Association for Information Systems

AIS Electronic Library (AISeL)

ICEB 2004 Proceedings

International Conference on Electronic Business (ICEB)

Winter 12-5-2004

What E-Learning Providers and End Users Should Do Respectively before Initiating Such a Learning Project

Zheng Zhao

Runtian Jing

Follow this and additional works at: https://aisel.aisnet.org/iceb2004

This material is brought to you by the International Conference on Electronic Business (ICEB) at AIS Electronic Library (AISeL). It has been accepted for inclusion in ICEB 2004 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

What E-Learning Providers and End Users Should Do Respectively before Initiating Such a Learning Project¹

Zheng Zhao, Runtian Jing

School of Management, UESTC, Chengdu, 610054, China fanhuijiaspec@163.com

ABSTRACT

As an E-learning provider, before offering such a product it needs to carry out a thorough analysis in order to understand the customers and trends, and evaluate external environmental forces which include market demand, political and legal forces, social and ethical influences, technology and competition. Through conducting a thorough analysis, a clear strategy can be developed that identifies which customers the e-learning provider is to target and where their product or services will be best positioned. To some extent providers are forced continually to forecast, monitor and assess this environment and to adapt e-learning products or services accordingly before offering learning products. To implement e-learning project successfully, the end users need to understand what e-learning is good at and not so good at. When this basic analysis is complete, one can go into the organization looking for specific learning needs that could be met with e-learning. The advantage of starting by doing is that users will find out where they need help, and where they can manage perfectly well on their own. For any company, the returns must be considered carefully before undertaking such a program. In this article, it also explores the benefits of e-learning investments with a particular focus upon measuring the value of delivering an enterprise e-learning initiative. In addition to the many measurable returns, the paper offers a number of formulas for calculating the ROI and justifying the cost. The article concludes with guidelines detailing the implementation of e-learning initiative.

Keywords: E-learning, Internet technology, distance learning

1. THE BENEFITS OF E-LEARNING

Rather than waiting for a scheduled course to occur, employers and employee now can turn to e-learning programs - available every day, any hour. The "just-in-time" nature of e-learning means specialized learning is available at the moment it's needed without worrying about classroom or instructor availability. The result is that learning is accomplished more rapidly while ensuring content consistency and standardization. In addition, e-learning can streamline the education process by freeing educators' time to focus on learning contents, supplemental information development, and learners' educational needs. E-learning's more efficient use of time can increase productivity and decrease learning costs (Smith, 2001). The benefits of e-learning are as follows.

Efficient learning time. There is minimal work time lost with just-in-time learning. The user can learn anywhere and at anytime at their convenience: self-paced, self-managed, learning-on-demand, distance learning and open learning. The individual can immediately apply what he or she learns to the job when this takes place in the working environment.

Cost-effective learning. E-learning products can be delivered to any networked computer, to a large number of individuals. Programs can be delivered and re-used

with fewer costs than with traditional learning methods. There are no expenses required for the individual's travel, subsistence, or accommodation as with off-site instructor-led courses.

Efficient management. The self-managed learner is a useful resource to the organization, given the right learning and guidance (Pedler et al., 1997). The empowered individuals can organize their own learning methods within the e-learning environment thus freeing up their managers to do other tasks.

Customization. E-learning courses can be customized to meet the organization's specific needs. This flexible learning environment can also be department, product or individual specific.

Knowledge exchange and sharing. Individuals can share their new knowledge and skills with others in the team and department. This increases the comprehension of other employees by integrating and sharing information with other departments, suppliers and customers.

Job performance is increased. Understanding is developed from achieving greater knowledge retention by wanting to learn (Tarr, 1998). Hence, fewer unproductive mistakes are made in the organization. Self-motivated, self-disciplined, self-reliant and self-assessed employees are more autonomous and can

_

¹ Supported by NSFC (70372032, 79900022)

contribute better to the whole organization performance (Pedler et al., 1997).

There is a lower turnover of staff. Employees are more confident, competent and valued, due to the learning climate and are more likely to stay in the organization (Reay, 1994). Organizations that offer ongoing education have a higher rate of employee retention and benefit from a better-skilled workforce. Organizations are becoming aware of the importance of continual learning.

