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Corporate e-Learning: Possibilities, Promises, and Realities

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ABSTRACT

Worldwide corporates are adopting novel and cost-effective ways to update knowledge and skills of their workforce. Advances in information technology have opened doors for collecting, storing, and disseminating information in a big way. This paper presents e-learning as adopted by the corporates to boost their employee training efforts. Concept of corporate e-learning, stimulators for adoption, various benefits and drawbacks, present state, and e-learning experiences have been enumerated.

Keywords: e-learning, corporate e-learning, online training, computer-based training, self-learning

1. INTRODUCTION

Plato, a Greek philosopher professed that everything we know comes from within, i.e., more we explore our soul, more learned we become; thus, learning is simply a process of inner reflection to uncover that already exists within us. Aristotle, a disciple of Plato, however was of the opinion that knowledge is not inborn but can be acquired through experience. This is an early example of the classic debate of nativism versus empiricism or nature versus nurture. The nativist (nature) perspective assumes that a person's characteristics are largely inborn, while the empiricist (nurture) perspective assumes that a person's characteristics are mostly learned[1]. With the passage of time and evolution of society, the view of Aristotle could only survive.

Learning may be defined as process of acquiring modifications in the existing knowledge skills, habits, or tendencies through experience, practice or exercise. Learning can be imparted via active or passive medium. In active learning, the instructor and the learner are in direct contact and this has been the ritual since the start of learning process for the mankind. In a passive medium, instructor and the learner are not in direct contact, e.g., learning from books.The technological advances in recent half a century have strengthen the means of passive learning. This is primarily due to newly-acquired technological capabilities of data warehousing and tools to disseminate information effectively using electronic means. Such advances have paved the way for an altogether newer way of learning, the 'e-learning'. This from of learning is in process of adaptation at the universities, governments, organisations, and corporates. The technological developments in this field and growing realisation of the value it offers across the society is acting as a catalyst in speedy adoption of e-learning across all the possible spectra. Changes on a global scale are resulting in "a mass higher education system that is reassessing its learning and teaching practices and exploiting the use of communication and information technologies" [2].

For companies to remain competitive in an increasingly fast-paced knowledge-driven economy, corporate, worker must be regularly updated about new developments and be provided with rapid access to new information. This new form of learning offers opportunities for the corporates to train their manpower in required fields related to their work. It is of paramount importance for the corporate to provide the right blend of knowledge source at the right time that will keep their manpower resource the most competitive possible. Attaining this advantage in a knowledge-based economy is a challenge; e-learning offers ways and means to meet this challenge.

2. E-LEARNING

E-learning is dispensation of education or training using modern information communication tools (computer, CD-ROM, DVD, Floppy, hard disk, pen drive,

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etc.) and networking technologies (Intranet, Internet, LAN, WAN, MAN, etc.). This definition addresses:

The What: Educational or training matter;

The When: On demand basis, 24x7x365;

The Where: On networked computers and stand-alone computers if using memory devices, viz., CD, floppy, pen drive, etc.;

The How: Content delivered in digital form using appropriate network or other digital delivery methods;

The Why: To make available training or study material for flexible learning [3].

E-learning essentially depend upon, and shaped by its enabling technologies; the computer hardware, the software employed, and the network used. The better is computer hardware, the more features e-learning system can display. The software employed has influence on the ease of accessibility of the provided information. The network used determines the speed of delivery of the data from the provider to the user.

Figure 1 presents the formal e-learning concept. When experiences/information are shared through education/training, they leads to learning. When information is exploited technologically it leads to organised database. When this organised database is exploited for leaning with intervention of suitable software it leads to e-learning.

