

IMPACTS OF E-LEARNING ON ORGANISATIONAL STRATEGY

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Abstract: E-learning is a relatively new concept. It has been developed to describe the convergence of a whole range of learning tools, which use technology as their basis for delivery. E-learning is using technology to assist in delivering learning experiences to learners. It is also a concept which is built around the philosophy of “anytime and anywhere” learning meaning that learners can access learning materials when and as required, no matter where they happen to be located in the world or, indeed, off world. E-learning gives both strategic and competitive advantage to organisations. Business organisations recognised knowledge and people are critical resources that should be treated as treasures. In the information ages the speed of introducing new products, and services, requires employees to learn and consolidate new information quickly and effectively. This paper discusses the factors that impact the organisational e-learning and advocates the strategic context. We also conducted questionnaire survey to show the factors that impact organisational e-learning. The question posed by this paper is that: ‘Can organisation develop an e-learning strategy that encompasses the impacts of organisational strategic context?’

1 INTRODUCTION

Organisational culture is critical to the fruitful inception, growth and success of e-learning in any organisation. Kotter and Heskett (1992) related that it is helpful to think of organisational culture as having

two levels that differ in terms of their visibility and their resistance to change. At the deeper and less visible level, culture refers to values that are shared by people in a group and that tend to persist over time even when group membership changes. At the more visible level, culture represents the behaviour

patterns or style of an organisation that employees are automatically encouraged to follow by their fellow employees. Nahavandi and Malekzadeh (1993) discussed assumptions as being the third level of culture, which is composed of basic assumptions resulting from an organisation's success and failures in dealing with the environment. These assumptions encompass an organisation's basic philosophy and worldview, and they shape the way the environment and all other events are perceived and interpreted. Values, behaviour and assumptions combined with organisational leadership nurture the bond and identity that unites the members of organisations. Organisational culture places high value on information possession and control. Some organisations found the basic nature of the intranet is in direct conflict with their basic training. Huseman and Goodman, (1999) stated that the path to becoming a knowledge organisation is not easy. It requires new types of investments, new systems and viewing employees and customers differently. Khajanchi and Kanfer (2000) recognised that every organisation may have a unique solution for learning development but this depend on skill requirements; thus, the following are some of findings:

- Xerox used a "people driven" approach in designing its systems.
- The users of Eureka at Xerox were recognised for authoring and validating useful repair tips.
- HP gave away airline miles for contributions to its Trainer's Trading Post.
- Sun gave rewards and recognitions to encourage sharing. The company wants to make knowledge sharing a part of the annual review of the employees.
- Ernst & Young's senior management provided strong support for knowledge management as a key competitive advantage. Consultants were evaluated in part on their knowledge sharing.

The arrival of the Internet is a disruptive technology for the training profession. Existing models will be overturned; many trainers will resist. The losers in the profession will be those who, through cultural inertia, remain inside their own comfort zone and think in terms of traditional models. A starting point should be to look outside and see what can be learned from analysis of the impact of the Internet on business and economic activities of organisations.

2 RELATED WORK

The 'e' prefix is being attached to everything, such as e-commerce and e-recruitment, and the latest in the 'e' stable is e-learning. Different people mean

different things by the term 'e-learning'. Most use the term to refer to the provision of learning opportunities in various shapes and forms rather than the process of learning itself (Rosenberg, 2001). Zahm (2000) described computer-based training (CBT) as usually delivered via CD-ROM or as a Web download and that it is usually multimedia-based training. Karon (2000) discussed the convenience factor of well-designed computer-based training by saying that any well-designed computer-based training- whether it's networked based or delivered via the Internet – is more convenient than traditional instructor-led training or seminars. The self-paced CBT courses are available when learners are ready to take them, not just when the seminar is scheduled or the instructor is available. Hall (1997) incorporated both Zahm (2000) and Karon (2000) definitions by underlining computer-based training as an all-encompassing term used to describe any computer-delivered training including CD-ROM and World Wide Web (Galagan, 2000). Hall and Snider (2000) further explained that some people use the term CBT to refer only to old-time, text-only training. Like CBT, online training was classified as an all-encompassing term that refers to all training done with a computer over a network, including a company's intranet, the company's local area network, and the Internet. Gotschall (2000) states that the online training is also known as net-based training while Urdan and Weggen (2000), suggests that online learning constitutes just one part of e-learning and describes learning via Internet, intranet and extranet. Since the levels of sophistication of online learning vary, it can extend from a basic online learning program that includes text and graphics of the course, exercises, testing, and record keeping, such as test scores and bookmarks to a sophisticated online learning program. Sophistication would include animations, simulations, audio and video sequences peer and expert discussion groups, online mentoring, links to materials on corporate intranet or the web, and communications with corporate education records. Cases of e-learning are becoming part of organisations daily life. The following are some of the notable cases:

