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## ELEARNING SYSTEM IMPLEMENTATION STRATEGY TO SUPPORT THE INDIVIDUAL CONSUMER

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**Abstract:** E-learning is the technology that has revolutionized the traditional distance learning, and opportunities have been seized and used both in schools and at public or private organizations.

In terms of structure, an eLearning system provides facilities for the transfer of knowledge by developing and publishing educational content in the form of courses or virtual libraries and knowledge verification and testing using simulated management scenarios or case studies for evaluation. Taking into account its main features, we define the concept of eLearning system.

An eLearning system consists of a set of methods, techniques, tools and procedures that ensure the provision of learning or training programs, using electronic means, as well as evaluating the assimilation of knowledge by students.

Training of beneficiaries through an integrated eLearning can be done in three ways: self-training (student-computer interaction) personal education (student-lecturer interaction) and virtual classroom (interaction between several students and a tutor).

The main instrument of self-training is virtual bibliotheca whose definition is shown below. A virtual library is a collection of articles and publications in electronic format that can be called using Internet technologies by a group of users, based on a set of bibliographic references, accessible online. Virtual Library is an information and training to its employees and other categories of stakeholders, providing them information and organizational knowledge, based on access rights. Also, the virtual library of an organization can be used in the process of training or professional self-improvement because it provides documentation for extending and deepening students' knowledge transmitted via eLearning.

In addition to its general features, eLearning system must satisfy a number of specific requirements set out in the nature of the market and address any specific, investments in workforce training and retraining needs are among the emerging economies.

This paper proposes a strategy for implementing the eLearning system, seen as a component of development strategy of the organization.

Keywords: elearning, managenent, virtual library, self-training

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In addition to its overall functionality, e-learning system must satisfy a number of specific requirements set out in the nature of the market and address any specific, investments in training and retraining of labor among the economies needs emerging.

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Businesses that schedule their equipment, technologies, supplementary Conformity with two issues: downsizing, retraining, further training of the staff who will work with new equipment. T admit at the beginning of the enterprise are running machines with "age" t.

Annually the company produces the value of r(t). Equipment needs for operating costs L(t) workers. If the machines are out of service remaining cost is  $\kappa(t)$ .

Each year production equipment can be further exploited to staff L(t) or can be substituted with others at the price P.

The question is to develop optimal replacement schedule of equipment, from the condition of maximizing the profit hoped for period T.

this be Staff L(t) in process maintained, improved dismissed. can In all cases, the firm provides staff training programs and company producing advanced equipment, which are located usually at great distance company. In this case the only possibility of refresher training is distance learning. The curriculum is the result of technological renovations.

Trained are employees or people - unemployed. The renovation of equipment to initiate the program generates remote staff. Each institution in its way contributes to re-staff the distance.

If equipment in year t=1 is maintained, the profit is (R(t)-L(t)), and if equipment is replaced when profit will be:

K(t)-P+R(0)-L(0), where R(0) - cost of production of new machines produced (age "0") in a year, L(0) - expenditure on staff remuneration conditions of the new equipment in a year.

Replacement equipment will be profitable if K(t)-P+R(0)-L(0) > R(t)-L(t).

Denote by  $f_n(t)$  - the maximum possible profit in the last n years of the T.

So the maximum profit achieved in the last year of the period T will be  $f_1(t)$  will be:

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 will be: Equipment are maintained
$$f_1(t) = \max_{t} \begin{cases} k(t) - L(t), \\ K(t) - P + R(0) - L(0), \end{cases}$$
 Equipment are changed
$$f_1(t) = \max_{t} \begin{cases} k(t) - L(t) + f(t+1) \\ Equipment are maintained \end{cases}$$

For

can be determined f3 (t), f4 (t), ...

$$f_2(t) \max_{t} \begin{cases} k(t) - L(t) + f_1(t+1), \\ k(t) - P + R(0) - L(0) + f_1(t), \end{cases}$$

Equipment are maintained Equipment are changed

Bellman function will take the form:

$$f_n(t) = \max_{t,n} \begin{cases} k(t) - L(t) + f_{n-1}(t+1), & \text{Equipment are maintained} \\ k(t) - P + R(0) + f_{n-1}(1), & \text{Equipment are changed} \end{cases}$$

Functions  $f_1(t), f_2(t), ..., f_{T-1}(t)$ ,  $f_T(t)$  can be made basis for treatment programs to train staff to re-distance. Such treatment is justified remote staff training for: in such a system is known "author" of unemployment, it may be required by the state to help remote staff retraining, study personnel remotely professions not hypothetical but with certainly those required by productive enterprises, in the process of learning new technologies are involved and companies exporting machinery from other countries.

E-learning is nothing but a new way of looking at learning, the background elements remain the same, only the medium of exchange and appropriation of knowledge change.

Using the system for this purpose means invoking elements: freedom to learn in place and moment. The roots of the educational system in distance learning are practiced in some regions of the world. Distance or other barriers separate them instructors of students, post and later the radio being used and even agreed routes of transmission and reception classes. Although the advent of home computers (which could be support for the courses distributed by educational institutions) was quite early, high costs have hindered the development of technology in this direction.

