

We are IntechOpen, the world's leading publisher of Open Access books Built by scientists, for scientists

6,900

Open access books available

186,000

International authors and editors

200M

Downloads

Our authors are among the

154

Countries delivered to

TOP 1%

most cited scientists

12.2%

Contributors from top 500 universities



WEB OF SCIENCE™

Selection of our books indexed in the Book Citation Index
in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?
Contact book.department@intechopen.com

Numbers displayed above are based on latest data collected.
For more information visit www.intechopen.com



E-Learning Platforms for Professional Training Providers

Nicoleta Nicolau Gudanesu

Additional information is available at the end of the chapter

<http://dx.doi.org/10.5772/60851>

Abstract

The aim of this chapter is to identify alternative financial resources and practical ways for people (employed, unemployed, young bachelors, managers from public and private economic environment) to participate in lifelong learning programmes, in order to have a quality human capital in our country. The financial opportunity is the European Structural Funds, and the practical opportunity is the building and using of e-learning platforms which solve more problems: the money, the time and the professional progress using IT applications. The concerns are related to the participants' satisfaction and the interest manifested by the organization owners and managers for this kind on training.

Also the chapter presents a short history of the e-learning system and the steps of entering on the educational market and become one of the main learning tools today.

At the end of the chapter is presented such a platform created entirely by a private training provider, the system being created with European financing.

In the process of creating and using an e-learning platform the organization must take into account mainly the satisfaction of the clients (employees, young bachelors, unemployed people who need to reconvert professionally) which are saving time and money in the educational process.

Keywords: E-learning, Training, Lifelong learning, Project, Management

1. Introduction

Professional training is an important component of Romanian education for adult system, a part of 'lifelong learning' process. The actual concerns regarding lifelong learning in Romania

are concentrated on the elaboration of a national strategy, coherent and integrated, through all the interested parts and factors to act for the development of the domain.

The main obstacles in the efforts of adopting a right strategy and applying the Lisbon and Europe 2020 Strategy directives are:

- Underdeveloped culture of permanent education in Romanian organizations
- Absence of a policy for adult professional education
- Differences between regions regarding lifelong learning
- Missing correspondences between education policies and financial resources allocated
- Insufficient implication in education policies for human development of the responsible actors

The responsible ministry and authorities established a set of objectives to overcome the problems of adult education system which are:

- Increase the rate of participation in lifelong learning programmes of the young people and adults
- Increase the level of using nonformal education in organizations
- Develop education programmes for rural population
- Increase the access to education for vulnerable categories of population
- Develop IT and foreign language programmes in many organizations
- Develop and implement on-line training systems
- Identification of financial resources in state institutions and private organizations dedicated to training programmes and human resource development
- Using the structural funds for the development of the lifelong learning programmes

Due to the financial and economic global crisis, the resources dedicated to training and human resource development are very reduced or missing integrally. The solutions for this are on-line courses at low costs because of the reduced expenses vs. face-to-face courses which involve logistic costs.

The most appropriate way to finance lifelong learning in Romania in present conditions when the crisis is ameliorated but not overpassed totally are the European Structural and Cohesion Funds for Economic Competitiveness and Human Resource Development. The two national programmes together can be used for financing lifelong learning for adults.

2. What is e-learning and Learning Management System (LMS): A short history

E-learning is learning to utilize electronic and informational technologies to access educational curriculum outside of a traditional classroom. In most cases, it refers to a course, programme or degree delivered completely on-line.

A learning management system (LMS) is an electronic educational technology (so-called e-learning) through which are developed courses and training programmes.

The system (LMS) has incorporated Internet facilities, forums for on-line collaboration and virtual library with courses and materials for training at any level.

The benefits of using this kind of learning systems are dedicated to the ones who learn but also the teachers that have more time to interact on-line with the students and to prepare more interesting materials.

2.1. Short history

Distance learning appeared for the first time in the eighteenth century in the same time with postal services. Using postal services, Prof. Isaac Pitman, from the UK, in 1840 begins distance courses with his students, sending them materials and tests.

In the USA, the first distance courses were introduced in 1874 at Illinois Wesleyan University, where the distance learning was accepted as a form of education.

At the beginning of the twentieth century, Prof. Sidney Pressey, from Ohio University, developed a mechanical device used to test the students; the device was like a typewriting machine with buttons for answers and a window for questions.

After the test the system will show a page with the answers and the evaluation result.

In 1920 appeared the first elements of distance learning by TV or radio.

In 1960, the University of Illinois launched the PLATO [1] 1 programme (Programmed Logic for Automated Teaching Operations) for advanced computer-assisted instruction. At the beginning of the 1970s, the instruction was extended on 1,000 terminals. The system functioned for 4 years with improvements.

After the World Wide Web apparition in 1989 and HTML language (Hypertext Markup Language), the learning digital technologies were introduced by many universities, colleges and high schools at the global level.

In the 1990s, the LMS were used worldwide. The software were improved, and many schools and universities started to develop their own LMS and present their solutions on the market [2].

Students and teachers could use functionalities like:

- Extract and exchange learning materials

- Examinations and on-line tests
- Communicate with colleagues and teachers
- Track the progress and do tests and evaluations

The environment and the busy people facilitate the use of e-learning technologies at a large level in present days. This kind of learning extended from universities and high schools to adult education by participating in professional improvement of skills on-line.

In Romania, the process was slower than in the USA or UK.

The first e-learning system in Romania was created and implemented in 1989 at the Polytechnic University of Timisoara and was named 'Distance Learning Centre'. This is still functional today also with specific improvements and helps students to learn without being present every day or helps students without financial possibilities to learn and work at the same time.

The second e-learning system appeared in 2001 and was developed by the Education Ministry for high school exams and national yearly evolutions.