Case 1:

In 1996 Nancy Lewis, Director of IBM Management Development, began to develop IBM's global management training program. Recognising that more than one session was needed-but that bringing together 5000 people from around the world was costly and time-consuming; IBM looked at e-learning. The goal was to find appropriate technology to support different parts of the manager training

process-and engage and teach people who were used to face-to-face training. The IBM's Basic Blue e-learning initiative brings training to more than 5000 IBM managers annually (Webster and Hackley, 1997). Basic Blue for managers, now an IBM Mindspan solution, enables IBM to train managers to lead high-performance teams-without the expense of on-site meetings and travel. Key benefits Nucleus measured in calculating the ROI from the solution include the following:

- Direct savings such as reduced program, travel, manager off-site costs and teacher expenses along with other direct savings.
- Reduced the direct cost of content development.
- Indirect savings in the form of increased manager productivity and saved employee time.

Using a blended approach of e-learning, electronic community, coaching, and simulation, IBM was able to not only reduce costs by moving training to the e-learning, but also take advantage of the flexibility of the electronic medium to provide a richer learning environment for their staff. The management-training program includes a web-based learning infrastructure, virtual collaborative tools, content references, and interactive online simulators to complement face-to-face instruction. Managers participate in 26 weeks of self-paced on-line learning delivered through Lotus Learning Space modules. As part of IBM's ongoing management development program, IBM trains more than 5000 new managers each year. Traditionally, managers were brought together for a 5-day event to learn the basics on IBM culture, strategy, and management. As the complexity of their jobs increased, IBM recognised that five days was not enough time to train managers effectively-and that to help managers evolve with the industry, training needed to be a ongoing process instead of a one-time event.

Case 2:

For some time, training professionals working for British Airways have been considering the issues involved in time and space to learn. British Airways does not claim to have solved the issues involved in time and space to learn and is currently re-orienting and redesigning its approach.

In 1997, British Airways moved its corporate headquarters to a new building, Waterside. Some 2,500 employees would be located at this new purpose-built site. All would access to training and to be able to participate in other communication activities built on new technologies. There are technology-based activities to deliver: a discrete designated workstation in an office area, individual desktops using CD-ROMs, and individual desktops via the

local area network. Particularly important were those that used video, including desktop video conferencing, stored videos, and British Airways TV. It is established as "QUEST and Communication Points". Forty-five separate QUEST and communication points were installed. Each contained a high-specification PC that was branded to distinguish it from other desktop PCs.

In March 1999, a review showed that training was the most accessed resource at the QUEST and communication points. The usage statistics highlighted the fact that the points were most used in the areas that had promoted their use and had requested additional coaching. The British Airways training team summed up the situation as follows: we will use the knowledge gained from the trials and implementation of the points to shape our future e-learning strategy. At the same time, some difficulties were identified. Currently, British Airways is re-launching the initiative, which will now be firmly owned by the training function.

