

CHAPTER – 4

E LEARNING FRAMEWORK

"We need to bring learning to people instead of people to learning."

Elliott Masie, Masie Center

4.1 Scope for using CBT/E Learning –Types of Training

4.1.1 **E learning has to penetrate all areas of learning:** The Indian Railways has to train large number of categories of staff belonging to different departments. Training is required in different areas, such as technical skills, soft skills, behaviour and ethics. A good induction training that can be repeatedly accessed by them will improve their familiarity with the organization. Further, for enhancing knowledge and skills, learning has to become a continuous process rather than a distinct event. An effort has, therefore, been made to explore the areas in which e learning is being used today. The literature study reveals that it is penetrating all areas of learning. Some of these are discussed in the succeeding paragraphs.

4.2 Induction Training

4.2.1 Induction Training is the training given to new employees to familiarize them with the Organisational structure, their job requirements, duties and responsibilities and other organizational matters. This training is perhaps the most important of all trainings that follow, as it puts the organization and the job requirements of the employee in proper perspective. However, large organizations are not in a position to provide induction training to all their employees due to the costs and logistics involved. Thus, only those employees for whom this training is considered inescapable, in view of their job requirements, are imparted this training, while other employees have to make do with informal, on the job training.

4.2.2 **ICT supports induction training:** A survey of literature reveals that corporates are using e learning and blended learning solutions for new hires. The benefit of ICT in induction training was amply demonstrated in the ATiT Pilot Projects, a study funded by the European Commission which aimed to identify and create effective induction training and find ways to enhance ICT in the induction process. It found that “a training package to support job coaches within the company, to improve their work: the training of new employees on the work floor”¹⁵ was required because the job coaches were not trained to be a coach.

¹⁵ ICT Supported INDUCTION TRAINING, Learn@ work Project, 2007. (Online)

Available: www.learnatwork.info (accessed 19 February 2009)

4.2.3 CBT is suitable for induction training in the Railways: Considering the large number of employees in the Railways and its geographical spread, CBT would be a suitable and viable option for induction training either in stand alone or in blended form. CBT induction modules created for different levels of employees can be used repeatedly for new hires. As a result, large number of trainees can undergo training concurrently through e learning mode. Employees can also access them frequently, at their ease and also progress to higher levels of induction training. Passing of an online examination at the end of such training can be made mandatory or alternatively, incentives can be linked to passing the online examination.

4.3 Skills Development/ Vocational Training

4.3.1 Skills shortage in India: One of the challenges facing India is the skills shortage despite the large, relatively young workforce. This leads to a situation in which Industry is in need of workers but the large pool of unemployed youth does not possess the necessary skills for employment.

4.3.2 CBT can enhance technical skills: Innovative computer based training/ simulation software that combines both theory and practice can be used for distance learning, in blended situations as well as to supplement traditional classroom training. "Research has shown that computers can effectively teach

vocational skills. As well, research has shown that computer-based training can be used to take students to a higher level of skills in the same amount of lab/shop time or reduce the time needed to train students in labs/shops. At the British Columbia Institute of Technology, computer-based training has been used to train aircraft mechanics in how to make fewer errors, mechanics in how to take disassemble, assemble, and inspect aircraft engines, carpenters how to build roofs, plumbers how to troubleshoot hot water heating systems, plumbers how to test and troubleshoot backflow prevention systems, plumbers how to adjust the air/gas mixtures in furnaces, fish canners how to identify flaws in cans and the cause of those flaws, nurses how to handle patients with spinal injuries, doctors how to diagnose diseases, and teachers how to teach”¹⁶.

4.3.3 A review of the literature indicates that Computer based training in skills development has certain inherent advantages:

- For teaching advanced skills experts are required. However, experts are short of time and not readily available apart from being expensive. With CBT, **advanced skills can be taught anywhere and at anytime**. Equipment can also be a constraint in live situations. For example, demonstrations that involve disassembling equipment or installing components especially when the number is large are difficult to demonstrate to a class full of trainees. Also material that is very

¹⁶ Fenrich, P.J. ‘Effective Vocational Computer-Based Training’ (Online)

Available: www.wikieducator.org/images/d/d5/PID_357.pdf (accessed 19 February 2009)

expensive or dangerous cannot be made available in a traditional setting but can be 'seen' and 'handled' in CBT. Other advantages include repetition of activities that may have gone wrong, accessing the training while working with the equipment or material.