The e-learning systems are the future of learning due to the adaptability meant to meet the needs of the participant as individual, of the small and big groups without big costs and time spent [3].

3. Learning methods [4]

Learning in modern society is not linked with classroom. This situation allows development of new teaching and learning methods, dedicated to individual learning for big groups of people that are geographically located at distance. In the latest years appeared different methods of implementation for:

Problem-Based Learning (PBL) – by this method, the instructed ones are taught how to learn; there is cooperation in the group in order to solve real problems. These problems are simulated and are used to create the wish for knowledge, thinking and using resources at the participants in a specific domain.

Case Study – an active method by which there are analysed concrete problems together with the solutions known or unknown. In the learning process, the formable group receives a proposal of concrete situation to solve. There are required optimal solutions for solving the problem. Finally, every member proposes a solution; all are analysed and the best one in the given situation is found.

Collaborative Learning – the learning method by which different persons with different preparation levels act together in order to solve common problems. Learning responsibilities are distributed for each group member which is participating at the course and the most prepared member become responsible for the youngest colleagues learning process.

The method allows development of critical thinking and communication capacities. The groups include different categories of persons, from different institutions and from different

geographic areas. The method is named collaborative instruction, for the organizational and communicative components.

Team-Based Learning – it is an instruction strategy elaborated for the creation and development of the instructed teams which can solve high performance problems. The teams are formed for the entire period of learning and the activity is permanently evaluated. For the evaluation are used also the time resources of the course. The importance of own evaluation in the group and the permanent control of the team progress is critical.

For all these learning methods exist many categories of software instruments classified by the Centre for Learning & Performance Technologies from Great Britain like:

- Programmes for Web navigation – this allows to access Web pages, search systems, visualize the information on the network and interact with other instructing programmes (Firefox, Google Chrome).
- E-mail – electronic post applications. These permit the creation and utilization of the electronic post accounts, receiving, reading and sending the messages as well as attached files (Google, Yahoo).
- Integrated instruments for social networks – allow the communication with network members, the creation of own profile and the establishment of connections with network members, virtual activities on the network (Twitter, Facebook).
- Personal panels – applications for public posting of personal information (iGoogle).
- The collection and posting of news (RSS feed) – informational programmes for the news websites, in one or more activity domains specified by the posting in a specific location (work surface, gadget window) (Google Reader, Bloglines).
- Synchronic communication instruments – allow instant transmission and reception of the messages: texts, video and sound (Skype).
- Instruments for blogs and microblog creation – allow using the maximum automatic instruments for the creation of a blog. Also exists space for the posted information (WordPress, Blogger, Twitter).
- Instruments for Web page creation – allow using the maximum automatic instruments for the creation of a website. Also, exists space for the posted information (Google sites, Dreamweaver).
- Instruments for on-line working on documents – these are applications that allow the access of documents (text documents, calculation tables, presentations, databases) are kept and can be visualized and edited in common with other users (Google Docs, Zoho).
- Instruments for presentation creation – allow to create, edit and visualize the multimedia presentation with external resource introduction (PowerPoint, Impress).
- Instruments for storing and publishing the presentations – allow the publishing of the created presentations on the network; these are accessible from any place and can be the subject of on-line discussions (SlideShare, Prezi).

- Applications for Web conferences – allow the synchronic communication for many persons using the Internet resources. The communication can be realized by video, sound and text (Dimdim, Adobe Connect, Skype).
- Web images and storage organization – the applications for creating and editing the images (local) and posting it in on-line albums (Snagit, Adobe Photoshop/Picasa, Flickr/network posting).
- Applications for video and sound transmitting – systems for sound and video image with network storage. Allow the access, synchronic or not (YouTube, Flip, Livestream/video, Audacity, iTunes/Sunset).
- Instruments for time management – allow the optimal organization of the activities (schedules, meetings) for a period of time (Google calendar, Evernote).
- Instruments for the mind mapping – applications for creating a structured thinking and solving problems. Also these are strategic applications for decision-making (FreeMind, Bubbl.us).
- Instruments for course authoring (educational resources) – applications for the educational resource organizing. Allow the creation of structure for the course and for the testing systems and simulating processes and educational games (Articulate, Lectora, Adobe Captivate, Camtasia).
- The library, dictionary, maps and on-line encyclopaedias – specialized resources for studies that allow getting information for the interested ones, as exact definitions or images (Google maps, Google Books, Wiki, DEX online).
- Storage and organizing course systems – complex applications that organize the e-learning system in educational institutions (Moodle, Blackboard).
- Social platforms for learning – integrated instruments for open learning, team learning and collaborative learning for students or employees (Elgg).



Figure 1. Google Image

Studying the above instruments for e-learning, we can observe a domination coming from Google (the image of opening page of Google application is presented in Fig 1). These applications are the often used and accessed and in the future will be extended in the educational area. From this point of view, they are preferred because they are free or at low cost. Every time someone wants information, Google platform is the preferred one.

4. Google image

Considering the above description the conclusion is that, we have presented the essence of the e-learning systems and the most important instruments that help implement such systems.

5. Why e-learning is the most effective method of training employees and unemployed people

Today's organizations' experience says that there is insufficient training and a lack of knowledge sharing that prevent teams from achieving their greatest potential:

- Almost 80 % of low-performing organizations and 62 % of high-performing organizations are not investing enough money and time in human resource development.
- Dysfunctional teams in different organizations affect the productivity.
- More than 25 % of employees leave their present job if they see no opportunity for training and professional development.

Traditional training methods do not cut it anymore because of the fact that up to 85 % of trainings fail to deliver a positive return on investment.