After significant development of TIC, coupled with falling prices of personal computers, promoters of these ideas have started to put projects into practice.

Thus, with the availability of information storage media and digital magnetic environment, universities and high schools were first to adopt the new methodology.

Springboard for e-learning but have been an Internet and World Wide Web technology and previous disadvantage of distance learning solutions can now find solving: student-instructor interaction (teacher) became possible. Achievements in software supports e-learning processes allow real time communication such as text, audio and video, creating virtual course rooms.

World wide, large budgets allocated sector e-learning come to form the image of the existing market, technology and concepts of e-learning being circulated in other media more than academic. Adoption by organizations with a profit of e-learning allows more efficient training of its employees, given that information is the cornerstone of any business.

Minimum requirements are imposed are great development of the information in a field, need to learn quickly, finding effective methods that cost performance for geographically distributed target groups, differences in preparation and demographic changes require new models of learning, flexible access to education throughout life (training). These minimum requirements can not be achieved without technical support, if Internet access at work and home, TIC offers a multimedia context, and unified technology standards facilitate compatibility and interoperability of systems and e-learning products.

In this context captures the Romanian market openness. In addition to the large number of universities and organizations that adopt such a solution, Internet infrastructure promises a veritable boom. Beyond technological support, the essential element is the psychological aspect involved: applying a clear and professional work methodology, implemented projects will enjoy a great receptivity from users.

E-learning is a relatively new and unexplored industry that involves covering a wide set of applications and processes based on learning by computer.

E-learning content is distributed electronically information (media, Internet, intranet), and more precisely defined than distance learning, as it is:

- Convergence of learning and the Internet;
- Use TIC to build, deliver, select, administer and extend learning;
- Learning the Internet and may include information in multiple formats and network communication between those who adopt this style of learning;
- The fastest way to learn, with the lowest cost, which allows increased access to education for all.

The main advantage of e-learning system is the flexibility that encourages the learner's learning style. In recent years, traditional education begins to lose ground, leaving room for computer aided education, this mainly due to the low costs involved in tele education.

The need to transform the organization of learning into a more modem, efficient and flexible has led to the concept of e-learning, benefit being that technology has revolutionized business, now it must revolutionize learning.

It is estimated that a fairly large percentage of employees using personal computers in their work.

Technical obstacles such as access, standards, infrastructure or bandwidth is not a problem, at least in the near future.

Increased use www, high capacity computer networks and enables learning 24 hours a day, 7 days a week.

The biggest benefit to e-learning is eliminating the costs and inconveniences posed by the instructor and students need to be in the same place.

Thus, application of new information and communication technologies can also increase creativity and improve team work, the changing role of the instructor (teacher), reducing the intimidation and frustration among students, simultaneous access to multiple sources of learning.

Developing an e-learning requires knowledge of additional costs involved and the basic requirements for customers and there is a language you can understand any manager.

An important strategy for designing e-learning, which focuses on student and real improvement in performance is given which brings together people interested team with appropriate experience, provided that the following requirements:

- Learning design and development expertise are updated according to the methods and tools for e-learning, and designers have experience in using and combining other training methods;
- Content development falls within the subject matter or find locations where there are references, without quality content will not be able to develop an efficient e-learning, to provide desired performance outcomes;- TIC managers need to know technical infrastructure of the organization and to accommodate and support e-learning applications, including Internet access, intranet, server, desktop applications, workstations and learning management system;
  - End users are involved in the process;
- -Reaction, learning, application and results should comply with organizational requirements and performance management system;
- Implementation is based on identifying and developing expertise requires organizational supporters, including the possible aspects of change management policies;
- Staff involved in project management must be specific and not to exceed the time or budget, very important requirement in terms of increasing complexity and objectives of developing and implementing bold.

Once the e-learning was designed based on appropriate methods and the pilot project was implemented based on technical expertise and organizational training program can begin. Project team members should monitor the results of their field of competence, but also the whole learning process and performance results. Subtleties of design and implementation will be identified during the program pilot. The final decisions will be needed on the changes will be made to the original version. As they implement e-learning system, management (with software designers and trainers) must ensure that training participants are willing to apply the new knowledge learned, thus achieving the expected results and receiving training that they wanted o companies also engage in monitoring and analyzing the results more easily identify if learning and performance objectives were achieved and can help identify ways to improve the design and implementation of e-learning.

Effective design of e-learning should not be in the forefront technology. Emphasis should be put on practical execution of the fundamentals and based on development principles. The result will be really able to bring students organization performance improvements.

Customer training department of a company, realize significant cost learning system, thus concludes that e-learning system will enable customers to meet demand, reducing their expenses and licensing.

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## References

- [1] Stegăroiu Carina-Elena, Automatic data processing techniques in business, Brancusi Academic Publishing, Tg-Jiu, 2010.
- [2] Joseph E. Stiglitz, Globalization. Hopes and disappointments, Economic
- [3] Whitman Michael, The Handbook of Information Systems Research, Ideea Group Publishing, 2004