- "A major benefit of using computers to teach vocation skills is that learners receive **individualized instruction**. With individualized instruction that is designed well, students can work at their own pace, proceed when they are ready, control their own learning path, and review as often as they want, experience an infinitely patient tutor, be actively involved in their learning and have immediate feedback, be objectively evaluated, learn privately without peer competition, learn when there is a need, and learn when they want
- Practical benefits students can receive include **significant increases in learning and retention** while at the same time taking less time to learn the skills, participating in instructional strategies that are not possible in traditional settings, an alternative method to learn skills, and more interaction (when designed well) than in traditional settings
- Benefits of computer based training/simulation instructors, facilitators, and supervisors can receive include having **a solution for teaching skills** that they are not able to teach effectively through traditional methods as well as saving time through reduced teaching, marking, and preparation time

- The major benefit of computer-based training/simulation for administrators is **cost savings**. Cost savings can be through reducing instructor time, the time employees are away from the job, travel and accommodation expenses (e.g., when employees are located at distant sites), fees (e.g., tuitions), and costs of using needed equipment for training instead of generating income (e.g., airplanes used for training cannot make money by transporting passengers)¹⁷

4.4 Enhancing Knowledge through E Learning

4.4.1 **Learning in the Information Age:** Unlike in the earlier eras, the employees have to continuously update their knowledge in the information age. **“ICTs are crucial in coping with the explosion of knowledge over the lifetime of the learner;** otherwise, people’s knowledge becomes obsolete, and countries become marginalized..... To function effectively in the modern world, citizens need more than a basic education. The structure and content of learning activities should equip all children, youth, and adults with the knowledge, skills, values, and attitudes they need to survive, to improve their quality of life, to empower them to participate fully and responsibly in the life of their communities and nations. This education also should help them to initiate and adapt to the

¹⁷ Ibid

changing circumstances of their environment, and to continue learning according to their individual needs and interests. Clearly, any strategy to engage all citizens in lifelong learning will require application of technologies¹⁸ Today, governments, NGOs and corporates are leveraging ICTs to enhance knowledge of their employees/stakeholders in various areas - agriculture, farming, health, market information, maternal care, and reproductive sciences through ICTs.

4.4.2 The e- Choupal initiative of the ITC group launched in June 2000 is an illustration of how technology can be used for enhancing knowledge of the disadvantaged groups for business purposes and at the same time achieve a larger societal purpose. E-Choupal leverages the Internet to empower small and marginal farmers. Village internet kiosks managed by farmers – called *sanchalaks* enable the agricultural community access to ready information in their local language on the weather & market prices, disseminate knowledge on scientific farm practices & risk management, facilitate the sale of farm inputs and purchase farm produce from the farmers' doorsteps. Real-time information and customised knowledge provided by 'e-Choupal' enhance the ability of farmers to take decisions and align their farm output with market demand and secure quality & productivity.

¹⁸ Technologies for education, potentials parameters and prospects. Report prepared for UNESCO by Knowledge Enterprises, Inc.

Available: http://www.ictinedtoolkit.org/usere/library/tech_for_ed_book.pdf (accessed 19 February 2009)

Approximately 4 million farmers are reported to be using the network of 6,500 e-Choupal centres spread across 40,000 villages. E-Choupal has emerged as the gateway for an increasing array of commodities leaving farms – wheat, rice, pulses, soya, maize, spices, coffee, aqua-products and a reverse flow of FMCG, durables, automotives, banking and insurance services back to villages. The benefit to the farmers is by way of enhanced farm productivity and higher farm gate prices while ITC benefits from the lower net cost of procurement (despite offering better prices to the farmer) having eliminated costs in the supply chain that do not add value.

4.5 Soft Skills Training

4.5.1 **Soft skills are as important as technical skills:** Soft skills are behavioral skills. Therefore, training in soft skills has to generate behavioral outcomes. It has been long argued that no training, however well-designed, can be greatly effective in changing the behavior of an individual. However, training has the potential to change behaviour and skills that are a result of the environment, information and knowledge. Therefore, corporates have been training employees in behavioural skills such as leadership, communication, listening skills, logical thinking, interpersonal skills, team spirit, social grace, etiquette, negotiation skills and behavioural traits such as attitude, motivation and time management. Short, self paced, e-learning modules are increasingly being used by organizations to

help learners imbibe soft skills that are essential for organizations to deliver results.