5.1. Results obtained by using e-learning

- E-learning can be used for own-employee training; they can consult the platform whenever they feel that an information is missing.
- Using on-line training, more than 60 % of employees are motivated to remain in the organization.
- It is already known that the learning curve increases by 60 % in using e-learning than participating in face-to-face training sessions.
- It is studied that e-learning covers courses and application materials five times more than in face-to-face learning.
- Participants in e-learning programmes have 9 % higher knowledge than the ones in face-to-face courses.

5.2. Costs saved by e-learning

- Fifty percent of costs from traditional learning are saved by using e-learning.
- E-learning decreases instructional time by up to 60 %.
- E-learning consumes 90 % less energy than traditional courses.
- The productivity of an employee increases by 30 % using on-line courses.

5.3. E-learning helps organizations grow

Companies with a strong learning culture are 46 % more likely to be the leader in their industry:

- Forty-seven percent of organizations use mobile devices for learning.
- By 2016, 80 % of learners will be on mobile.
- Increasing with 37 %, the employees' productivity.
- Increasing with 34 %, the response of the employees at the customer needs and requests.
- Increasing with 26 %, the ability of workers to create quality products.
- Increasing of employee engagement with 18 %.
- Increasing with 72 %, the competitive advantage by using e-learning as training tool for employees.

6. Good practice example: E-learning platform for training

A good practice example is a project implemented by a Romanian organization named RADINC – a consultancy and training provider which activates on the specific market from 2009. The activity of the organization is focused on training provided in European-financed projects or in private contracts for young bachelors, employees of different organizations with low level of preparation and unemployed people. The training is provided also for own employees that have to be well prepared and competitive to be able to train other people.

The vision of the management related to development and evolution regards:

- Personalized training plans for own employees and for any other clients
- Effects on employees and on their current activity by using new competencies
- Development of the programmes that help in optimizing the activity of the companies (clients)
- Establishing the professional path for each employee

In order to achieve all the objectives established, the organization applied for European funds to build an e-learning platform that will be used to develop training programmes for those who are employed and unemployed in various domains.

Following this chapter, we will present the project and the e-learning facilities for training and e-commerce module – build for the payment of the courses by the on-line participants.

The project is financed from Competitvity Program – ITC dedicated to public and private sector, operation,, Sustaining e-economy” increase the competitiveness of economic operators” and consists from building and implementation an e-learning platform for on-line training. The training services are supplied to employees, unemployed, young bachelors, future employees etc. E-learning is a training system consisting of methods and instruments using the Internet, by which educational activities in the time they can do it are ensured, without time constraints and obligations to participate in training sessions.

Specific objectives:

- To increase the competitiveness of SMEs by assimilating new knowledge for the employees themselves
- To realize the infrastructure necessary for e-learning system implementation (IT&C and peripheral equipment, licenses, software)
- To train the personnel that is going to ensure the maintenance of the new e-learning system
- To translate the interface in the English language

Project components and activities:

- Consultancy services for business plan elaboration that include market analysis, selecting the organization who will realize the plan, contracting services and receiving documentation
- Publicity on the project including information of public opinion interested in project implementation and building a website and maintaining it
- Acquisition of IT equipment, licenses and services for e-learning software and infrastructure equipment
- Project audit
- Project management and implementation

The project manager is the GM of the organization, which is also the legal responsible in the relation with the financing authority and the person that checks the expenses and operational activities of the project. The project team includes also persons for financial responsibility and technical responsibility.

The methodology for implementation involves following and achieving the budget, timeline records of the project and performance criteria.

The actual IT infrastructure formed from one classroom which has 28 computers used for face-to-face courses, 8 computers for support employees and management, 1 server, 2 printers and 1 projector was changed for the necessities of implementing the project, buying new equipments necessary for the good functioning of the platform.

The e-learning platform created by project is dedicated to all categories of people who want to learn and allows transmitting the knowledge by electronic instruments. The learning can be asynchronous (self-learning) and synchronic (with on-line teacher and other participants) as can be seen in Fig. 2.

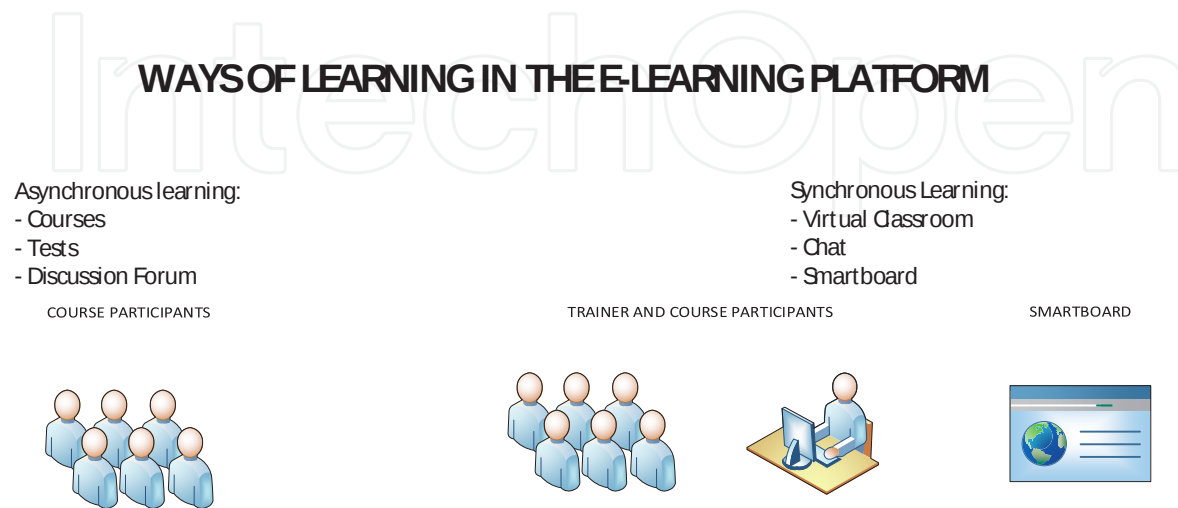


Figure 2. Ways of learning using E-learning platforms

The system created has two components:

1. Software component that includes:

- Operating systems for servers (hypervisor)
- Database system
- Software platforms for streaming – cluster configured
- The application and Web servers for the on-line solution
- Content for the platform (courses, teaching and learning materials, tests)
- The logical architecture of the e-learning platform is presented in Fig. 3.