Acceptance of organization change. Self-directed individuals accept organization change more readily as they adapt by learning new techniques and processes (Reay, 1994). The author French (1999), identifies the self-directed learning benefits to a company by: "... employees who see themselves in a learning environment add value to the companies, increase productivity, are more accepting of change, and can adapt to movement within the company".

Accessibility to current information and new material. Knowledge and skills within an organization can be continually updated through e-learning. The organization can adapt more quickly to the environment in which it operates, due to better-informed employees. According to Steed (1999), skill transfer and retention with e-learning is at least 30 per cent more effective than instructor-led learning.

Utilization of existing resources. A Web browser provides the interface to the Internet and this can access the e-learning environment on any operating platform, such as Windows, UNIX or Mac. A learning program can be delivered to any networked computer without using a different program for different platform.

Consistency and control of learning material and revisions. After the original implementation of an e-learning program that links to Web-based information, further program changes, additions, enhancements and developments can be made on the server where the program resides and everyone in organization can access the latest updated version.

2. E-LEARNING PROVIDERS

E-learning providers are likely to be more successful in attracting customers, if they are much closer to the external environment. Forecasting, understanding and assessing the environment are the greatest challenges and opportunities for e-learning providers. The environment consists of the following uncontrollable factors: market demand, political and legal forces, social and ethical influences, technology and competition.

These factors need to be measured and analyzed using market research and forecasting techniques. The information collected becomes essential to the decision making of the strategy for an e-learning provider. The factors are discussed next.

2.1 Market demand

The demand for products and services relies on the economic and behavioral aspects of the consumer. A behavioral aspect such as lifestyle trends creates new demands and indicates opportunities for new product development. This influences the direction of an e-learning provider's strategy. An example of lifestyle trends includes individuals working longer hours with greater demands imposed on them, giving less time to keep up-to-date with information and to learn it (Pearn, Roderick and Mulroonry, 1995). Also, the geographic locations of an organization increase global business travel for the individuals, which create problems for them about keeping informed, trained and educated. The Internet provides the means for e-learning, not only to satisfy the economic and social change, but also the accessibility to the individual for learning, by promoting a self-directed and flexible learning approach. Demographic changes affect market demand and therefore the strategy. There is an increase in the number of people that are self-employed and working from home, especially in the service sector (Bickerton et at, 1996). The fastest growing group in higher education is part-time students older than 25 (DfEE, 1999). This group tends to seek education to advance their careers, increase their salaries and self-development. For universities and business-to-consumer (B2C) learning providers, these individuals are ideal customers for having e-learning delivered to their home or offices.

2.2 Political and legal forces

The political and legal processes in society affect the way in which an e-learning provider operates. Changes in legal regulations and requirements give rise to many new opportunities and threats, and influence the way in which products and services are offered. Legal requirements that regulate the marketing and advertising products and services over the Internet include: Pricing Regulations, National Standards, Consumer Rights etc.

There are accredited standards being created for e-learning creation. Both e-learning providers and standards committees are recognizing the need to encourage development of Web-based content similar to that of computer software programming. The Sharable Content Object Reference Model (SCORM) standards under development by the United States Department of Defense's Advance Distributed Learning Network (ADL) addresses the need for modular, reusable e-learning content in universities and companies to teach procedures and skills. Other accredited standards include developments from the Institute of Electrical and Electronics Engineers' Learning Technology

Standards Committee (IEEE LTSC); Instructional Management System (IMS) Global Learning Consortium and ARIADNE, a European Union project, that focuses on the creation of standards for e-learning content, management and technology. The IEEE LTSC has also initiated the move of this work to the full International Standards Organization (ISO) standards by establishing ISO Joint Technical Committee 1 (JTC1) Sub Committee 36 (SC36) on Learning Technology.

2.3 Social and ethical Influences

Active involvement by consumer and pressure groups has forced the need for social responsibility and protection of the company's reputation to be important. In order to maintain a good image and reputation among customers, e-learning providers must avoid: misleading ambiguous advertising, inadequate product and service information and hidden financial charges.