3. CORPORATE E-LEARNING

Technological advances in information and communication technologies have led to emergence of newer products and possible services with their use. Entrepreneurs have mushroomed in this field giving rise to many corporates and service providers (Fig. 2). Almost every possible advantage is exploited and products and services are marketed aggressively. Technological innovations have expanded the field from its origins in stand-alone computer-based content to

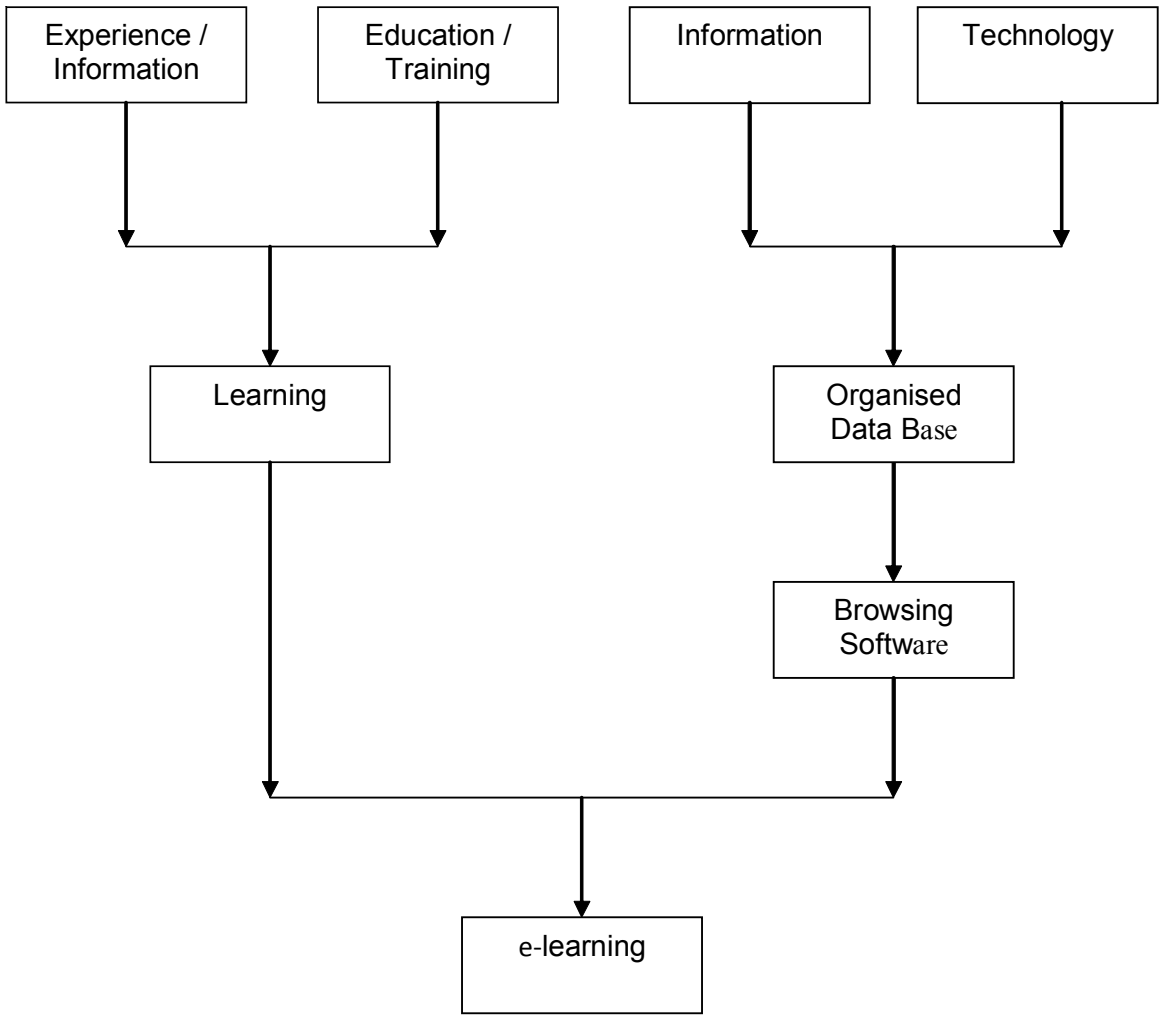

Figure 1. E-learning concept.