What can the user (participant of the course) do on the platform?

- Access all the functionalities for users (log in, change password).
- Each user can be registered to many courses and can set a personal calendar for the courses where is registered.
- Each user has a 'TO DO' section for himself to establish personal tasks.
- Users have access to forum and e-mail notifications.

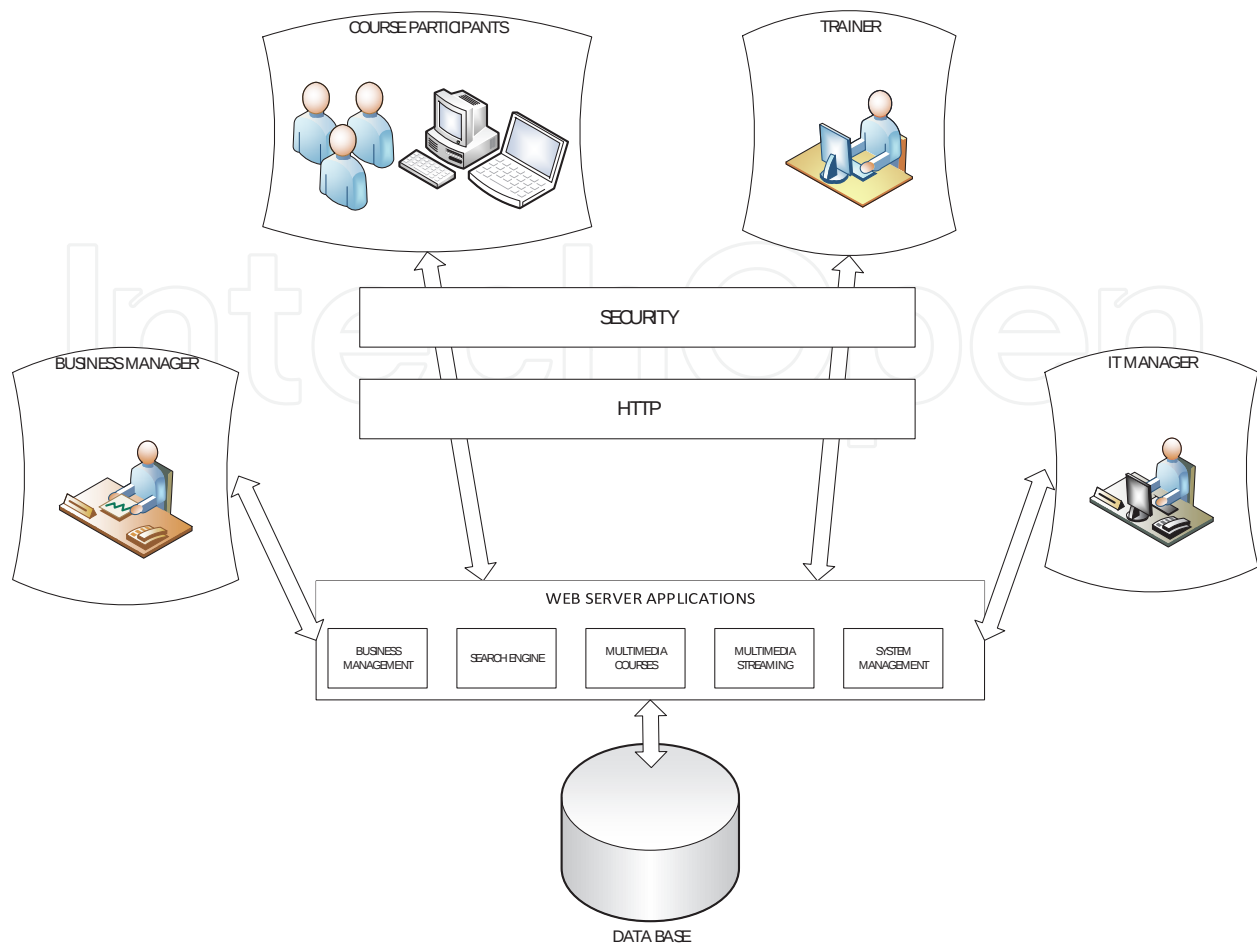


Figure 3. E-learning System's Components

- Users can send/post documents and materials on the platform for trainers and colleagues.
 - Users can see the history of the course followed.
 - All the users can pay the course on-line using the e-commerce facility of the platform.
 - The interface allows the teaching and learning in many languages.
 - The evaluation is based on sets of questions for each course (with multiple answers, true/false or writing responses).
 - The finalized test is sent automatically to the trainer for the final evaluation.
 - The content for a specific course is used only by the registered participants.
 - Users can participate in interactive learning sessions with colleagues and trainers.
2. Hardware component includes:
- Blade servers – 3 ride servers with different functionalities
 - Internet gateway

- Routers, switch and other accessories
- Software for servers
- SAN – storage area network
- Monitors
- Interactive blackboard
- Printers
- Video projector

The technical configuration is presented in Fig. 4.