The following points can present threats to the organization wanting to provide e-learning:

The e-learning approach can be too innovative for non-technical customers. E-learning needs appropriate understanding and commitment from the customer's management and all those involved in the organization (Gupta et al., 2000).

Organizations can be reluctant to learn over the Internet entirely. Distance-learning courses, such as for further or higher education, where learning is via books, videos and e-mail correspondences has been more accepted by organizations.

Individuals need to understand before accepting any new methods of learning. Decreasing instructor-led learning can make learners anxious. Therefore all affected customers need to be involved at the beginning of the e-learning implementation with the e-learning provider. Also e-learning maybe needs to be introduced into an organization gradually and combined with instructor-led way. This blended learning is more likely to be tolerated by individuals and the organization.

Organizations have a vast amount of knowledge, information and lessons learnt in a wide variety of procedures and in individuals' heads. This diffused knowledge needs to be managed and integrated with the e-learning systems properly (Gupta et al., 2000).

Ethical concerns, including learner privacy, are important to the customer. Internet tools can track Web site visitors, and many customers can provide extensive personal information. This may leave customers open to information abuse if the e-learning providers make unauthorized use of the information in offering their products or exchange electronic lists with other businesses.

2.4 Technology

Internet technology has a direct impact on e-learning providers and end users. With e-learning, the Internet provides the technology element that makes up the product and its delivery as well as providing the distribution channels and a means to promote the e-learning product or services.

Web-based tools and technologies provide the means for designing, developing and delivering e-learning content. The technology includes Web browsers that provide the interface to the Internet, and hypertext markup language (HTML), the standard language that Web pages are written in, that is supported by Web browsers. Web authoring systems assist Web designers to develop the e-learning environments. These consist of either HTML editors or Web page layout programs like Microsoft FrontPage or Macromedia Dreamweaver, and Web development programs like Authorware and ToolBook. Internet tools used can be synchronous or asynchronous communication tools: synchronous tools, including whiteboards, video and audio conferencing, allow individuals to interact in real-time over the Web. Asynchronous tools, including e-mail and forums, allow individuals to learn at any time (French, 1999). Groupware is the technology that allows a group of people to collectively work on shared information and documents over the Web using the synchronous and asynchronous tools (Ravet and Layte, 1997).

Customers can use search engines to find any information regarding the e-learning providers and their e-learning products and services. The e-learning providers need to embed keywords and page titles into their Web pages using the Web authoring systems, in order for the search engines to retrieve a description of an e-learning provider's Web site (Hanson, 2000). However, there are problems affecting search engines. A search will sometimes return thousands of results. Facing this, most users will abandon the search if their desired information is not found in the first or second screen. E-learning providers must therefore make sure their important Web pages are listed within all major search engines and use their Web page content to place important Web pages high on the return list in keywords searches.

Currently there are limitations related to the network capacity of the Internet, the bandwidth, which governs the rate at which information can be transmitted. The reason why video and audio transmission can be relatively slow over the Internet is that the bandwidth cannot cope with the large file sizes (Steed, 1999). Solutions to this are presently being developed by the telecommunication industries. One solution is asymmetric digital subscriber line (ADSL), which uses the existing copper telephone wires. In the meantime a technology called streaming is alleviating the problem for transmitting video, audio and animation sequences,

where an application or file is broken down into small chunks and delivers the beginning of the application while concurrently sending the other compressed chunks.

Security is an important aspect of e-learning and a major area of concern for consumers. If organization learning involves sensitive corporate information, or if payment is necessary over the Internet, then a greater amount of security should be used. The following are the main areas related to Internet security (Hall, 2000; Steed, 1999):

Access control. There are techniques to control which users have access to the information. Corporate Intranets are often protected through the use of firewalls that are gateways between the Intranet and the Internet. The process of authenticating users by issuing them with username and passwords is another type of access control.

Information confidentiality. Encryption is the technology used to ensure information passing through the Internet remains private. It does this by basically scrambling the information from the sender and unscrambling the information for the receiver only. Web browsers and Web servers are being developed with encryption technology built in.

The following points can present technology threats:

Present bandwidth limitations for e-learning means performance for sound, video and complex graphics can be slow, causing long waiting times for these files to download from the Internet, affecting the flow of the learning process.

