

**COMPREHENSIVE ANALYSIS OF EXISTING LEARNING MANAGEMENT SYSTEMS
(LMSs)**

April, 2002

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Type of institution:	<i>State university</i>
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URL:	<i>http://www.cs.vsb.cz</i>
Name of training manager:(Optional)	<i>--</i>
LMS used:	<i>GLN – Global Learning Network</i>
URL of LMS:	<i>http://cisco.netacad.net</i>
Language of LMS:	<i>English, German, French, Spanish, Hungarian, Japanese...</i>
Number of years in use:	<i>2</i>
Other LMSs used:	<i>--</i>
Number of students in the system:	<i>There are actually no limitations.</i>
Number of courses available:	<i>The system is universal. At the moment there are about 8 courses provided.</i>
Typical duration:	<i>6 months</i>
Number of tutors in the system:	<i>2 per one course</i>

VSB - Technical University in Ostrava is a technical and economic institution of higher education and the principal task of which is the provision of higher education based on free and internationally oriented research. The University was founded in 1849 and nowadays there are more than 14,500 students attending their classes at six different faculties as: The Faculty of Economics, the Faculty of Civil Engineering, the Faculty of Mechanical Engineering, the Faculty of Electrical Engineering and Computer Science, the Faculty of Mining and Geology and the Faculty Metallurgy and Material Engineering. The Mission of the University is to develop a modern European technical university.

History of Faculty of Electrical Engineering and Computer Science of VSB TU Ostrava begins in January 1st 1991 when the new Faculty has been founded by splitting former faculty of Mechanical and Electrical Engineering into two new faculties.

The number of Faculty students was increased more than two times from 550 in 1991 to approximately 1200 at present time.

In 2000 Local Academy of Education for the Programme of Cisco Networking Academy (CNAP) was founded. The programme as such was created in 1997, is thought worldwide with the focus on computer networks and is provided in the form of distance education.

This analysis is divided into six parts.

1 Course development tools

2 Student support tools

3 Tutor support tools

4 Administration (student database and records)

5 Technology (quality of software)

6 Price

1 Course development tools

1.1 Course creation. How satisfactory was the LMS for course creation?

In this our case the course was created by the LMS provider (Cisco Systems).

1.2 Structure and didactic flexibility - openness. In the creation of course materials did the LMS permit didactic flexibility? Was the structure open to differing didactic possibilities?

We do not create course materials.

1.3 Teacher userfriendliness. How easy was the LMS to use by teachers and course developers?

The system use for teachers is easy and intuitive.

1.4 Support for graphics, audio and video, moving image. Did the LMS support the provision of graphical materials, moving images, audio and video in the course content?

Yes, all the above-mentioned forms.

1.5 Questioning, assessment, assignments. What provision was made by the LMS for student questioning and assessment and the design of student assignments?

There is an integrated system for examining by means of WWW, central database of student results.

2 Student support tools

2.1 Interactivity possibilities. What provision does the LMS make for student interaction?

LMS contain interactive "E-lab" tool based on Flash technology. It works as a simple simulator of computer network laboratory.

2.2 Online student to student communication (synchronous and asynchronous). What facilities does the LMS provide for student communication to other students and how successful is it? Is both synchronous and asynchronous communication between students supported?

Only asynchronous communication.

2.3 *Online student to tutor/institution communication (synchronous and asynchronous).* What facilities does the LMS provide for student communication to the tutor ion to the institution's administration and how successful is it? Is both synchronous and asynchronous communication supported? Are these support services available 24 hours a day?

Is not available.

2.4 *Resources, library, references.* What facilities does the LMS provide for student acquisition of resources required by the course, especially library resources and references to required readings?

Required readings/literature are/is provided only in the way of www links.

2.5 *Feedback on work and assignments.* What is the quality of provision of feedback to students on their work and assignments?

Students have the possibility to see their test results and correct answers of test questions.

3 *Tutor Support tools*

3.1 *Tracking students - database questions.* How user friendly is the LMS for tutors wishing to track their group(s) of students and retrieve data from the student database?