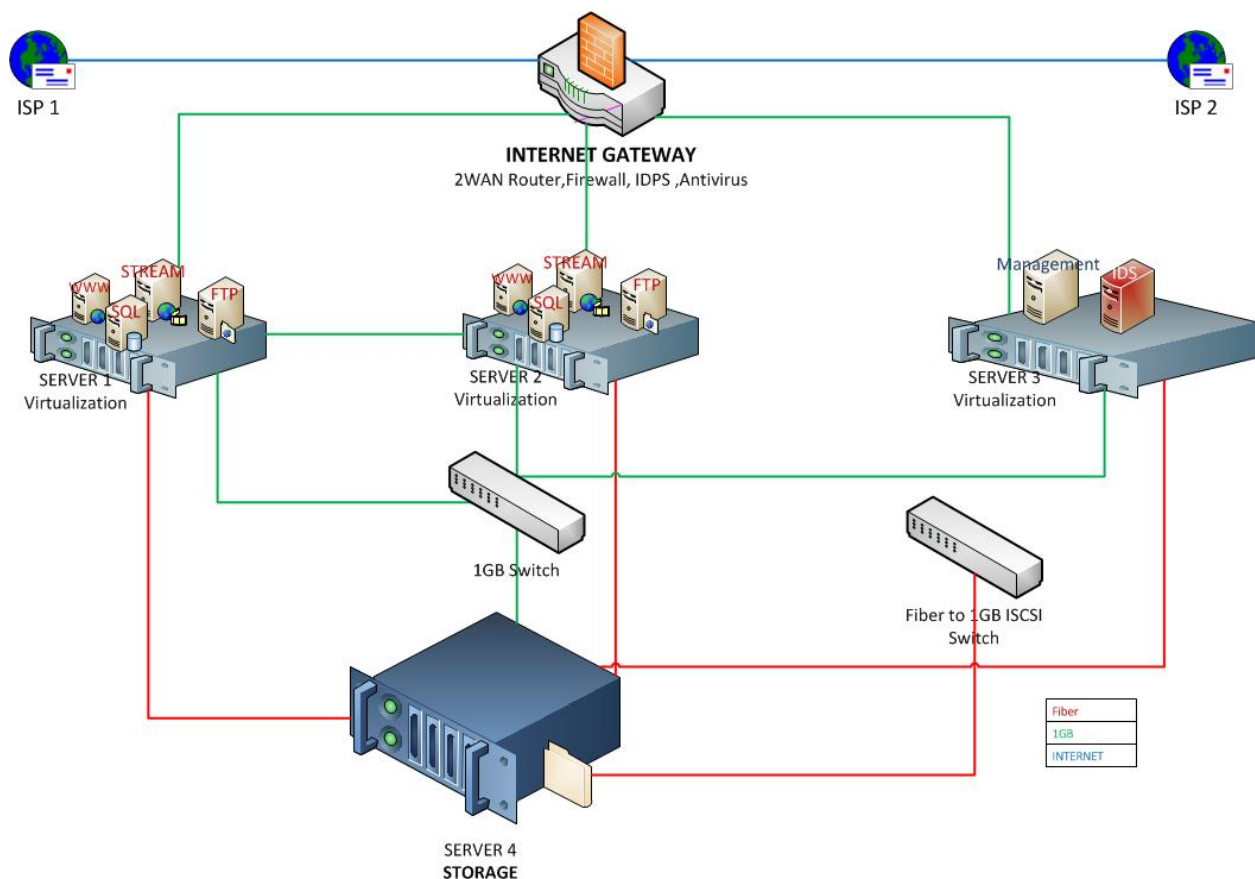


Figure 4. Technical configuration of the e-learning system

At present, the project is implemented and functional; on the platform are studying over 1,000 people.

Some images with the e-learning platform are presented in Figs. 5, 6, 7, 8 and 9.