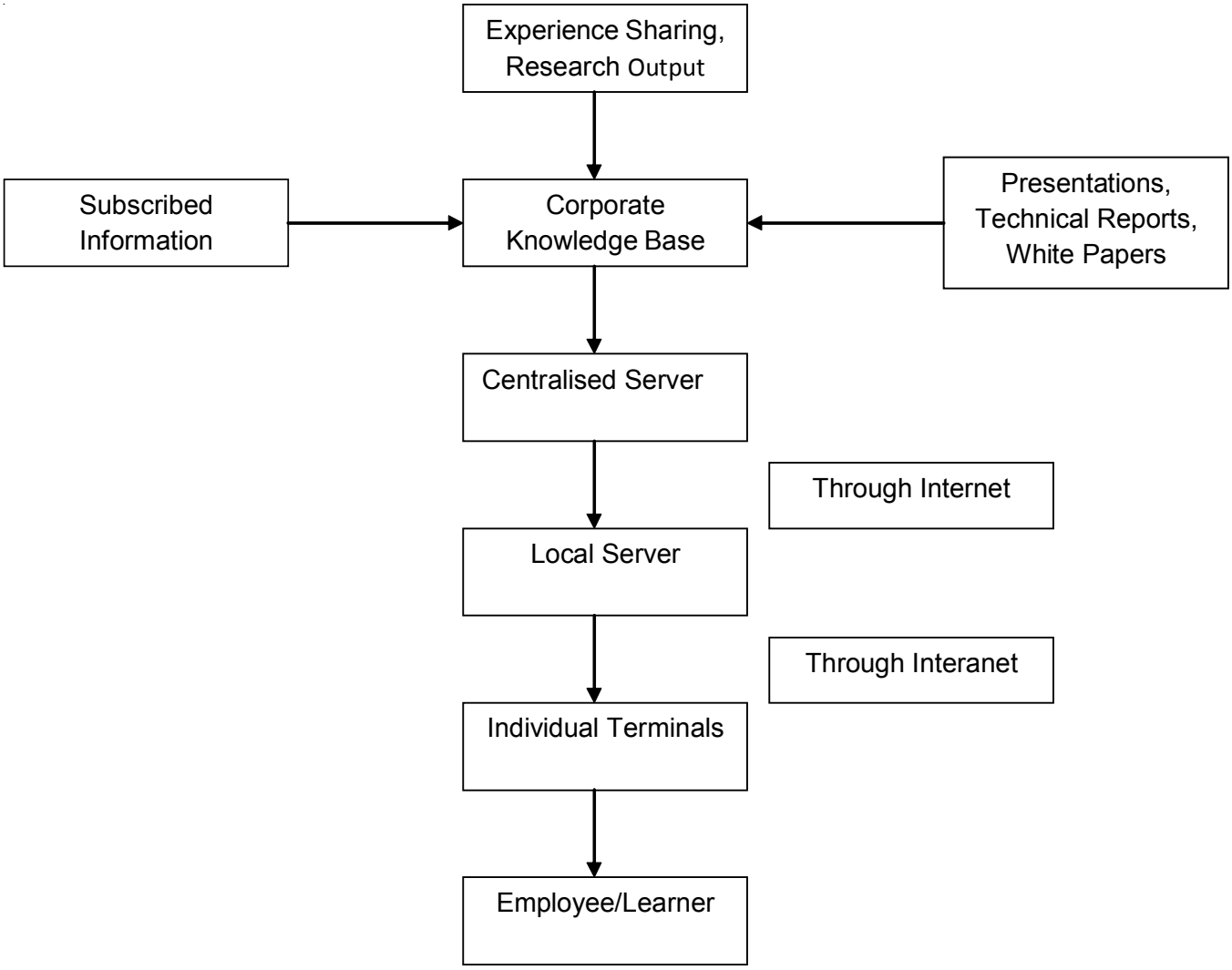

Figure 2. Corporate e-learning concept.

encompass a range of management, delivery, and collaborations technologies. The by-products of these innovations are sophisticated e-learning systems. These systems can be employed by the corporates keen on developing skills of their human capital.The use of modern communication tools and networking technologies, to impart training and develop skills of the workforce of a corporate, may be termed as corporate e-learning. This is e-learning as envisaged in the corporates. Corporates are using e-learning as means of communicating, training, and enhancing employee value across the organisations and countries. Corporate e-learning concept is depicted in Fig. 2. The corporate knowledge base contains all the possible tacit knowledge the corporate possess. This is very important in present context, when there seems to be agreement by and large that "Knowledge is Power".