4.5.2 Government employees also require training in soft skills: Public perception about Government employees in India is that they lack soft skills. In today's competitive and globalised world this can cause immense damage. Organisations like the Railways are now giving special emphasis to imparting soft skills training to all their 'public dealing' staff. CBTs can be used to supplement conventional training methods. Many organizations are using the CBTs of Mac Anderson who has produced a large number of CBTs on soft skills such as "Inspiration 365 days a Year" and "Change is Good".

4.5.3 Life skills training at CAP Foundation

CAP Foundation, a NGO, works for the disadvantaged youth in India, Nepal, Sri Lanka and Bangladesh. It imparts vocational and employability training to underprivileged and out of work youth. Apart from facilitating learning, these courses also enable youth to acquire life skills needed for a positive education-work-life balance. The core module of CAP has been digitized with the aid of multimedia tools. This helped CAP prevent the dilution of its well formulated life skills curriculum and assisted in effectively training the facilitators.

Life Skills education of CAP has four focus areas:

- Developing personal competencies

- Social and interpersonal skills
- Managing situations
- Getting ready for work

CBT modules to arrest dilution of curriculum: With an increase in the number of training centres, there arose a need to train more facilitators. But over time, the life skills curriculum was being diluted. In order to effectively train facilitators in life skills, there was a need for a support tool. With the help of multi media programmes CAP developed a facilitator training module for its life skills curriculum, which also helped mitigate its dilution, as the facilitators were now equipped with a self learning and continuous reference tool.

Visuals help in increasing effectiveness: For students wishing to pursue a career in Customer Relationship and Sales(CRS), an understanding of the nuances of dealing with customers is needed. Equally important is their work readiness. More so, for those coming from economically disadvantaged background, who need a thorough experience of the urban, consumerist lifestyle. This course has also been digitized. Visually appealing demonstrations suited to a scenario was developed to make the CRS course more effective. The new CRS module developed includes simulations of retail lifestyle with numerous photographic representations and many video demos. The video demos were shot at shopping centres, thus giving a real time picture of the skills required in the retail business. CRS modules include Grooming, body language, and handling a customer, right from their entry to departure after billing

High School Curriculum Supplement: This course has been developed to educate learners on the various careers that they could take up. The High School Curriculum Supplement tool connects the core subjects taught at school with related careers paths through packaged career expertise along with visual appeals on a multimedia platform. The audio-visuals, along with effective learning support material helps sustain the learners interest and involvement. It gives them an opportunity to understand the nuances of various career paths and help them take informed decisions. Cap has also implemented this project in government schools, where teachers have been trained in the delivery of these lessons.¹⁹

4.6 Ethics Training

4.6.1 **The market is NOT amoral:** A few decades ago 'business ethics' was a contradiction in terms. It was considered to be trivial or irrelevant. The market was supreme and it was amoral. "The most generous view was that business ethics had something to do with corporate philanthropy"²⁰. However, growing corruption, electronic data piracy, unscrupulous deals and underhand tactics,

¹⁹ DigitalLearning, September, 2008 "Linking Learning and Livelihood Through ICT" (Online)

Available: <http://www.digitallearning.in/articles/article-details.asp?articleid=2142&typ=DEVELOPMENT>
(accessed 28 September 2008)

²⁰ Sharpe, Paine Lynn. 2003 "Value Shift". Tata Mc Graw Hill

environmental degradation, and business scandals have forced corporate and companies to change their attitude towards values and ethics in business.

4.6.2 Ethics is now an integral part of Corporate training: In recent years, many Companies have launched ethics programmes, created corporate ethics departments or ethics committees. They have launched educational programmes to create ethical awareness and help employees integrate ethical considerations into their decision processes. Many have devoted time to defining or revising their company's business principles, corporate values, or codes of conduct.

4.6.3 Ethics training is not a one time exercise: Making ethics a part of the organizational culture takes time and is an ongoing process. Training, to help employees and managers understand their own ethical paradigms and impact of their personal value systems, can help them when they are confronted with ethical dilemmas. However, imparting training in ethics cannot be a one time exercise. Nor is such training easy to impart. A lecture on the subject, unless conducted by persons of immense standing, could become dull, lack the necessary impact and induce skepticism. It is here that Computer based training can be used with great effectiveness. Modules can be designed using the teachings/ experiences of persons of eminence / spiritual leaders. The CBTs of internationally acclaimed persons like Stephen Covey (the author of "7 Habits of Highly Effective People") being used in the Corporate sector are a case in point. Case studies within the organization can also strengthen these modules.

