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# USE OF E-LEARNING FOR EMPLOYEE TRAINING – INSIGHTS FROM FOUR PRIVATE SECTOR BUSINESS FIRMS IN SRI LANKA

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## Abstract

*The objective of this study was to explore the use of e-learning for employee training and development purposes. Four well-established private sector business organizations that use e-learning as a critical component of their training delivery were selected as case study firms. These firms belonged to the business sectors of offshore software development, telecommunication, commercial banking, and private tertiary education. The study was confined to e-learning solutions provided for executive and above level employees. In brief, it was found that the three firms, except the software development firm, use e-learning as an asynchronous application while the software development firm uses e-learning both as asynchronous and synchronous e-learning applications. With regard to the methods used by the firms to evaluate e-learning to find out its effectiveness, attrition, and appeal to learners, only the bank and the telecommunication firm made certain attempts to evaluate e-learning based training. Employees from all the four firms identify several factors that hinder the exploitation of e-learning. Overall, the findings of the study suggest the importance of effective design and delivery of e-learning solutions as a training mechanism in addressing both organizational and employee expectations. Hence, the findings imply that the successful implementation of e-learning solutions requires significant planning and effort.*

*KEY WORDS: e-learning, employee training, on-line learning.*

## Introduction

In the rapidly changing world of work, organizations identify the importance of investing in employee training and development (Bassi & Van Buren, 1999). At the same time, advancements are being made in training approaches (Nisar, 2004; Owens & Price, 2010; Welsh, Wanberg, Brown & Simmering, 2003). The literature identifies one of the important advancements in training approaches as e-learning (DeRouin, Fritzsche, & Salas, 2004; Nisar, 2004). E-learning is generally defined as a wide set of applications and processes, such as Web-based learning, computer-based learning, virtual classrooms, and digital collaboration, where information is delivered through varied formats such as graphics, videos, audios, animations, models, simulations, and visualizations (DeRouin et al., 2004; Kaplan-Leiserson, 2002).

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E-learning has made a substantial impact on the way organizations train their employees (DeRouin et al., 2004), and the use of e-learning has increased and will continue to increase in delivering training (e.g. Rossett, 2002, Welsh et al., 2003). Organizations adopt e-learning based job-related training to reach a diverse and geographically dispersed workforce in a cost-efficient manner. Further, e-learning provides other benefits such as learning taking place on-demand, at any time, and at any place with an opportunity for learner control (DeRouin et al., 2004). Although in some ways e-learning may be as good as or even superior to face to face interaction, e-learning as a training strategy nevertheless has some drawbacks when compared to traditional instructor-led group or individual training events (group or individual) (Nisar, 2004; Vrasidas & Zembylas, 2003). For instance, although increased learner control has the potential to improve e-learning effectiveness (DeRouin et al., 2004), it can be viewed as cold and impersonal “lacking” in richness when compared to instructor-led training events (Nisar, 2004; Vrasidas & Zembylas, 2003). Therefore, the literature highlights the necessity of paying more attention to the design of e-learning based training than to traditional formal training in order to ensure its success (Boumarafi, 2010; Maurer & Khan, 2010; Pahl, 2003).

In the above context, the main objective of this study was to explore the use of e-learning for employee job-related training purposes. By the term e-learning, this study primarily focuses on training delivered via network technology, where training refers to planned efforts to increase job-related knowledge and skills (e.g. Noe, 2002, Welsh et al., 2003). Specifically, the study explored answers to:

- a) Why are organizations using e-learning?
- b) How is it being used by organizations?
- c) How is the effectiveness of e-learning being evaluated by organizations?  
and
- d) What are the factors that hinder the diffusion and exploitation of e-learning?

The use of e-learning by the private sector organizations in Sri Lanka for employee job-related training purposes remains dubious due to the lack of empirical studies. Specifically, no such studies have been conducted in the context of Sri Lanka. Therefore, from a theoretical perspective, it is essential to increase the understanding of this topic. It is expected that the findings of this study will be a source of general guidance in stimulating future research in this area. In order to provide context for this article, the following section provides a brief presentation of the methodology adopted for the study. Thereafter, the main findings will be presented and discussed. It is expected that the findings of this exploratory study will be able to establish baseline data to stimulate future research in this area.