Jeske and Grant[4] identified four broad stages to an e-learning implementation: planning, building, integrating, and improving. Corporate e-learning systems are dynamic in nature. These need continuous upgradation both for the data hosted and hardware/ software employed. The dynamic nature of e-learning system is represented in Fig. 3.

At the conception stage corporates make their need analysis. At the specification stage, these needs are quantified. During the operations, the concept is put to practice, and employee's feedback is also solicited, based on which new modifications and corrections are conceptualised. This cyclic iteration goes round during the entire life-cycle of corporate e-learning system and is a continuous process. The contemporary corporate e-learning systems are integration of e-content and e-management, where learning styles and preferences are combined with varying media and delivery systems to create the most compelling experience. There appear to be consistent stimulators for the implementation of e-learning, regardless the size of the corporate. These are environmental stimulators, technological stimulators, and organisational stimulators.

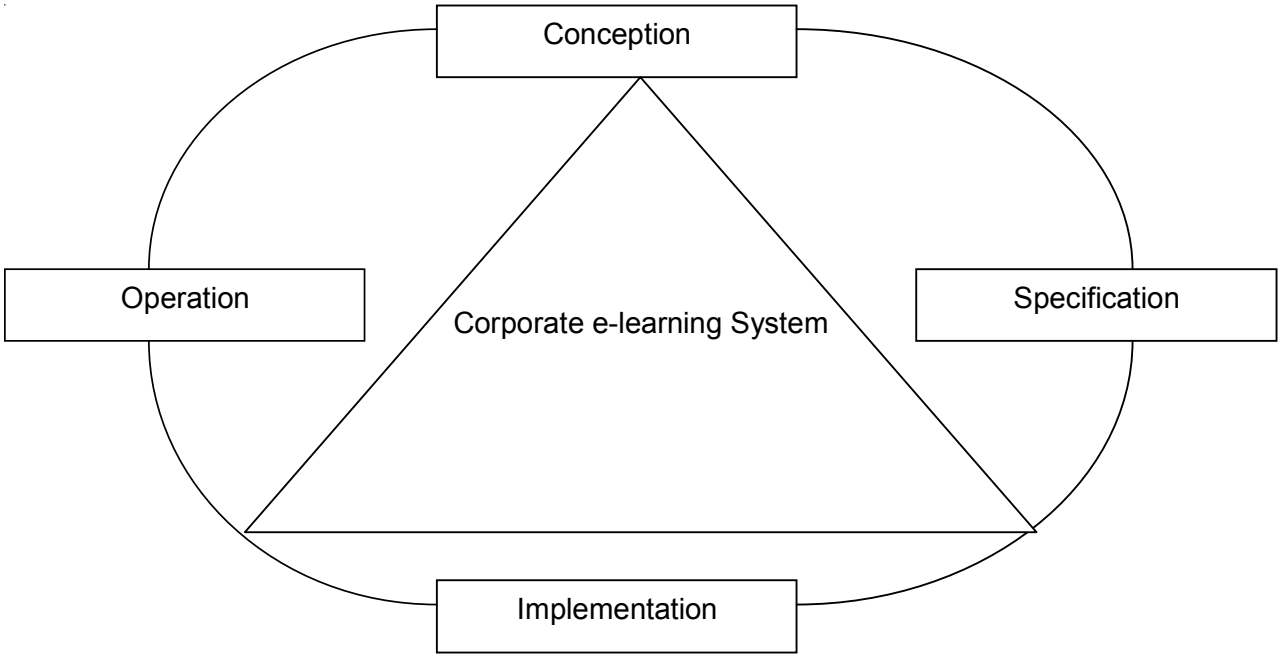

Figure 3. Dynamic nature of corporate e-Learning.