The initial development time and costs can be significant for authoring customized Web pages for the learning environment and integrating the delivery environment.

Internet connection can be lost or broken due to problems with either the Internet service provider (ISP) or the organization's IT department.

An information infrastructure, i.e. networked PCs, and resources are required within the customer's organization. Therefore, the design, development, implementation, security and management of the e-learning content may need to be maintained by an e-learning provider.

2.5 Competition

Competition is probably the most dynamic of all the environmental forces (Bickerton et al., 1996). A strategy must take into consideration the competitive situation of the environment in which the e-learning provider operates. Successful e-learning providers must satisfy the needs of the customers better than its competitors.

Understanding competitors' strengths and weaknesses, market share and positioning are essential. Careful monitoring and evaluation of the competition, enables the e-learning provider to make better decisions (Kotler et al., 1996).

Not only does the Internet provide access to e-learning for many customers, but also to the competition. It is easy for a competitor to see what other e-learning providers are trying to achieve as well as view their Web site and e-learning products offered. Currently a strong growth and relatively low barriers to entry are attracting newcomers, including competitors from other related business areas such as the consulting industry.

3. E-LEARNING END USERS

Over the last twenty years, the success rate for implementations of technology-based learning has not been high. Huge numbers of companies have spent countless millions on failed initiatives in pursuit of what we now call e-learning.

How can user be sure that it's investment in e-learning will be worthwhile or enduring? Part of the answer lies in the technology. This part is easy to deal with because of global technology developments: The universal adoption of Windows and the html-based web browser, the emerging standards in e-learning, broadband access, networked PCs and better security measures.

How to deal with the rest part of the answer is the main concern of this section.

First, before implementing e-learning, user needs to understand what e-learning is good at and not so good at

There are skills that can't be learned through an e-learning course. For example, imagine expecting someone to e-learn how to ride a bicycle. User could spend vast sums creating a simulator. Effective? Hardly.

However, user can deliver knowledge and understand more effectively by computer than by any other way, and all skills are enhanced by knowledge and understanding. Achieving this through e-learning frees user to put more energy into practical exercises, role-playing, etc.

So if an organization wants to provide e-learning for it's people, and someone tries to offer an online education system, or an exploratory learning system, or a "total solution" that claims to do away with the need for live learning altogether, the managers of the organization must know what to do. Meanwhile managers should not feel they have reduced power from their self-directed, continually learning workforce, as they themselves are also employees of the organization and must also keep their skills update. The manager's emerging role in

e-learning is to act more as facilitator and support the employees through coaching, guiding, mentoring and encouraging continuous learning.

When basic analysis is finished, what should end user do?

- 1. Go out into organization looking for specific learning needs that could be met with e-learning. If companies do not have the resources to carry out a thorough Needs Analysis, talking to line managers will soon reveal some specific needs. For example, the sales force may need more thorough product knowledge, clerical staff may need to understand how to use computer more effectively.
- 2. Choose one (or more) urgent need for which e-learning would be suitable. But do not imagine for one second that this is a total e-learning solution. End user needs to train its staff in products, processes and procedures. Without employing specialists, user can start with a very specific topic, or more than one if having the resources, and lay out the information employees need to know and understand.
- 3. Make it happen. Get one team to do it or employ consultants to do it. The line manager (sales, production, clerical) who identified the pressing learning needs may well be a "leader" and help make it happen. Often a keen manager will find staff members who can contribute knowledge of the subject matter, familiarity with the target learners and their culture, and enthusiasm for the introduction of e-learning. Be realistic in ambitions. Don't aim for perfection or the ultimate in sophistication on first project. Stay practical. Countless organizations are spending more on compiling reports on e-learning, which do not take a single step towards a solution.
- 4. Evaluate the results. By all means collect learners' reactions to the e-learning. They will be valuable, but do not mislead into thinking that the response to a question about the effectiveness of a course is an actual measure of its effectiveness. E-learning lends itself to paired modules a learning course and an assessment test. The test is not meant to fail people. It is there to allow them to demonstrate their competence. If everyone achieves a very high score on test, it is perfect. If not, managers should review (a) the questions, in case they are badly worded or needlessly tricky, and (b) the learning content, as there may be topics that are not adequately explained. Remember, however, that the benefits of e-learning are difficult to quantify in terms of changes of behavior and productivity and return on investment.
- 5. Learn from the experience. Consider what was successful about this pilot. Learn from any failures and shortcomings certainly, but most of all, build on success. User will learn more from this one experience than from five years of reading reports, setting up meetings, and

preparing strategy documents.