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## **Research Design and Methodology**

Four well-established private sector business organizations that use e-learning as a critical component of their training delivery were selected as case study firms. These firms belonged to the business sectors of offshore software development, telecommunication, commercial banking, and private tertiary education (providing undergraduate and postgraduate degree programmes in collaboration with foreign universities). As the literature suggests a general observation that educated employees are more likely to receive e-learning opportunities than their relatively less-educated counterparts (e.g. Nisar, 2004), the study was confined to e-learning solutions provided for executive and above level employees.

Data were gathered by interviewing a) persons responsible for human resource development, and b) a random sample of employees from a range of job disciplines and various levels of executive and above job grades attached to the firms. Specifically, to explore answers to the first two research questions, data were gathered by interviewing the person responsible for human resource development in the selected three firms. To explore answers to the last two research questions, in addition to the person responsible for human resource development, data were gathered by interviewing a random sample of 15 employees (5x3) from a wide range of job disciplines and various levels of executive and above job grades at each firm. The criterion used to select employees was that each employee should have had some experience of using e-learning provided by the firm within the previous 12 months.

With regard to the demographics of the respondents of the random sample, 60% was male. 46% was single and 54% was married. The mean age was 32 years. The average number of years of service in the present firm was 3.5 years. Respondents from the telecommunication firm, software development firm, and tertiary education institute held Bachelors degrees while a majority of the respondents from the bank held Diploma or professional qualifications.

The person responsible for human resource development in the selected three firms and randomly selected 15 e-learning participants were interviewed face-to-face for a period of 20-30 minutes. The interview was based on a semi-structured questionnaire that consisted of a number of open-ended questions that allowed the participants to express their experiences in their own words. As little empirical research has been conducted on the use of e-learning by the private sector organizations for employee training purposes in Sri Lanka, the main intention of conducting semi-structured interviews was to explore the current situation to stimulate future research in this area. Therefore, the generalization of the findings or gathering specific data for comparison across the four firms was beyond the scope of this exploratory study.

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## **Results and Discussion**

In the following sections, the results of the study are presented and discussed under six sub-headings, namely,

- a) Reasons for the use of e-learning as a training approach
- b) The way e-learning is being used in the firms
- c) The nature of skills acquired by the employees
- d) Methods used to evaluate the effectiveness of e-learning
- e) Employee acceptance of e-learning as a training approach, and
- f) Factors that hinder the diffusion and exploitation of e-learning

### **a) Reasons for the use of e-learning as a training approach**

Interviews with the person responsible for human resource development in the selected three firms led to identify that the common purpose of providing e-learning solutions for employees by the four firms is to create a continuous learning climate within the firm whereby all employees would take responsibility for their own learning and development guided by identified requirements of the firm, thus minimizing the time utilized for instructor led classroom-based training.

All the firms face the vital need of addressing training needs of a large number of geographically dispersed staff. Specifically, the software development firm, whose focused industry demands up-to-date technical knowledge and skills from the workforce, has to update knowledge and skills of employees who are dispersed across a number of different global geographical locations (in different time zones). In a similar vein, the private tertiary education institute has the necessity of continuous development of its academic staff to ensure the required quality stipulated by the principal foreign university. The telecommunication firm and the private commercial bank mentioned administrative difficulties as well as the high cost involved in providing training to a large number of employees dispersed across a number of administrative districts of Sri Lanka at the training centre located at its Head-office premises in Colombo. The bank further revealed its intention of delivering at least 1/3 of training requirements through e-learning and providing a minimum of 16 hours of e-learning for each employee per year.

### **b) The way e-learning is being used in the firms**

The results for the way e-learning is being used in the firms are summarized in Table 1. The views of the person responsible for e-learning provision and employees who used e-learning based training at the bank agreed that the bank provides e-learning based training solutions by means of video tapes, CDs, interactive CDs,

and web-based HTML files with interactive content. Employees can use these as and when they require. Employees appreciated the ability of the bank to provide instant assistant to user queries since all e-learning solutions are centrally tracked by an e-learning manager stationed at the Head office.

The views of the person responsible for e-learning provision and employees who used e-learning based training at the tertiary education institute agreed that the institute uses several means to provide e-learning based training, namely, Learner Management System (Blackboard) to organize and publish course materials, collaborative learning through teamwork (Theme teams), on-line databases providing access to journals, e-books, and encyclopaedias, etc., and MIT open courseware initiatives.