3 E-LEARNING CHALLENGES

Learning is psychological and it does not matter whether we learn at school or in an organisation not everyone learn at the same pace because of our individuality. Hayes (1984) states that learning is a relatively permanent change in behaviour, which occurs as a result of experience. It is not possible to see what people learn. However, this can be display in their behaviour. Therefore e-learning challenges the user to their full potential, because learning can be access whenever the learner chooses. But the way in which organisations learn is different compare to the traditional classroom method of learning which require an instructor, a classroom and other resources and materials. Due to the rapid changes in world economy, there is a need for organisations to provide 'just-in-time' and 'just-enough' learning to facilitate the management of change and hence create competitive advantage. Therefore organisations are able to take advantage of new learning technologies, which will provide the necessary benefits need to steer the business into the right strategic direction to beat off tough competition.

Given the broad definition of online training, it would seem safe to assume that web-based training is online training. Hall (1997) defined web-based training as instruction that is delivered over the Internet or over a company's intranet. Accessibility of this training, related Hall, is through the use of a web-browser such as Netscape Navigator. Hall and Snider (2000) define e-learning as the process of learning via computers over the Internet and intra-

nets. They extended that e-learning is also referred to as web-based training, online training, distributed learning or technology for learning. Distance learning was not included in the e-learning definition and was defined as its own entity as a learning process meeting three criteria: a geographical distance separates communication between the trainer and participant; the communication is two way and interactive; and some form technology is used to facilitate the learning process.

The context in which organisation operates internal and external training, and the role of the trainer would be expected to undergo profound changes. For an organisation operating in global marketplace, training is essential to drive the organisation through turbulence competition, from home markets and other global competitors. The greatest success for e-learning within the professional and corporate segments is to deliver specific users the training that can enable them to achieve high rewards and greater credential. The rapid developments in both hardware and software have given the trainer the potential of having new information technology tools to assist in the delivery of e-learning. The competition in the modern age, therefore, is not about metal bashing or seeking to be the lowest-cost producer; it is about harnessing the creative talents in the organisation to bring value to existing and future customers.

Organisations invest on continuously upgrading its labour, share and store knowledge for competition and strategic advantage. They encourage their staff to learn and manage the knowledge that has been gained as a treasury. The learning organisation is based on the notions that 'learn for improvement'. Organisation learning is an overall employee's activities and may also involve external stakeholder. Market orientation, entrepreneurship, facilitative leadership, organic and open structure, and a decentralised planning are the five critical components of learning organisation that have a synergistic influence on learning, which can potentially lead to competitive advantage while adaptive learning inhibits innovation. To practice learning, an organisation (e.g. government departments, companies or academic institutions) needs to be skilled at systematic problem solving, experimentation, learning from past experience, learning from others, and transferring knowledge.

3.1 Managing and Sharing Knowledge

The knowledge management enabled organisation to managed and shared the knowledge with the help of technologies. Filtering knowledge, strengthening corporate philosophy and culture, and facilitating

communication are the three strategies for managing and sharing knowledge:

- i. Filtering knowledge: Not all knowledge as the same value, so the identification of knowledge from information and data is useful in knowledge management. Too much information will lead to over look key information and under-evaluate information. By setting up cross-divisional reviewing teams, the value of knowledge can be filtered and made available to various departments within the organisation. The effective filtering knowledge requires hybrid of human and technological resource. However, computer and communication systems are good at capturing, transformation, and distribution of highly structured knowledge that changes rapidly. On the other hand, human is good at performing task such as interpreting knowledge within a broader context, to combine knowledge with other types of information, and to synthesise various unstructured form of knowledge.
- ii. Strengthening corporate philosophy and culture: Organisation should build an environment that respect individuals and encourages individual creativity for effective knowledge sharing and management. Strengthening organisation culture creates climate that fosters long-lived trusting relationship and proactive knowledge sharing within the organisation.
- iii. Facilitating communication: Effective and efficient communication can help knowledge spread quickly and throughout the organisation. In other to effectively share knowledge across the organisation, organisation should focus on knowledge flow (communication) rather than knowledge store. Knowledge improved organisation's ability to make rapid decisions and execute them effectively.

It is important to classify knowledge from information and data to prevent waste of management energy. The best use of knowledge is to innovate and focus on the future. The activities of knowledge management include capture, editing, packaging and pruning, development, categorising, and distributing.