4.7 Literacy Training

4.7.1 **E learning for literacy:** Many countries across the world are in the process of deploying e learning for literacy training due to the benefit of large scale geographical applicability of e learning and cost effectiveness when applied to large populations. It also has the benefit of learning at the learners convenience and pace.

4.7.2 The **Computer-Based Functional Literacy** is a Corporate Social Responsibility initiative of the Tata Group designed to provide a basic 300-500 word vocabulary to adults over the course of 40 hours - about a third of the time of traditional training. CBFL focuses on reading, rather than writing and uses a combination of animated graphics and repetition of sound patterns to engage the learner. The curriculum is computer based which provides flexibility of learning and does not require trained teachers.

CBFL has been field **tested in five languages** - Telegu, Tamil, Hindi, Marathi, and Bengali, with the help of government and NGOs in various locations throughout India. To date, nearly 50,000 adults have learned to read at a functional level using computer-based training. In the early phases of the program, most instructors were retired teachers or part of the state literacy effort. Now many classes now conducted by those whom the program made literate.

CBFL can be used across sectors: The applications of CBFL are now being used in different ways across many sectors of society. Companies are organizing

CBFL courses for less literate members of their workforces, and some self-help and savings groups are beginning to use CBFL as a prerequisite for loan applications. In rural communities in numerous parts of India, existing Internet kiosks that provide a variety of online services to consumers are incorporating CBFL into their offerings.



The TCS Adult Literacy Programme (ALP) is a social service initiative to eradicate illiteracy in India through innovative use of information and communication technologies (ICTs). The Computer Based Functional Literacy (CBFL) is a literacy software enabling illiterates to attain reading skills in 40 hours, typically spread over three months. The CBFL is available in eight languages and it has made more than 100,000 people literates

across seven states in India. TCS is also implementing the CBFL project in Northern Province, South Africa.

www.telecentremagazine.net/articles/article-d... (Accessed 19 February 2009)

CBFL has also been exported to South Africa and a TCS team is helping experts in that country to map the sounds of unwritten South African languages and develop a script for use in computer-based literacy training.

Expediting literacy: Advocates of CBFL believe that national roll out of the program could help India achieve 90 percent literacy in a matter of three to five years, instead of 30 years which would be necessary through traditional learning. But there are challenges: the size and diversity of India's population, hardware and more collaboration with government, which has the reach and the authority critical to widespread implementation. The initiative has received national and international attention but needs to succeed and demonstrate benefits in a larger area for it to be declared an unqualified success.²¹

4.7.3 The case study demonstrates the wide scope of CBT and its innovative application towards learning. The Railways too has employees who would benefit from the literacy programme. It would also have the added benefit of removing the fear of technology for the less literate.

4.8 E learning models

4.8.1 **Many models of e learning:** There is no single definition of e learning. It refers to a wide variety of learning processes including computer based training that are technology based. The terms used and the models are continuously evolving. Levels of sophistication also vary. Organizations are using

²¹ TATA Computer-based Functional Literacy Programme. (Online)

Available: www.tataliteracy.com/impact_people.htm (accessed 19 February 20 09)

different models of e learning. Some use a combination of models depending on their different needs.

4.8.2 **Blended learning**

"A clear favourite of many organisations was to use online learning as a precursor to face to face workshops. Staff access the online environment to learn theoretical knowledge and practice skill development in a safe, self paced, learning environment. The key to its success, as with all of the online learning, was to simulate as much as possible the real workplace environment in which they would finally have to demonstrate competence. For the individual staff member the reported benefits included:

- Less stressful learning overall
- Ability to learn at own pace
- Flexibility in being able to choose own learning time and place
- Time off in lieu of time spent on the online component.

Online as an alternative

Another organisation is using online learning to cut the cost of delivering a one hour annual update training course that normally requires three training staff at a time to deliver. Using the online method is not mandatory but provides an attractive alternative for shift workers and staff who don't need to sit through a full hour of training to achieve confirmation of competency. The real long term benefits, though, are in providing consistency of training on a large scale.

Externally hosted 'off the shelf' online courses

Many organisations choose this solution 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. For example in one organisation 'off the shelf' generic courses are available to all staff in a 24x7 drop in centre at the workplace, as well as through the Internet at home. The benefits are felt particularly by shift workers and also provide an opportunity to use the time that staff are not fully engaged at work for purposeful training. While mostly used for IT training, online leadership courses are also available in conjunction with face to face workshops.