3.1 Environmental Stimulators

The need to comply with increasing array of government policies and procedures requires the ability and proof that staff has been trained to the level required to meet compliance and remain in business[5]. The corporates across the world are increasingly implementing various technologies of material management, human resource management, enterprise resource planning software, and learning management softwares to enhance their competitiveness. This race of achieving economies of scale is also one of the reasons that no corporate can afford to lag behind in this area. The skills gap and the demographic changes heighten the need for new learning models, where flexible access to life-long learning is highly desired[6]. Also with mushrooming of many service providers in the field of corporate e-learning, there is an irresistible vendor push.

3.2 Technological Stimulators

Along with the emergence of Internet, many reliable communication tools, softwares, and services have come up, which support training, learning, and collaborative work[7]. Such tools, softwares, and services provide ample opportunities for strengthening online training and learning strategies and activities[8]. The network technologies are maturing, giving rise to the enhanced connectivity capability, which has proved to be most cost-effective means of information sharing for heavy loads of information. The prices of both hardware and software employed in learning management systems are showing downward trend, both due to increase in demand and increase in number of service providers. The multimedia capabilities of a personal computer is also increasing that too coupled with downward trend in cost of sophisticated hardware employed in it. Also the use of technology makes the task easier to perform.The use of technology offers one to all communication channels, which would have been impossible otherwise, thus offering corporate employees access to corporate knowledge reservoir. The quality of training material catered electronically is also consistently improving both due to better pedagogical practices and technological capabilities of computers. This is reaching levels which is giving serious competition to even face-to-face training.

3.3 Organisational Simulators

In this new age economy, presence of information systems in the organisations is a rule rather than an exception. The newer entrants in the organisations are well versed with modern information communication tools. Computers are in abundance in the organisations, so it is natural to have an urge to be more productive with the available resources.

As cheap networking technology is available, it makes sense to connect the available computers, which opens gate for corporate e-learning. The awareness among employees is ever increasing about potential information technology applications and the leadership is ever keen on tapping this. Information technology is finding place speedily in the business strategy itself. There is growing realisation across the management that e-learning offers better return on investment.

Organisations are also realising that holding seminars, workshops or conferences detract employees from their work and result of such practices is at best weak. Corporate e-learning offers solutions to such difficulties in providing effective, low cost, immediate, and consistent training. Organisations, being under pressure to train their employees in newer technological developments and to reduce the time lag between conception and delivery of the final product, find e-learning as the only way out.

Their collaborative projects, in which collaborations are scattered at different centres of the corporate, corporate e-learning does provide means of sharing the progress with peers so that co-workers could be saved from the burden of reinventing the wheel.

4. MODES OF DELIVERY

There can be various possible models of delivering e-learning to the employees. An organisation may choose an appropriate model to suit its own circumstances. Each organisation must assess its own needs to develop a unique model that may be based on what has been shown to work effectively for others[9]. Corporates generally go for one or more of the following modes of delivery depending upon their requirements and capabilities.

4.1 Off-the-Shelf Courses

The courses are made available in CD's and DVD's. The employee interested in any particular course could ask for its CD or DVD and play it on it's terminal to learn from it. Recently many e-books have been provided for this where the learner has the freedom to navigate through the books according to his wishes. These also support multimedia content so that learner may have much richer experience.

4.2 Intranet

Some organisations are using online content created in webpages and placed on company's Intranet. These are very primitive sort of e-learning mechanism. In this, simple webpages are created with hyperlinks to the pdf or doc files, the user may just click on the page and is directed to the source material. This is very cost-effective and simple but is monotonous and unable to satisfy learner's curiosity about any unknown fact detailed in the matter.

4.3 Online courses

Many organisations choose online courses for IT training as there is general agreement that this does not need to be customised for an organisation and can be provided most cost-effectively through a hosted option in which you pay for actual usage. The corporate may enter in agreement with some IT training institute to subscribe to its online courses. The training institute would provide login id's for the course, the employee could access the course through the website of the training institute.