Table 1: Factors that impact organisational strategic context of e-learning

Criteria: Impacting factors with elements	250 Organisation responses (n=250)	
	Yes	No
Management		
• Customers	240	10
• Competition	248	2
• Government Policy	80	170
Application		
• Skill Development (Training)	250	0
• KM (Knowledge Management)	180	70
• RD (Research And Development)	230	20
• Service Provider	200	50
Infrastructure		
• Economics	200	50
• Technology	250	0
• Social Culture	190	60
• Ecology	180	70
Communication		
	250	0

4 STRATEGIC CONTEXT OF E-LEARNING

The strategic context of e-learning, in terms of cost, buying off-the-shelf materials is probably the least cost option and this is currently the predominant provision of e-learning. There are a considerable number of off-the-shelf programmes available on the market with many companies offering a trial period before buying. The majority of packages are aimed at developing IT skills, for example the Microsoft certification. Whilst training for skills such as IT may be generic, organisations of all sizes still have their individual training needs and the content of an off-the-shelf programme may not be appropriate nor offer the required level of support. It may also be difficult to assess the quality of a programme prior to commitment to purchase and so as has often happened, an e-learning programme could prove to be boring and irrelevant with a high drop out rate. If an e-learning programme is not delivering the required training then it may be more cost effective, particularly where large numbers are concerned, to purchase a bespoke course. A bespoke course can focus precisely on those topics relevant to the organisation and be used many times without the cost of licence

fees. Rosenberg (2001) suggests three reasons why outsourcing may be the most suitable strategy:

As technology is developing rapidly, it may be costly to maintain state-of-the-art e-learning capacity over a long period. By outsourcing, the organisation therefore avoids the risks associated with emerging technologies. A related issue is that of competency. Whilst most organisations will have an IT department, it will be more effective to allocate resources to supporting the organisation's strategy. External providers will have the necessary expertise for developing the programme faster and they will also be aware of recent developments.

Finally, there is capacity to consider. As the demand for training fluctuates, outsourcing allows the organisation to expand or reduce training without affecting its own training department. It is necessary to have a thorough understanding of what organisation and/or the academic institution need and also to look for a vendor with a stable financial base.

Indeed, more and more programmes will be developed in-house as it can be argued that not only does this keep down costs but it also allows the organisation and/or the academic institution to have full control over the product including copyright. This will enhanced the existing skills so that the fu-

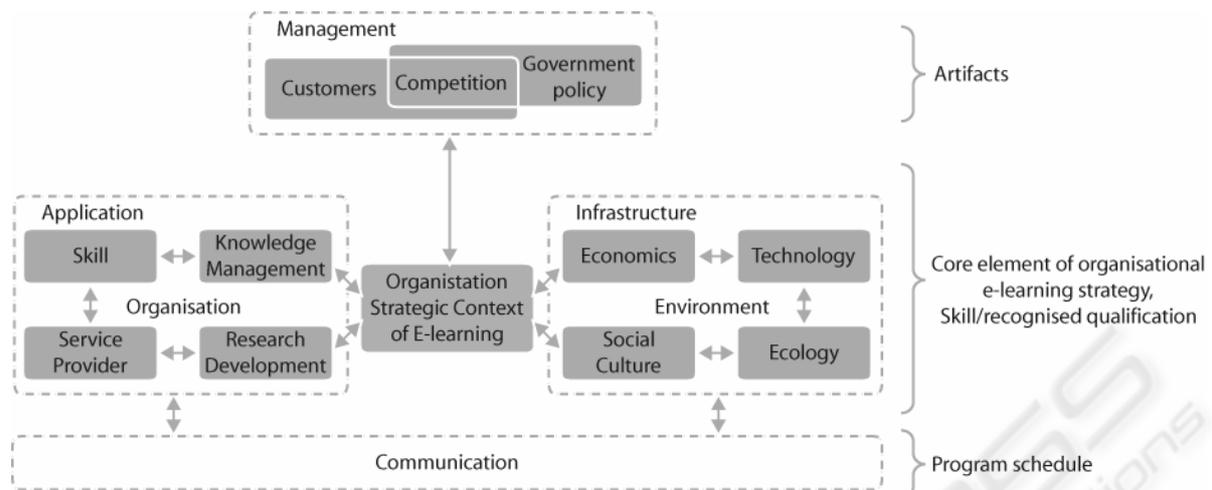


Figure 1: Organisational strategic context of e-learning model

ture development will become easier and the organisation can carry out its own maintenance.