*Table 1: The way e-learning is being used*

Software firm	Telecommunication firm	Commercial bank	Tertiary education institute
<ul style="list-style-type: none"> <li>• Blackboard</li> <li>• Internal documents</li> <li>• Video conferencing/ Net meeting</li> <li>• Search engines</li> <li>• Social networking tools</li> </ul>	<p>Nature and content of the e-learning materials are personalized to suit individual and group needs.</p>	<ul style="list-style-type: none"> <li>• Video tapes</li> <li>• CDs</li> <li>• Interactive CDs</li> <li>• Web-based HTML files</li> </ul>	<ul style="list-style-type: none"> <li>• Blackboard</li> <li>• Theme teams</li> <li>• Online databases</li> <li>• MIT open courseware initiatives</li> </ul>

The respondents from the telecommunication firm suggested more formalized use of e-learning for training purposes, where e-learning solutions provided by the firm always integrate with training requirements of the individual that can be found in its human resource information system (HRIS). That is, a particular employee, together with his or her immediate supervisor, identifies training requirements of the employee based on skill requirements on an on-going basis, and adds those training needs to the employee's learning agenda of the Personal Development Plan (PDP). If the identified training requirements can be addressed through e-learning solutions, e-learning materials are filtered on to the individual's online learning agenda continuously.

The software development firm also uses a wide set of e-learning applications, namely, Blackboard to organize and publish course materials, internal technical documents and case studies of past projects undertaken by the firm; video conferencing based discussions and training programmes, search engines and social networking tools such as Google, Furl, and blogs. Although this study primarily considered e-learning to be training delivered via network technology, the software development firm includes knowledge management and social networking in its definition of e-learning, describing e-learning to cover any system that generates

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and disseminates information and is designed to improve performance. Employees are frequently guided by team leaders to select appropriate e-learning solutions based on the skill requirements of the project/product. The software development firm highly promotes social networking to communicate, learn and share knowledge and employees also highly rely on search engines and social networking to solve day-to-day technical problems. A similar trend was also reported by Rosenberg (2001) and Kane, Robinson-Combre and Berge (2010). Further, all the three firms except the software development firm use e-learning as an asynchronous application, where pre-recorded materials are available to employees at any time of the day from any location (see Rosenberg, 2001). However, apart from the asynchronous e-learning application, the software development firm uses the synchronous e-learning application, that is “live” and requires the learners to be in front of their computers at the same time (e.g. video conferencing and Net-meetings). In this regard, the literature identifies the synchronous e-learning application as a less common form of e-learning (see Rosenberg, 2001).

### **c) The nature of skills acquired by the employees**

Interviews with the person responsible for human resource development in the selected three firms led to identify that employees from all the four firms mainly acquire knowledge and skills related to specific technical skills, and knowledge related to administrative policies, procedures and standards of practice of the firms via e-learning. For instance, employees from the bank gain knowledge and skills related to customer care, and banking law; the employees from the private tertiary education institute acquire knowledge related to marking assignments and providing feedback to students, plagiarism detection, and quality standards to be maintained via e-learning.

### **d) Methods used to evaluate the effectiveness of e-learning**

The results for the methods used by the firms to evaluate e-learning to determine its effectiveness, attrition, and appeal to learners are summarized in Table 2. It was revealed during the interviews that the software development firm monitors time to time the number of users logged into the e-learning system. If specific learning materials were provided on demand, questionnaire based feedback is taken from employees. However, the findings suggest that the software development firm does not formally evaluate employees' level of e-learning or learning transfer. However, team leaders and team members can identify the degree of learning of an employee when the learner applies the knowledge into project activities.