4.4 Using DVD-ROM through a Local Area Network

Inability to deliver large volumes of multimedia data through the Internet, where the learning content is multimedia rich, has made CD-ROMs very popular enables effective access. The DVD running on a particular system could be shared on the LAN so that other employees over the LAN could also benefit from it. Organisation can use this strategy effectively to deliver simulation learning, i.e., engaging, which meet the needs of the learners and the organisation.

4.5 Interactive Satellite Broadcasting

Failure to provide access to the Internet to all employees and bandwidth issues have forced some organisations to use interactive satellite broadcasting. One such model includes the installation of a satellite receiver at each remote location, together with a training room containing a television to receive broadcasts and interactive touch pads to communicate with the trainer. Training sessions are broadcast at scheduled times from a central location and have proved to be an effective way of providing consistent, just-in-time training to multiple worksites across the globe.

An example of this is FORDSTAR, which is 'an instructor led satellite based system for training staff employed by Ford dealers'[10].

4.6 Enterprise-wide Integrated Online Learning

Some of the larger organisations have implemented extensive online e-learning programs that are integrated with the overall human resource and performance management systems of the organisations, to provide an integrated system for tracking and managing all training across the organisation. Such systems are in place in organisations with many centres across distant locations.

4.7 Webinars

Online seminars in which participants from various places connect through Internet or Intranet which deliberate upon a topics of mutual interest are called webinars. Such webinars are increasingly becoming popular among tech savvy employees.

5. BENEFITS AND DRAWBACKS OF E-LEARNING

Major corporations have implemented e-learning widely. Corporates are using e-learning to address the training challenges of a scattered workforce and to improve coordination among internal and outside collaborators in complex business processes and projects. E-learning do offer some advantages and disadvantages, both to the corporate and the employees[9,11-16].

5.1 Benefits of e-Learning to the Corporate

Some of the most outstanding benefits to corporates are:

- *Reduced overall cost:* It is the single most influential factor in adopting e-learning. The elimination of costs associated with instructor's salaries, meeting room rentals, and student travel, lodging, and meals are directly quantifiable. The reduction of time spent away from the job by employees may be the most positive offshoot. A study across industries found that corporations saved 50 per cent to 70 per cent of their overall training cost by replacing traditional training with online delivery (Training Magazine, 2000). The cost of a Cisco Systems instructor-led course is $1,200-$1,800, compared to only $120 over the web[16].

- *Learning times reduced:* An average of 40 to 60 per cent, as found by Brandon Hall[12].

- *Increased retention* and application to the job averages an increase of 25 per cent over traditional methods, according to an independent study by J.D. Fletcher[13]. Studies have indicated that retention of certain subject matter may be up to 250 per cent greater with e-learning than with the classroom-based model[16].

- *Consistent delivery* of content is possible. Traditional classroom training does not always guarantee that the same information or quality of instruction is provided to all students.

- *Expert knowledge* is communicated, but more importantly captured, with good e-learning and knowledge management systems.

- *Faster Roll-Out* due to the ubiquity of the Internet and scalability of servers, e-learning can be delivered immediately to thousands of learners worldwide. Training that used to take six to nine months will be compressed to just two to three weeks, assuring faster time-to-market with products, and greater productivity.

- *Better visibility* through Internet allows corporations to disseminate information quickly and cost-effectively, thus ensuring that customers, suppliers and partners will be equipped with the most up-to-date information[16].

5.2 Benefits to the Employees

Particular benefits of e-learning to the employees of the corporates include:

- *On-demand availability* enables employees to complete training conveniently at off-hours or from home. Unlike traditional classroom training, which is sometimes scheduled at a time inconvenient to the learner, in a location requiring travel, e-learning offers the learner more flexibility with respect to time and place.

- *Self-pacing* for slow or quick learners reduces stress and increases satisfaction. In most learning environments, the speed with which individuals can progress through instruction varies by factors of three to seven[17]. Since e-learners are able to proceed through courses at their own pace, they are apt to learn the material more thoroughly or less likely to become bored.

