not output reliable data, and there is a bug in the feature that prevents us from turning it off (which we would have to do for legal reasons of data security).

There was also a lot of critique concerning the HTML-editor, and the problem that Vista does not support hypertext in a comfortable manner. Teachers would acclaim that the email-forward in the mail-tool would not be more easily to monitor and activate by teachers. Likewise the Chat tool: the chat lives from the fact that you can see who is online at the moment. But the column “Who’s online” next to the course list is not very useful for that because it is only sporadically correct. A teacher told me that a student who could certainly not be online, because he was sitting in the auditorium WITH his turned-off computer, was indicated as “online”. Java.

24.

Notably with problems concerning Java, it is like a serpentine hydra with seven heads. When you cut off one serpent head, two more heads grow in its place.

Let me point out to you our worst case scenario we lived in last October. The coincidence of a the new Java release 1.5 and the adjustment of our CISCO Content Switch/Load Balancer to SSL/HTTPS provoked that no one of the users could log in any more. This was a small catastrophe for teachers and students who had to do online tests, submit documents or adhere to other deadlines concerning the platform. We were run over by an avalanche of support febrily trying to find the cause. When I called the WebCT support they told me “oh yes, that is because of the new Java Update, it has another encryption that causes problems with SSL”. The consequence? As for the Java features, we are now interimly working on HTTP and acquired two more reliable and Vista-certified Netscaler Load Balancers in order to build up two environments: an independent one for normal operation and one for server/update/application pack testing. The test installation will be put into practice by mid-April.

Support is difficult. We have to face a very heterogeneous public with very different media competence that do not yet get any gratification for a lot of supplementary work. They are frequently frustrated. We must try to alleviate these problems to prevent them from withdrawal. This is not easy if most of the **Java** features function differently in different operating systems (such as Windows XP and Macintosh 10.2 and upper). What complicates the situation is the challenge to coach them with their browser settings.

A bug in the file manager that affects the Up- and download of files is still one of the major disadvantages.

In the following case it concerns the opening of pdfs: From the designer view (browser: firefox), if you click on an organizer page and mark “download file” the download window will be blocked. But if you click on “ok” then, the pdf-doc opens. If you do so from the instructor mode, the browser will block the whole site so that you cannot download anything. Repeating the process will eventually open the file. Likewise for students. As they do not dispose of the designer view, they will always have to repeat the procedure in order to get the pdf.

25.

The most important deficiency of our WebCT installation is the course list. It falls short of our expectations and requirements. In Vienna we have no policy of "erasing" courses or enrollments for courses after the termination of the semester. On the WebCT Homepage *My WebCT* the position of the elements can be customized individually. Elements can be administered, selectively released, set visible or invisible. Also the order and the position of the elements can be altered. Only the most important element, the course list, cannot be influenced in any manner.

The legal prescriptions of Vienna University Law impose that enrolments have to persist for at least six semesters after the presence course. This is to enable students to take exams and to access content for a longer period after the course has been held. But the problem is that the link structure is in no manner dimensioned for an hierarchical structure that guarantees a survey. You can neither "switch courses away" nor can you alter the vertical sequence of the courses on the course list, which entails that the course list gets more and more longer. At the same time the most important courses get lost. The view is unstructured and confusing. For this reason, our next challenge will be to develop a programming that helps us customize the WebCT course list to the needs of our system. We have to sustain the confidence of the users, and – on the bounce – a smooth touchdown of the flying auditorium.

26.

As for this presentation. I would like to thank you for your attention and your endurance. I hope it was not confusing. Let me now open the discussion, and maybe direct it with a question I would like to pose to the REAL auditorium...