6. Calling on the experts for help. Of course, as user carry out e-learning implementation more widely through organization, it may wish to draw on the expertise of specialists in various disciplines. End users cannot escape the e-learning experts entirely, but when anyone tells that one strategy or another is a must-have, user should ask them to explain, without using jargon, exactly what the benefit will be. And if user doesn't really understand the explanation, don't invest in e-learning.

4. CALCULATING THE VALUE OF E-LEARNING

Many companies view learning budget strictly as a cost center, which is susceptible to cuts when the business needs to reduce expenses. For any company, the returns must be considered carefully before undertaking a learning project. In this section, we explore the benefits of e-learning investments with a particular focus upon measuring the value of implementing an e-learning initiative. In addition to the many measurable returns, the section offers a number of formulas for calculating the return on investment (ROI) and justifying the cost.

E-learning is the future wave, but if the wave is ever to come, corporations must prove that it delivers a tangible return on investment. If early adopters integrate methodologies to demonstrate ROI, the wave will change corporate forever.

It is difficult to assign a monetary value to e-learning's benefits. Calculating airline ticket savings because a whole division took an online course is straightforward; but calculating improvements in a manager's interaction with direct reports after an online communications course is more demanding. These improvements are at least as valuable as the travel savings realized by e-learning, but more difficult to measure and justify to senior level decision makers.

Many evaluation experts have developed models to determine the value of specific learning experiences. Any company can follow these formulae to calculate ROI from a learning initiative.

Several ROI models have been developed, but two stand out as practical to implement and be effective in delivery. These two methods, a model by Kirkpatrick (1994) and an enhancement by his colleague, Phillips (1996), form a logical framework to view ROI both from a human performance and business performance perspective. Critical to both is the concept of "chain of effect", which links benefit levels, derived from learning, together. Each level of measurement impacts the previous and next levels. Without accounting for these links, it is difficult to conclude that learning is responsible for any performance improvements.

In his original model, Evaluating Training Programs: The Four Levels, Kirkpatrick (1994) considers the value of learning on four levels: participant reaction, skills acquired, skills implemented and organizational benefits accrued. In his book, Accountability in Human Resource Management, Phillips (1996) suggests adding another level to Kirkpatrick's model to calculate the return on investment generated by learning. Thus a corporation cannot ultimately measure ROI in isolation; it must base it on measurements gathered at the four preceding levels.

Evaluation is aided by using a question and answer methodology:

Level I - "What are participants' reactions to the learning and what do they plan to do with the material?" Learners measure this answer with surveys or questionnaires that measure whether the learning was meaningful or enjoyable. These surveys should also include sections on how the employee plans to implement the lessons learned.

Level II – "What skills, knowledge, or attitudes have been changed or acquired and to what extent?" Achievement tests measure how well the employee learned the information or skill presented.

Level III – "Did participants apply what they learned to their jobs?" Observer ratings and observations measure the degree to which the employee applies what he or she has learned. Observers (usually managers and supervisors) must be thoroughly informed in the evaluation system. Managers need to establish a system for leveling out the inconsistencies between observers' judgment.

Level IV – "Did this on-the-job application produce measurable results?" These results may include increases in productivity and efficiency, decreases in absenteeism and occupational accidents, decreases in customer complaints, etc. Isolating the effects of learning from other variables that produce an effect in these areas, either through statistics or by using a control group, is vital to getting a clear picture of ROI.

Level V – "Did the monetary value of the produced results exceed the cost?" This is the measurement of ROI, which can be calculated in several ways.

The fifth level gets down to quantify the actual return on a company's monetary investment in learning and requires a mathematical formula to determine an answer. Evaluation experts have developed three common formulae for measuring learning ROI, each reflecting a different concept of what a company's return on learning investment can be:

(1) TACFP—TACNP = PNS. Subtracting the total administrative costs of the new e-learning program

(TACNP) from those of the former traditional learning program (TACFP) gives the projected net savings (PNS) for learning administration. Although cost savings are certainly important, ROI encompasses much more than just that.