- *Interactivity* engages users, pushing them rather than pulling them through training. The interactivity typical of e-learning tends to captivate the learner. In the traditional classroom environment, a student asks about 1 questions per hour [18]. Studies show that students in e-learning environments can interact with courseware via question and answer up to 120 times per hour[15].

- *Better comprehension* according to the American Society for Trainers and Development, "numerous studies have shown that workers learn faster with multimedia content; they more accurately recall what they learned over a longer period of time; and they are better able to transfer what they learned to actual performance"[14].

- *Confidence* that refresher or quick reference materials are available reduces burden of responsibility of mastery.

- *Conciseness* allows a lot of information provided in digital form, which would otherwise be difficult.

5.3 Shortcomings for the Corporates

E-learning have the following limitations:

- *Up-front investment* required of an e-learning solution is larger due to development costs. Budgets and cash flows will need to be negotiated.

- *Technology issues* that play a factor include whether the existing technology infrastructure can accomplish the training goals, whether additional tech expenditures can be justified, and whether compatibility of all software and hardware can be achieved.

- *Inappropriate content,* for e-learning may exist according to some experts, though are limited in number may not be suitable for all types of training.

- *Cultural acceptance* is an issue in organisations where employee demographics and psychographics may pre-dispose them against using computers at all, let alone for e-learning.

5.4 Disadvantages to the Employees

The ways in which e-learning may not excel over other trainings include:

- *Technology issues* of the employees are most commonly technophobia and unavailability of required technologies.

- *Portability of training* has become strength of e-learning with the proliferation of network linking points, notebook computers, PDAs, and mobile phones, but still does not rival that of printed workbooks or reference material.

- *Reduced social and cultural interaction* can be a drawback. The impersonality, suppression of communication mechanisms such as body language, and elimination of peer-to-peer learning that are part of this potential disadvantage are lessening with advances in communications technologies.

6. IMPLEMENTATION OF CORPORATE E-LEARNING SYSTEM

The key requirements of e-learning system are capturing, converting, and delivering useful, current, and dynamic content, in the face of constantly changing learner requirements. Multidimensional inputs from all stakeholders are required for its realisation.

The corporate, based on its assessment, may decide to implement e-learning system in-house, if all necessary infrastructure and trained manpower is available or can be recruited. The other way to go is to outsource it. Both outsourcing and insourcing have their own advantages and disadvantages. Few of the characteristics of both are listed in the Table 1.

Table 1. Comparison of insourced and outsourced e-learning systems

Characteristic	Insourced	Outsourced
Management	Internal delegation of responsibilities to various stakeholders	Contractual arrangement, management task limited to reporting the malfunctions to service providers.
Security	As internally controlled, therefore, no risk of data being stolen.	Lot of compromise on information security is to be made as it is available to service provider.
Capability	Limited to the skill of the manpower available	Generally better, as the service providers are specialised in this.
Content	Very relevant but may suffer due to poor representation.	Better as they expertise in pedagogy, instructional design, and learning management systems.
Software	Have to acquire a software or develop in-house.	Is provided, capable of information storage and retrieval. Generally customised to the client needs and desires, added features available.
Staff	Needs to be trained or hire experts.	Service providers have expertise.
Implementation	Easier as users and implementers interact frequently	A prior need analysis is required, which may be more difficult for service providers.
Feedback	More communication channels, so better feedback.	Less interaction

7. PRESENT SITUATION

Nowadays, corporate learning and training have ascended to a position of strategy in the context of responding to the shift in the worldwide economies from industrial age to knowledge age. New universities are emerging within the confines of corporates called 'corporate universities'. These cater to the information and knowledge requirements of the corporate employees, where the corporate employees are both the contributors and beneficiaries. As we move forward, there is growing realisation that for any corporate to flourish or for that matter even to retain its customers, it has to acquire, deliver and manage knowledge speedily and at the lowest possible cost. With two-thirds of corporate training budgets comprised of travel expenses alone, managers are turning to e-learning to reduce costs and increase the scope and potential of their training programmes**.**

The global e-learning industry comprises of more than 5000 players offering varied services, there is no clear leader in e-learning industry at present. All these e-learning service providers could be broadly categorised as content, technology, and services providers. There are many companies which provide intersection of these services and some may provide all solutions. Content providers make available custom courses according to the demand placed and also develop courses specific to some upcoming subject or skill and market it to the corporates. Certain e-learning vendors license content from large Brand holders among academic institutions or professional associations and develop libraries of online classes targeting the B2B, B2C, and post-secondary education markets.