All the data/information about student test results is accessible by the teacher of the course.

3.2 *Group management tools.* What facilities are provided by the LMS to the tutors for managing their group(s) of students?

Opening the tests, to follow the statistics, cancellation of unsuccessful tests.

3.3 *Preparation of questions and assignments by tutor.* How successful is the LMS in providing tutors with user friendly and didactically successful tools for the design of student questions and assignments?

Assignments are in this stage already prepared by the system provider.

3.4 *Course planning for students (monitoring pace).* What tools are provided by the LMS to tutors to enable them to monitor and plan student progress?

Student progress is determined by the chapters, for which there are tests opened.

3.5 *User-friendly administrative systems between tutor and institution.* What provision does the LMS make for successful tutor to institution communication?

The management of the courses is directly done by teachers, the whole interaction with LMS works through WWW interface.

4 *Administration (student database and records)*

4.1 *Enrolment procedures and fee paying.* What facilities does the LMS provide for student enrolments, course allocations and payment of fees?

WWW interface.

4.2 *Passwords and security.* How successfully does the LMS handle student access to the system and the security of all student interactions with the system?

The use of HTTPS protocol.

4.3 *Student records database.* How successful is the system's student database, especially for data storage and data retrieval.

Work with student database is easy, powerful and intuitive, there is no problem.

4.4 *Examination and certification records.* What structures are provided for recording of data and results leading to examination and certification?

4.5 *Course, class and tutors database.* What facilities are provided for administration of courses, classes and tutors?

5 *Technology (quality of software)*

5.1 *Server - hardware and software options.* What is the quality of server hardware and software options? How is the system integrated with existing software?

The server is operated by Cisco Systems.

5.2 *Client - hardware and software options.* What is the quality of client hardware and software options? Does the system permit meta tagging?

Any of the WWW browsers with Flash Player plug in.

5.3 *Flexibility of didactic structure; updating, adaptability.* Is the didactic structure flexible or is it determined by the technology? How adaptable is the technology to updates and to new technology that becomes available to the market?

The structure is completely separated from the technology; there are study materials of the courses in one form.

5.4 *Limitation of size (number of students, courses, tutors..)* How satisfactory is the LMS for handling varying numbers of students, courses, tutors? How does it cope with 100, 1000, or 10000 students and large course databases?

The system is worldwide, about 9500 units/working places with approx. 228 000 students total. System is working without capacity problems.

5.5 *Speed of system.* How is the speed of the system and student satisfaction? How does it cope with downloading courses and high bandwidth materials?

The single technical core of the system, which is in USA, is very powerful. Only the lines linking up the users to the Internet limit the connections.

6 Price

6.1 *Cost of the LMS (Learning Management System).* What is the cost of the LMS to the institution?

LMS is always given for free to the institution, which becomes so called Local Academy of Education for the Programme of Cisco Networking Academy (CNAP) with the aim to provide classes of this programme.

6.2 *Annual fee.* What fees have to be paid annually for the system by the institution?

Without any fee.

6.3 *Student Enrolment fee (100 students, 1000 students, 10000 students.)* How do fees to use the LMS vary when the student base is 100 students, 1000 students, 10000 students? Is online invoicing available?

Without any fee.

6.4 *Maintenance costs: staff involved in management, IT specialists, trainers, etc* What is the maintenance course to the institution of the LMS and what staff resources are need to maintain it and keep it functioning?

The run of the system is being updated centrally by the firm Cisco Systems; from the user's point of view it is enough for the institution to retrain its staff without any special IT skills.

6.5 *Training of teachers and learners and system users.* What costs are involved in staff and student training to use the LMS system?

The system is very intuitive; there is just approx. 40 min. needed to get acquainted with it.

Conclusion: Overall evaluation:

The LMS is good, its interface for study as well as for administration is completely based on www, it is worldwide and stabile.

What features would you like to see included in this LMS in the future?

A possibility to integrate our self-developed materials as separate additional materials to the official ones. A possibility of connection / link own student database to central student database.