- (2) TCL/number of students = CPS. Dividing the total cost of learning (TCL) by the number of students gives the cost per student (CPS) of the learning. This is useful, but again is not a true measure of return on investment. Both formulae, although frequently cited as measures of return on investment, do not measure what monetary value or profit is derived from learning investment.
- (3) TB (in\$)/TLC = ROI%. Dividing the total benefits (TB) of learning in dollars by the total learning program cost (TLC) gives the percentage of ROI in a program. To calculate this formula and get a percentage of ROI, we must determine the tangible benefits of learning and assign a monetary value to benefits such as:

Increase in productivity (units produced, items sold, forms processed, tasks completed, etc.); Improvement in quality (less scrap, less waste, less rework of product, fewer defects, etc.); Reduction in staff turnover; Reduction in lost-time injuries; Reduction in workers' compensation insurance claims; Increase in customer satisfaction as reflected in an increase in repeat sales.

These benefits are often called measurable benefits because the results can be converted easily into a monetary value. Other benefits such as improved communication, enhanced corporate image, improved conflict resolution, increased sensitivity to human diversity, improved employee morale and increased employee loyalty are intangible benefits and more difficult to convert into a monetary value.

With so many benefits to its credit, a company's learning investment should not end up only on the expense side of the balance sheet, ready for budget slicing. By measuring the results of learning carefully and tying learning to strategic metrics used to measure business success, the return on investment from learning can be demonstrated to the company decision makers.

5. GUIDELINES OF IMPLEMENTING E-LEARNING

Many companies have recognized the value of e-learning and view these efforts as an investment in the company's future. Everyone knows a well-educated workforce is vital to a company's success.

5.1 Decision-making

To successfully implement e-learning, first determine how it fits into the organization's needs. Identify needs, articulate how technological tools can help meet those needs, then search for content that's appropriate for the learning's intended purpose. Consider creating a team of stakeholders to facilitate decision-making that seeks to design a consistent e-learning strategy. To best understand learning needs throughout organization, the team should include representatives from all divisions of the organization.

Create a strategic implementation plan. At first, the organization may have to focus on one of needs rather than tackling every suggested learning issue. Prioritize learning initiatives, create phases and articulate evaluation guidelines to ensure successful implementation from an educational and business perspective.

Once the value of and appropriate use for e-learning are well defined, focus on technological and content-related decisions. First, determine if there's already an e-learning program in place. If e-learning isn't currently in place, articulate necessary performance requirements to guide the search for an appropriate solution.

From a technological perspective, a key component to launch a successful e-learning strategy includes an understanding of learning-management systems and the environment in which e-learning will be carried out. Many e-learning providers offer learning-management systems for different end users. Some are simply technological platforms or structures within which an organization can house its own content, others come with content components.

Before determining the actual technological components, consider content availability. Question each e-learning provider about the kind of content its platform offers and if the content is included in the implementation cost or if it's extra. Also inquire if other content can be added to the platform. These steps will ensure that the platform meets both technological and content requirements.

5.2 Implementation

To generate interest, market the program by demonstrating how employees will benefit from its availability. Provide information explaining the efficiencies and increased productivity that will ultimately be realized from the learning. These efforts will help generate a target around the initiative that'll see it through to a successful implementation.

To augment learning benefits, a blended-learning approach, which combines e-learning with traditional classroom instruction, can be used. The e-learning program can serve as the theoretical foundation upon which participants can build specific skills, either within a classroom or lab setting (Rosenberg, 2001). Such a model capitalizes on the benefits offered by e-learning and optimizes education with face-to-face activities that can accommodate various learning styles, provide social interaction, and focus on communicating.

To create a blended-learning approach, simply determine what tasks can be performed electronically, which ones need a face-to-face or hands-on approach, and how to mix the two. Educational outcomes may remain the same as those articulated for the current construct or modified for the new model. Blended-learning environments may enhance educators' effectiveness, enabling them to use time previously spent delivering basic educational content to focus on specific learning needs of each student.