*Table 2: Methods used to evaluate e-learning*

Software firm	Telecommunication firm	Commercial bank	Tertiary education institute
<ul style="list-style-type: none"> <li>•Usage analysis</li> <li>•Employee feedback if specific courses are provided on demand</li> </ul>	<ul style="list-style-type: none"> <li>•E-test</li> <li>•Self-assessed exercises</li> <li>•Submission of feedback forms upon completion</li> </ul>	<ul style="list-style-type: none"> <li>•Completion of modules within the given time targets.</li> <li>•Submission of feedback forms upon completion</li> </ul>	<ul style="list-style-type: none"> <li>•E-learning is not formally evaluated.</li> </ul>

In a similar vein, the private tertiary education institute does not use formal mechanisms to evaluate employees' e-learning, i.e., self-directed learning initiatives covered by the e-learning system are not evaluated at the year-end performance reviews of individual staff members. However, feedback taken from Course Leaders and students in relation to a particular academic's performance during the academic semester may provide information about the academic's capabilities.

The views of the person responsible for e-learning provision and employees who used e-learning based training at the bank agreed that the bank sets a time frame to complete each module taken by employees. Further, the bank requires employees to submit feedback forms upon the completion of each e-learning module.

In contrast to the situations at the software development firm, education institute and the bank, it was revealed during the interviews that the telecommunication firm monitors an individual's e-learning through the PDP and HRIS. Further, employees are most often required to sit for e-tests to prove that they have successfully absorbed the knowledge. Some programmes have self-assessment components attached to them and the progress of the individual is frequently reported to the management. Furthermore, individuals should submit a feedback form containing information on learner's learning experience, outcomes achieved, and recommendations for further improvement each and every time he/she is engaged in an e-learning module. In general, personnel responsible for employee development and technical managers of all the firms use employee experience of e-learning solutions (if submitted) to plan future e-learning solutions.

### **e) Employee acceptance of e-learning as a training approach**

The results relating to employee acceptance of e-learning as a training approach are summarized in Table 3. It was found during the interviews that employees from both the software development firm and telecommunication firm are well aware of the fact that their respective industries are changing rapidly. Hence, employees have an inherent motive to use the system to upgrade their knowledge and skills. In the case of the bank, e-learning solutions are more popular among employees attached to the outstation branches of the bank. In this regard, Kulik

and Kulik (1991) also found support for the idea that computer-based instruction might work better in some situations than others.

*Table 3: Employee acceptance of e-learning*

Software firm	Telecommunication firm	Commercial bank	Tertiary education institute
• Recognize as the main method of learning	• Recognize as the main method of learning	• Popular among employees from outstation branches	• Acceptance varies by academic departments.

In the case of the education institute, academic staff members attached to its Department of Computing have been receptive to the virtual learning environment and have participated actively in the established mechanisms. They use the learner management system comprehensively, and collaborative learning sessions are vibrant with shared information. They focus more on building their technical skills as opposed to procedural and administrative skills. In contrast, academic staff members attached to the Business School were more reluctant to use the mechanism compared to the staff of the Department of Computing. Further, the academic staff attached to the Business School use e-learning resources mostly to enhance procedural and administration capabilities. Furthermore, it was also revealed that although the education institute facilitates its visiting academic staff who were from the State universities and industry to access the e-learning system, their usage was not at satisfactory levels due to time constraints placed on them at work. In this regard, past studies of Martocchio (1994) and Gist, Schwoerer and Rosen (1989) provide evidence that lower levels of computer self-efficacy are related to lower learning outcomes, and therefore, training provided through technology may not be equally effective for everyone.

### **f) Factors that hinder the diffusion and exploitation of e-learning**

The employee respondents from the software development firm and private tertiary education institute identified almost similar problems that are associated with e-learning during the interviews. That is, employees from the software development firm and private tertiary education institute identify difficulties faced due to the lack of personal contact which led to a high rate of attrition. For instance, newly joined academic staff members of the private tertiary education institute were often reluctant to get assistance from Course Leaders if they encounter problems during e-learning as it may be negatively perceived. Further, it was revealed that the enthusiasm of academic staff members for e-learning peaks at the beginning of an academic semester. However, maintaining this enthusiasm throughout a particular academic semester is identified as a problem.

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In this regard, past studies of Frankola (2001) and Moshinskie (2002) also provide evidence where completion rates are often potentially problematic with technology-delivered instruction and it is therefore of concern to practitioners.

The employees of the telecommunication firm revealed that the majority of e-learning materials available to them are on generic topics. Further, in many situations those e-learning materials do not focus on specific skills needed for immediate applications.