Technology vendors provide consultancy about hardware, software, and network requirements. They may be roped in for complete infrastructure installation also. These basically provide all the necessary tools for creation, delivery, and management of e-learning system. Service providers offer a variety of learning-related services, viz., portals, learning management systems, and virtual reality systems.

Portals provide access to multiple sources by aggregating, hosting, and distributing content. Learning management systems provide a platform to easily upload the courses and easy navigation through these. Their could be value additions such as offering assessment and testing services, certification, online tutoring and mentoring, and Internet-based collaboration services.

8. AN E-LEARNING EXPERIENCE

Schofield [20] found that three of the companies (Ford, ANZ, Qantas), viewed e-learning as essential in implementing a corporate strategy to deal with the competitive pressures of global environment. Almost all the top global corporates with centres in different parts of the globe have implemented e-learning systems in one form or the other. Here, the experience of an Indian multinational company, Infosys is given for illustration. Infosys has a global footprint with offices in 18 countries and development centers in India, China, Australia, UK, Canada, and Japan. Infosys has over 58,000 employees covering 57 nationalities. In the company, individual and team training needs are identified based on inputs from business goals, departmental action plans, performance appraisals, role-based competency, client satisfaction survey, 360^{o} feedback. Project level training is imparted on specific technology needs and a part of the project effort goes into on-the-job training on technology/ process areas. To provide best in class services for its customer Infosys has to constantly focus on its workforce talent development using "Technology Competency Centre" and has developed an exceptional hybrid model (traditional/e-learning) to train the fresh hired graduates in a different environment and train other workforce on an ongoing basis, all using state-of-the-art infrastructure and world-class technology solutions. In its pursuit to build a world-class training facility, Infosys decided to consolidate its learning activities in Mysore and started the Global Education Centre.

The 14.5-week fully-residential foundation programme consists of generic and stream-specific trainings in different technology areas, along with soft skills and leadership programmes out of which many are executed or supported on Learning Management System popularly called in-house "Technology-Assisted Learning" platforms. Be it technical training, quality process training, personal effective managerial programmes or behavioural programmes, "Technology-Assisted Learning" e-learning model supports all and allows to match the required scale. Various stakeholders can create the e-learning contents rapidly based on the internal published guideline for quick and easy deployment of the same on Infosys LMS to provide easy accessibility for geographically distributed people [21].

9. CONCLUSION

In the knowledge-based economy, there seems to be widespread consensus that corporates need to devise new mechanisms to impart newer skills to their employees. Corporates in their endeavour to be competitive are fostering concept of lifelong learning among their employees. e-learning offers numerous possibilities for leveraging knowledge and education resources in the context of lifelong learning[22]. The corporates are trying to improve the quality and abilities of their own employees through e-learning systems. When an organisation decides to implement e-learning, it

is typically the result of a need for employee training, professional development, organisational knowledge management, or customer education[23-25]. As the competition among the corporates intensifies, the corporate e-learning may move towards necessity rather than desirability.

The main obstacles to e-learning, such as quality content availability, interoperability, quality navigation through content, bandwidth, and service integration are currently being addressed and should not impediments in near future. At present e-learning market is full of vendor's providing ever improving e-learning experience. Corporates must see that the e-learning system they deploy is enterprise-wide and scalable according to changing needs, it should be cost-effective to install, update and revise, it should have some centralised tracking feature to see the actual use and evaluate ROI and it should be marketable among the employees. Corporates must strive to take their e-learning systems towards a comprehensive collaborative systems with communication channels open to all sections of the corporate to realise the best possible benefits from it.

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