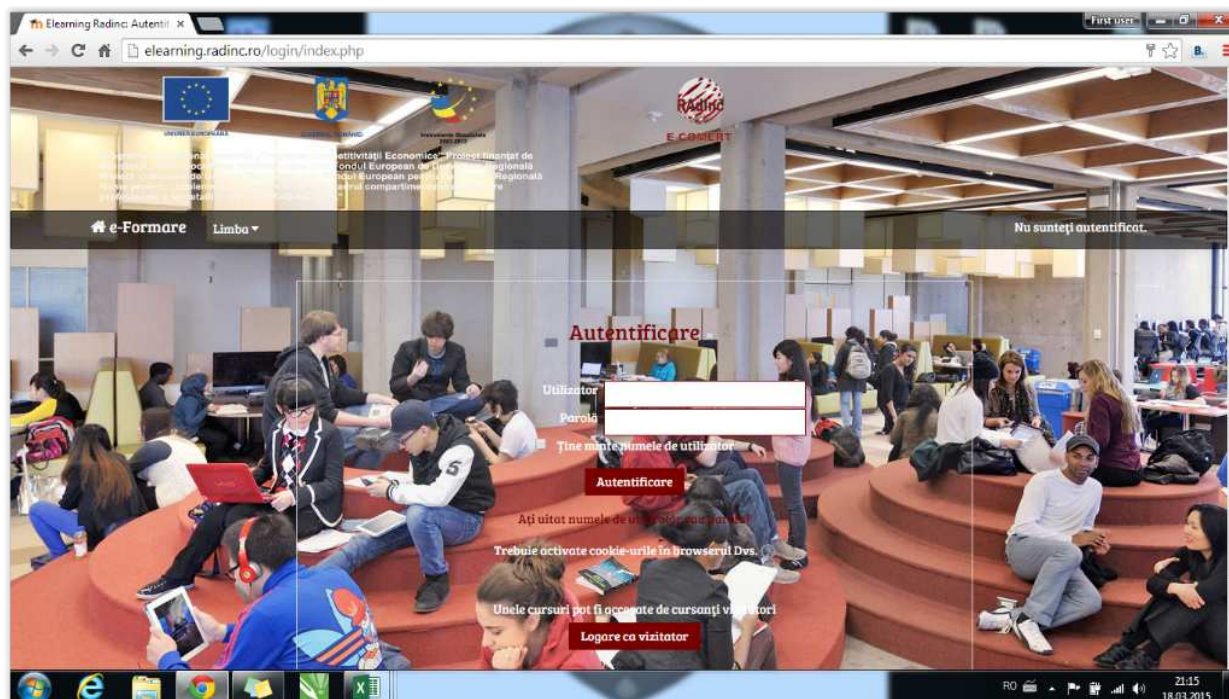


Figure 5. Authentication window – e-learning platform

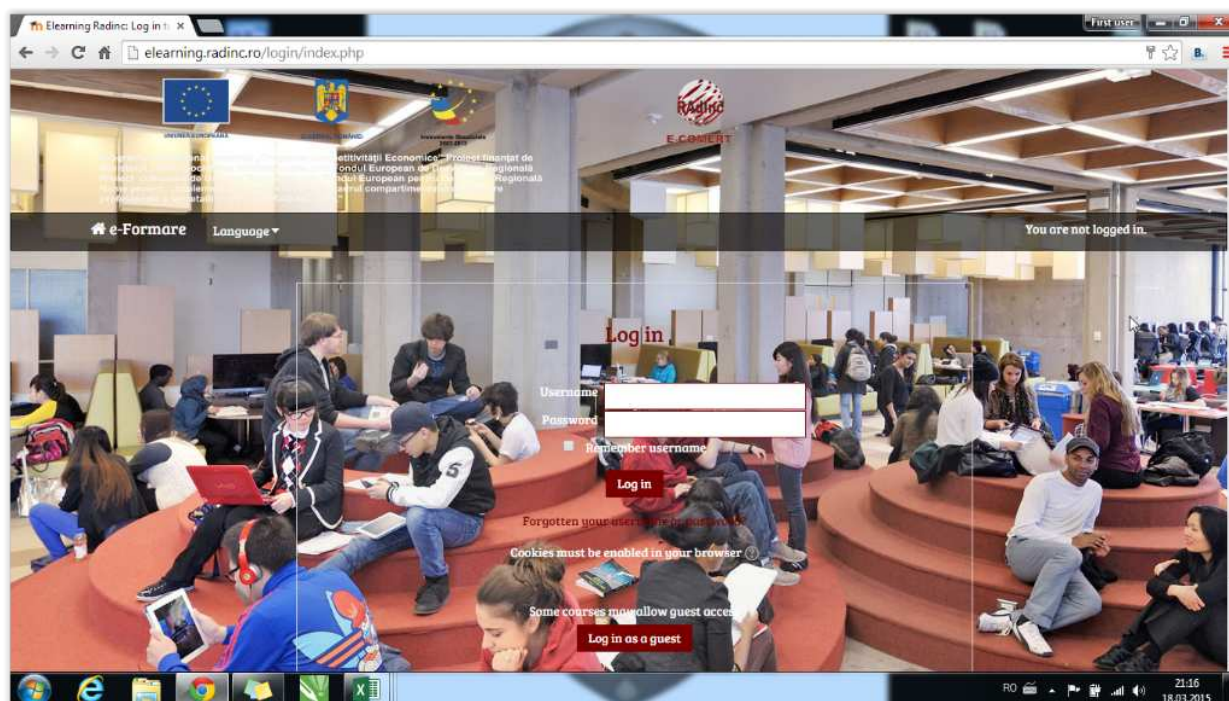


Figure 6. Login user (course participant)