4.1 Impacting factors

We conducted a questionnaire survey to show the impacting factors that impact organisational e-learning strategy. The 250 organisations that participated in the investigation are among the leaders in automobile, telecommunications, banking, travel and leisure, and food-and-drink industries from Europe and the USA. The detailed analyses of the factors that impact organisational e-learning strategy within these organisations was possible to be established through the completion of questionnaires. We used 4 criteria to measure the factors that impact organisational e-learning (see data generated from the survey in Table 1).

Based on the responses in Table 1, an average of 208 out of 250 organisations (i.e. 83.2%) agreed on the factors that impact organisational strategic context of e-learning while only 42 of them (i.e. 16.8%) disagreed.

4.2 Factors that impact organisational e-learning

We have also used the criteria in Table 1 to present the organisational strategic context of e-learning model in Figure 1 which includes the elements within individual factors. This model shows an iterative process among artifacts, skill/recognised qualification, core element of organisational e-learning strategy and the program schedule. The following are the factors that impact organisational e-learning:

1. **Management.** The management factor involved customers, competition and government policy, which are the elements that guide the organisation to achieve desired goals. The management deals with these factors in relation to the organisation strategy.
2. **Application:** The application factor covers elements such as skills, knowledge management, research development, and the service provider. These elements involve the activities of developing, programming, implementing and using software application that are used for organisations e-learning or support e-learning activities. The application factor addresses the 'what' and not about the 'how' of software that is, questions like: 'What skill do we need?', 'What information are we going to manage within the knowledge management?', 'What are the requirements for the e-learning application?', 'What are the research and development required?', 'What service provider to be used?' The factor does not precisely determine to exact elements that raises the most ambiguous questions: 'What the e-learning application is supposed to do?' depends on the strategic decision about 'What is the skill area the organisation actually wants to develop?'
3. **Infrastructure:** The infrastructure factor covers elements such as the economics, technology, social culture and ecology. These elements are prerequisite of the environment that is beyond an organisation's influence. The infrastructure of organisational strategic context of e-learning build on an open stands, integrates into the existing infrastructure.
4. **Communication:** The communication factor deals with issue of transmitting information.

5 DISCUSSION

The dominant technology in most discussions of e-learning is the Internet. It has advantages and disadvantages compared to other platforms such as CD-ROM. As a result, the preferred platform differs from one application to another. According to Dennis Quilter, chief executive of a training supplier, the AdVal Group, "CD-ROM is mainly used now to deliver video or for material with heavy animations" (Rosenberg, 2001). The advantages of the Internet mostly relate to its real time nature. These include the ability to continuously update and refresh materials, and its ability to provide direct communication with other people. However, in its current form, the Internet has significant limitations due to connections. These include bandwidth, connectivity problems, and spatial inflexibility as a result of the requirement for a phone line (although this may eventually be overcome by wireless technology).