With regard to the situation at the software development firm, the employees revealed their lack of awareness of the content of the majority of e-learning materials, and therefore, the difficulties they face in finding relevant reference materials from a collection of hundreds of online documents. Further, employees from the software development firm revealed the need of recognition and reward for their efforts to enhance their capabilities. While employees are motivated by the desire for personal development, they also like to see that their efforts are noticed and appreciated by their employer.

## **Conclusions and Implications**

The paper presented a study conducted to understand the use of e-learning for employee job-related training purposes by four private sector firms. The selected four case study firms, i.e., offshore software development, telecommunication, commercial banking, and private tertiary education, were using e-learning as a critical component of their training delivery. In such a context, the influence of e-learning on employees would be of interest to academics and practitioners as little empirical research has been conducted on the use of e-learning for training purposes by the private sector firms in the academic world. Therefore, the study was designed to explore the situation in the selected four firms to generate data to stimulate future research in this area. To facilitate the study, semi-structured interviews were conducted with the person responsible for human resource development in the selected three firms, and a small random sample of employees belonging to the executive and above levels of the firms who had experience in using e-learning provided by the firms.

It was found that firms use e-learning based training to increase job-related knowledge and skills in line with their own particular needs and priorities. All the firms identified e-learning based training as a cost-saving measure to reduce travel and classroom costs and time off-the-job. However, since the initial investment required to develop an interactive e-learning course has become high, the bank found the need of having a norm to deliver a certain percentage of training via e-learning technology. This is not the main drive of the other two firms of offshore software development and telecommunication, as they were using the infrastructure of their business operations for the benefit of the employees by providing them with access to e-learning solutions.

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Further, it was found that the firm use several means to provide e-learning based training such as, blackboard, online databases, CDs, Web-based HTML files, internal documents, search engines and social networking tools. The majority of these e-learning environments are asynchronous where trainees follow structured learning programmes individually (see DeRouin et al., 2004; Rosenberg, 2001). However, it was revealed that software development firm also provides e-learning solutions by means of video conferencing and Net-meetings where trainees complete training tasks in “real time”. The literature identifies such learning environments as synchronous and suggests that synchronous learning applications are not very common in e-learning provisions (see Rosenberg, 2001).

Furthermore, employees acquire procedural, administrative and job-related technical knowledge and skills through e-learning based training programmes. Firms except the tertiary education institute, make some attempt to evaluate employee learning through e-learning mechanisms. It was found that the tertiary education institute does not make any attempt to formally evaluate employee usage and the effectiveness of e-learning provision. The other three firms use feedback forms, e-tests, and usage analysis to evaluate employee usage and the effectiveness of e-learning provision. In this regard, Welsh et al. (2003) emphasise the importance of evaluating the extent of user support for e-learning, the degree to what e-learning based training programmes utilize resources efficiently, and learners’ reactions to e-learning based training programmes for planning and delivering future e-learning solutions.

The literature suggests that training conducted through technology is not equally effective for everyone and suggests that lower levels of computer self-efficacy are related to lower learning outcomes (see Martocchio, 1994 and Gist et al., 1989). Specifically, Martocchio (1994) and Gist et al., (1989) suggest that learners with low computer self-efficacy or with anxiety regarding computers may have difficulty using the computer as a learning tool. However, the nature of the case study firms and demographics of the respondents suggest that employees of the case study firms did not face such a situation. Yet, it was found that the level of drop-out in e-learning based training could be considerably high.

Overall, while the potential advantages of e-learning make it appealing, the findings suggest the importance of effective design and delivery of e-learning solutions as a training mechanism in addressing both organizational and employee expectations. Hence, findings imply that the successful implementation of e-learning solutions requires significant planning and effort.

### **Limitations and Future Research Directions**

The study was confined to a small sample to explore the situation of e-learning based job-related training programmes delivered by the private sector firms. Further, the study relied on semi-structured interviews for data collection. The

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generalization of the findings was beyond the scope of the study. Therefore, future research in different samples and longitudinal studies that compliment interviews with questionnaire surveys and secondary data is necessary. In doing so, views from employees, employees' immediate superiors, system administrators, and human resource managers could be pooled. With regard to specific areas for future research, future studies could investigate whether e-learning stimulates learning, the efficiency of the e-learning system in the usage of resources, and the perceptions and reactions of learners to e-learning as a formal training approach.

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