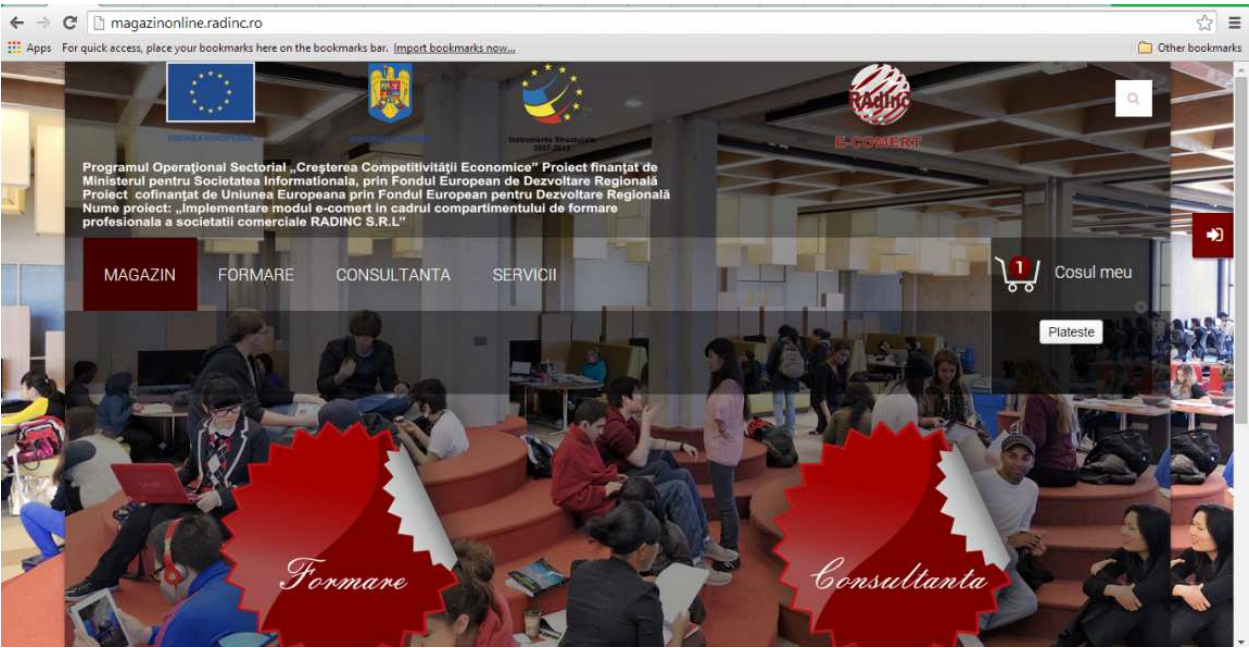


Figure 7. Home page – e-learning platform

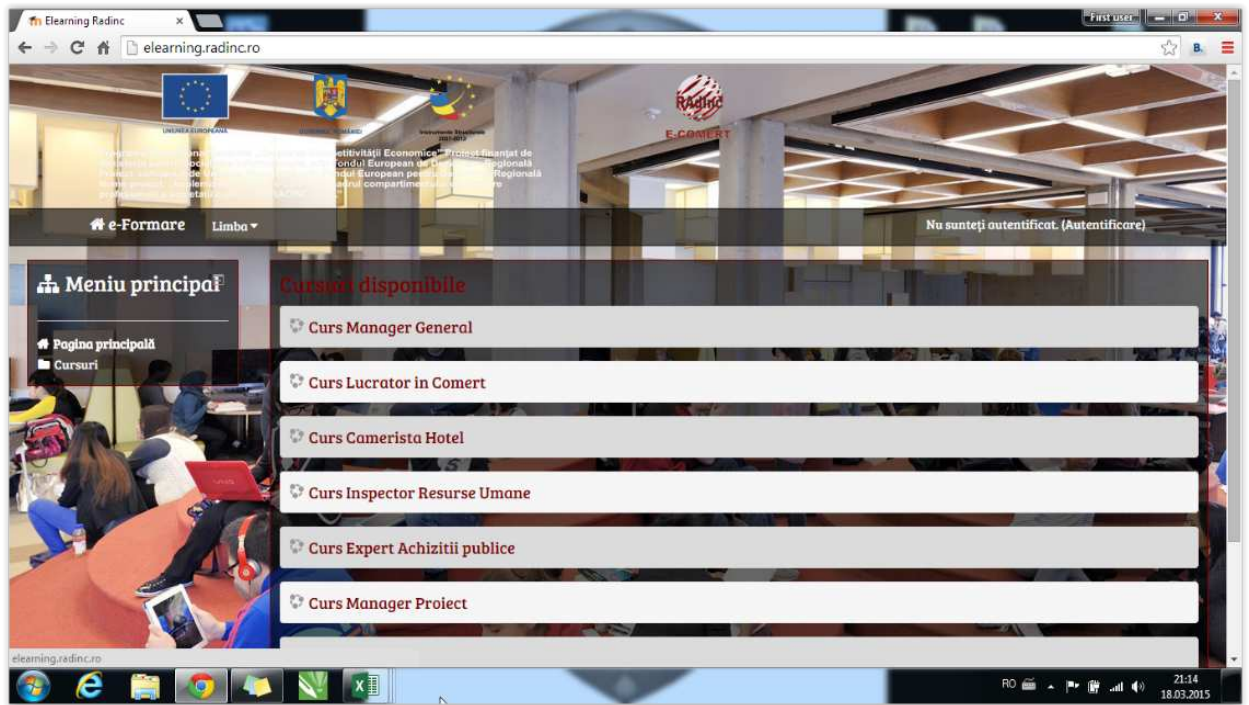


Figure 8. Courses offered

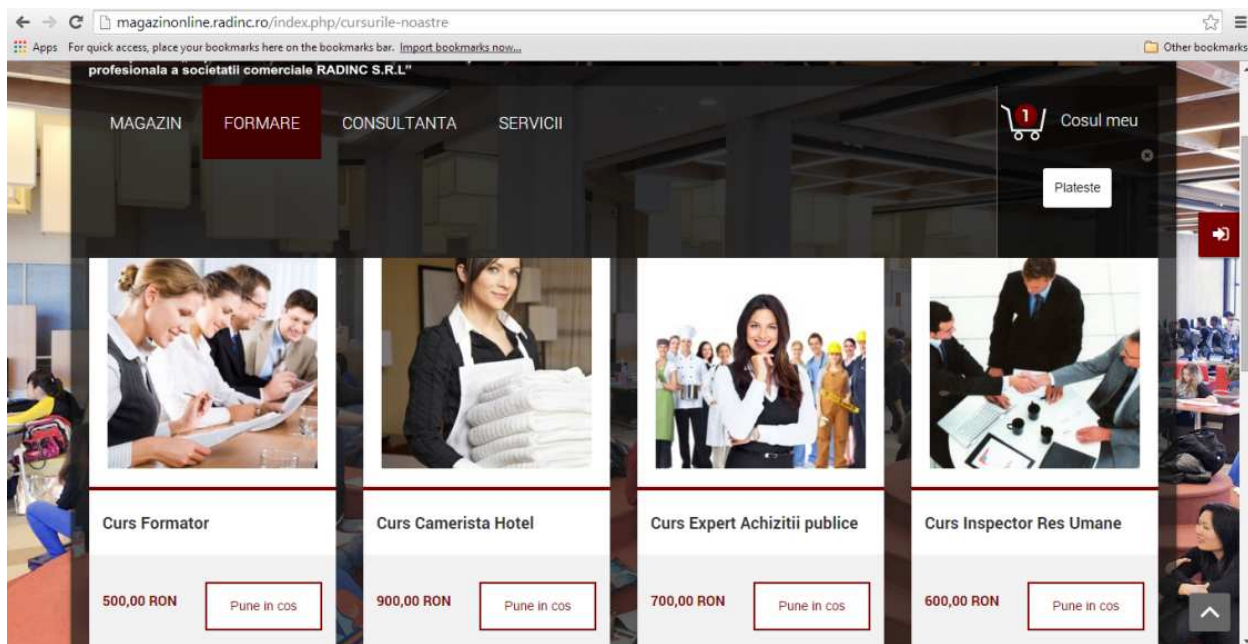


Figure 9. Training page with different course presentations

7. Analysis of the results of a survey realized on clients of the e-learning platform

7.1. Effective Learning/Teaching in E-learning Systems

CRT.NO.	Question	Answers
1.	Have you used by now an e-learning platform to study?	Yes No I tried but it is difficult
2.	Is this the proper modality to learn for you (taking into consideration the demographic data of the participants)?	Yes No I will use it in the future
3.	Is this technology easy to use for you? Is the interface friendly?	Yes No Can be improved
4.	Does the platform facilitate the process of learning?	Yes No It helps the process of combined learning (e-learning and face to face)

CRT.NO.	Question	Answers
5.	Is the interactivity at a right level (reading, visualizing and listening and communicating with the teachers/trainers)?	Yes No Can be improved
6.	Is the speed of the technology at the right level?	Yes No Can be improved
7.	What is the level of satisfaction in participating in the courses on this e-learning platform?	High Moderate Low
8.	Did the participation of this kind of courses saved you from costs (money)?	Yes No Partially
9.	Will you participate in the future in this kind of courses?	Yes No I am thinking twice
10.	Did you find the tests and evaluation methods facile and effective?	Yes No Can be improved
11.	What did you like the most in these courses?	The quality of the material posted The interactivity The tests and evaluation methods

Table 1. Survey tests on the platform

8. Analysis

The test has been completed by 30 people, participants at different courses.

The answers were:

Question 1 – 20 persons responded Yes and 10 people responded No.

Question 2 – 23 persons responded Yes and 7 people responded I will use it in the future.

Question 3 – 30 persons responded Yes.

Question 4 – 27 persons responded Yes and 3 people responded It helps the process of combined learning (e-learning and face to face).

Question 5 – 30 persons responded Yes.

Question 6 – 30 persons responded Yes.

Question 7 – 30 persons responded High.

Question 8 – 30 persons responded Yes.

Question 9 – 30 persons responded Yes.

Question 10 – 30 persons responded Yes.

Question 11– 11 persons responded (a), 8 persons responded (b) and 11 persons responded (c).

The respondents are very happy with the friendly interface, with the facility of learning at distance from home, with the interactivity of the platform at the technical level, the lower costs than a face-to-face course, the testing modalities and all the participants intend to participate to this kind of courses in the future. Paying on-line is another facility appreciated by the participants; they can pay each module separately on the e-commerce facility.