It is widely believed that e-learning will bring an industrial revolution to training and education. IDC (2001), the market research company, forecast last year that the global corporate e-learning market will be worth \$23 billion in 2003 although this may take a year or two longer following the downturn in the market due to the terrorist events of September 11, 2001. Sheila McGovern, an IDC analyst, forecasts the market in Europe will grow by 46% in 2002 and 57% by the end of 2003. At present e-learning is only a small part of the overall global training market. The IT analysis group Gartner, forecasting a wider increase in the market to rise to over \$33 billion by 2005, which would make up almost one third of overall global training market (McGovern, 2002). The pure cost savings of e-learning are compelling for organisations and academia, compared to traditional training courses. Savings arise from less time off work, lower travel cost, smaller hotel bills and potentially more effective learning. IBM has reported saving more than \$80 million in travel and housing expenses by adopting on-line learning across its worldwide operations. Forrester (2000) interviewed training managers and knowledge officers at 40 Global companies and discovered that all but one already has on-line initiatives. Of those companies, 67% identified cost saving as the main reason for adopting e-learning programs. Whalen and Wright (1999) found that while e-learning has higher development cost, these are offset by lower delivery cost. Also, the reduction in course delivery time (course compression) was from 12 hours of traditional instruction to 2.5 hours of e-learning. It has the potential to deliver courses to a larger number of students as well. The amount of multimedia content was also a significant factor in terms of cost

savings. The study showed an average savings per student ranging from \$702 to \$1,103, depending on the level of multimedia.

6 CONCLUSION

Indeed, learning is becoming more, user friendly day by day and the need to carry out needs assessment to improve performance, achieve goals of the organisation, determine what potential obstacles need to be removed, and the e-learning readiness score are crucial to the future of e-learning in our society. Forrester found e-learning to be unpopular with employees with dropout rates as high as 80%. This is due to poor quality material mainly comprised of static HTML pages, which were produced cheaply. This type of static reading is not effective. On screen reading retention is 30% lower than reading with printed materials (Forrester, 2000). This is not the enhanced training that e-learning represents.

Furthermore, the survey findings have shown that the factors that impact organisational e-learning (management, application, infrastructure, and communication) and their elements should be considered when making strategic decision about the organisation e-learning adaptation.

REFERENCES

- Forrester, J. P., 2000. 'The Forrester Report, Online Training Needs A New Course: Methodology for cost-benefit analysis of web-based telelearning: Case Study of the Bell Online Institute', August.
- Galagan, P., 2000. 'Getting started with e-learning', *Training and Development* 54 (4).
- Gotschall, M., 2000. 'E-learning strategies for executive education and corporate training'. *Fortune*, 141 (10) S5 – S59
- Hall, B., 1997. *Web-based training cookbook*. New York: Wiley.
- Hall, B., and Snider, A., 2000. *Glossary: The hottest buzz words in the industry*. <http://www.brandonhall.com> (Access date: 18 January 2005).
- Hayes, N., 1984. *A First Course in Psychology*, Third Edition, Waltham-on-Thames, Thomas Nelson and Son Ltd.
- Huseman, R., and Goodman, J., 1999. *Leading With Knowledge: The Nature of Competition in the 21st Century*, Sage Publications, 2000
- Karon, R. L., 2000. 'Bankers go online: Illinois banking company learns benefits of e-training', *E-learning*, 1 (1) 38-40.

- Khajanchi, V., and Kanfer A. 2000. *Knowledge management*, National Center for Supercomputer Applications.
- Kotter, J.P., and Heskett, J.L., 1992. *Corporate Culture and Performance*, Free Press, 1992, pg. 78.
- McGovern, S., 2002. 'Finding the Right Mix', edited by Mark Vernon, *Financial Times*, Spring.
- Nahavandi A., & Malekzadeh, A. R., 1993. *Organizational culture in the management of mergers*, Quorum Books.
- Rosenberg M J, 2001. *E-Learning – strategies for delivering knowledge in the digital age*, McGraw-Hill, 2001
- Urdu, T. A., and Weggen C. C., 2000. *Corporate e-learning: Exploring a new frontier*, WR Hambrecht Co.
- Webster, J., & Hackley, P., 1997. 'Teaching effectiveness in the technology-mediated distance learning', *Academy of Management* 40 (6).
- Whalen, T., and Wright, D., 1999. 'Methodology for cost-benefit analysis of web-based tele learning: Case Study of the Bell Online Institute', *The American Journal of Distance Education*, Volume 13, No1.
- Zahm, S., 2000. 'No question about it – e-learning is here to stay: A quick history of the e-learning evolution', *E-learning*, 1 (1) 44–47



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