5.3 Evaluating procedure

Now consider numerous issues about ROI evaluation. Although generally difficult to measure, several direct costs are easy to quantify, such as the number of students, the number of instructors needed. Also calculate the cost of copying handouts, resources such as textbooks, fees charged by the providers, and any travel or room rental expenses.

To begin the evaluation process, quantify the direct and indirect costs for each student. Then quantify costs associated with the educator presenting the learning. The educator's total savings in time and salary is the combined totals of the time and money saved in preparation and teaching. If the educator doesn't spend time preparing for and teaching the basic part of the courses, then he or she can dedicate that time to other educational activities while the learner still acquires the fundamental knowledge via the e-learning solution. Hence, the educator's productivity is increased, effectively doubling his or her educational output. In addition, be sure to include indirect costs necessary to implement e-learning.

The benefits of e-learning include employees' satisfaction level and such business efficiencies as cost and/or time reduction gained by its implementation (Raths, 2001). After calculating total costs and benefits, we can use those formulae mentioned in the previous section to evaluate the e-learning program.

Maybe it is necessary to evaluate whether or not participants are achieving competencies at the same or higher levels than with instructor-led classroom learning.

6. CONCLUSION

The e-learning provider has little control over the external environment in which it operates, and so it is necessary to continually assess this environment and to adapt its e-learning product or services accordingly. Market demand, political and legal forces, social and ethical influences, technology and competition are five main forces affecting e-learning provider's strategy. From conducting a thorough analysis, providers can identify which customers to target and where their product or services will be best positioned.

Before initiating an e-learning project, end user needs to understand what e-learning is good at and not so good at Doing this will help user find out where it need help, and where it can manage perfectly well on it's own. The paper also explores the greater benefits of an e-learning initiative and offers a number of formulas for calculating the ROI and justifying the cost. At last, the guidelines of implementing e-learning project were discussed.

REFERENCES

[1]Bickerton, P., Bickerton, M. and Pardesi, U., *Cybermarketing*, Butterworth-Heinemann, Oxford, 1996.

[2]Department for Education & Employment (DfEE) (1999), *Education and Training Statistics for UK 1999*, 3rd ed., London: The Stationery Office, 1999.

[3]French, D., *Internet Based Learning*, Stylus Publishing, Sterling, VA, 1999.

[4]Gupta, B., Iyer, L. and Aronson, J., "Knowledge management - practises and challenges", *Industrial Management & Data Systems*, Vol. 100 No. 1, pp. 17-21, 2000.

[5]Hall, B., Web-based Training Cookbook, Wiley Computer Publishing, Chichester, 2000.

[6] Hanson, W., *Principles of Internet Marketing*, South-Western College Publishing, Molton, OH, 2000.

[7]Kirkpatrick, D., Evaluating Training Programs: The Four Levels, Berrett-Koehler, San Francisco, CA, 1994. [8]Kotler, P., Armstrong, G., Saunders, J. and Wong, V., Principles of Marketing, London: Prentice-Hall, 1996. [9]Pearn, M., Roderick, C. and Mulroonry, C., Learning Organisations in Practice, London: McGraw-Hill, 1995.

[10]Pedler, M., Burgoyne, J. and Boydell, T., *The Learning Company*, London: McGraw-Hill, 1997.

[11] Phillips, 1., Accountability in Human Resource Management, Butterworth-Heinemann, Oxford, 1996.

[12]Raths, D., "Measure of Success", *OnLine Learning*. 5(5): 21-26, 2001.

[13]Ravet, S. and Layte, M., *Technology Based Training*, London: Kogan Page, 1997.

[14] Reay, D.G., *Understanding the Training Function*, London: Kogan Page, 1994.

[15]Rosenberg, M., *E-Learning*, New York: McGraw-Hill, 2001.

[16]Smith, J.: "Blended Learning", Executive Update Online. Available online:

 $http://www.gwsae.org/Executive update/2001/March/ble \\nded.htm.$

[17]Steed, C., Web-based Training, Aldershot: Gower, 1999

[18] Tarr, M., "Distance learning - bringing out the best in training", *Industrial & Commercial Training*, Vol. 30 No. 3, pp. 104-6, 1998.