The main interest in using this platform is the fact that after following the course, the participants have more opportunities like if he/she has practice and is not qualified in a specific field, after participating in the course on the platform, he/she can go to a competencies evaluation centre of national authority for professional training and obtain a diploma or he/she can do the practical part of the course in an organization, pass a practical test and participate together with the theoretical part learned on the platform at a graduation exam.

The advantages are available also for the organization that created the platform by reducing the costs with the trainers which are working from the office without being necessary the displacement at every location where the groups of participants are gathered. Also, the trainer can prepare more materials useful to the participants and can respond in time to their questions on the forum section of the platform. The cost for the accountant which has to prepare invoices for every participant is reduced or is eliminated because the payment is on-line and the participant prints the invoice himself. The time and the money are valuable resources and have to be preserved, from the organizations' and from the participants' point of view.

The on-line learning is preferred also by other organizations that request by contract to use the platform and train their own employees internally or with a diploma of professional training.

9. Short conclusions

Why is e-learning important as training method today (considered the method of the century)? Because it saves time and money for the people who participates in training, for trainers and also for the employers.

The e-learning [5] appeared as consequence of evolution in the technologic field and from the necessity of communication in real time for the people.

The interest manifested by the participants and future participants was tested using questionnaires applied directly on the platform and among the persons selected to participate in different projects at the training sessions.

Also my own experience as teacher and trainer for more than 18 years was the main determinant to write this work (chapter). As project manager of various projects with the main objective to implement e-learning platforms in universities or in any other types of organization, I could observe the hostility of the people at the beginning and the satisfaction after using such platforms. So we can affirm that the e-learning is the future regarding the educational systems.

Author details

Nicoleta Nicolau Gudanesescu

Address all correspondence to: n.gudanesescu@gmail.com

Hyperion University, Bucharest, Romania

References

- [1] Plato ist2 terminal, Available from: http://en.wikipedia.org/wiki/File:Plato_ist2_terminal.jpg, [Accessed: 2014-12-03]
- [2] Ellis, Ryann K., Field Guide to Learning Management Systems, ASTD Learning Circuits, 2002
- [3] Gibbons, A. S., Nelson, J. M., & Richards, R., The Nature and Origin of Instructional Objects. In D. A. Wiley (Ed.), 2002
- [4] Team based learning, Available from: <http://teambasedlearning.apsc.ubc.ca/v/clip11/clip11.htm>, [Accessed: 2014-12-10]
- [5] E-learning fundamentals. History of e-learning, Available from: http://www.leerbeleving.nl/wbts/1/history_of_elearning.html, [Accessed: 2014-12-10]

IntechOpen

IntechOpen