Completely Online

Another successful model is to offer a completely online course that is available over the Internet. This solution seems to work well with large numbers of workers needing training spread over a dispersed geographic region, including those who are rural and remote. Several organisations have found this model useful in providing consistent, effective training that would otherwise not be available. One organisation received feedback from a participant who reported increased self esteem, due to freedom from the pressures of face to face learning and examinations, who had 'learnt more in the past four weeks that the past four years' and had since gone on to further study as a result.

In another organisation a full day of training had been replaced by a one hour online course. This was achieved through the use of multimedia, including

sound and simulated animations based on real situations likely to be experienced by the learner in the workplace. Constant exploration of right and wrong answers in various case studies facilitated a good grasp of the concepts to be learnt.

Interactive Satellite Broadcasting

Dealing with access to the Internet and broadband issues has meant that some organisations have turned to the use of interactive satellite broadcasting to meet the needs of their organisations. 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 Australia.

Using CDROM through a Local Area Network (LAN)

Due to the inability to deliver large volumes of multimedia data through the internet, where the learning content is multimedia rich, the use of CDROM enables effective access. One organisation has been using this strategy effectively to deliver simulation learning that is engaging and meets the needs of the learners and the organisation. However they will soon also be delivering online learning across the organisation to meet other needs.

Enterprise-wide integrated online learning

Some of the larger organisations have implemented extensive online elearning programs that are integrated with the overall human resource and performance management systems of the organizations, to provide an integrated system for tracking and managing all training across the organization.²²

4.8.3 Indian Railways may consider a mix of models: Indian Railways would benefit by having a combination of models so as to suit needs of the different categories of staff and the variety of training needs. While certain e learning material can be bought off the shelf (such as modules for medical categories) most may have to be custom made to meet the specific needs of the organization. An enterprise-wide assessment of the training needs would be required for deciding the models that are best suited to meet these needs.

²² Bennick, Rita. (2004). "Implementing e learning from a corporate perspective" pp 5-6(Online)
Available: <http://knowledgetree.flexiblelearning.net.au/edition05/download/Bennink.pdf>
(accessed 19 February 2009)

4.9 An Approach to E learning: Building blocks for success

In this section, it is proposed to discuss the initial barriers and the approach to a successful e learning solution as gleaned from the literature study brought out in preceding sections of this dissertation.

4.9.1 Initial Barriers to e learning: A review of literature indicates that one of the reasons why managements do not adopt e learning is because the cost of purchasing and maintaining such systems is prohibitive for many of the smaller organisations. Initially, there are also difficulties in conceptualizing the best way to approach e learning. Development costs are high and vendors bombard them with expensive products. Apart from cost of development and dissemination and conceptualization of a plan for e learning, there are other barriers such as inertia, perceived resistance from staff, lack of personnel with IT knowledge and skills and copyright issues. However, contrary to popular perception, e learning does not necessarily involve spending large amounts of money. Many of the successful models demonstrate that 'a lot can be done with little'. Basically there has to be clarity of perception regarding what is sought to be achieved through the training and modules and models have to be created accordingly. The strategy for implementing e learning is extremely important.

4.9.2 Deciding the long term strategy: The first step is to identify afresh the training needs of the organization. This would need to be based on a clear understanding of what is sought to be achieved over the long run. The needs of

the users, the organizational needs and how e learning can fit into the organisation need to be carefully considered.

4.9.2 Focus should be on the learner: Major corporations have implemented elearning widely, but there is now recognition that success requires more than just installing elearning software and programs. It requires focusing away from the technology and onto the learner.²³ In the early stages of the introduction of elearning the technology was seen as the solution, rather than a tool that needed to be selectively chosen to meet a particular need. There was little understanding of the human element that is needed to design effective learning activities to be used in conjunction with relevant technology. Technology alone is meaningless and useless. Focussing on the learner has improved the quality of elearning but unfortunately much damage has been done in terms of the perception of elearning as a result of initial forays. Many organizations are therefore hesitant about the use of elearning due to failures (real and/or perceived) within other organisations and also due to their own lack of knowledge and understanding. However, the use of elearning is still in a growth stage and expectations continue of increased usage.²⁴

²³ Beamish, N. (2002), "The deployment of e-learning in UK/European corporate organizations", *European Business Journal*, pp 105-115.

²⁴ Schott Karr S. 2002, "Anytime Anyplace Learning", *Financial Executive*, November 2002, pp. 38-42.

4.9.3 Think big and start small; phase the implementation: As in the case of all human-computer interaction systems, the utilisation of a large-scale computer system requires structural as well as socio-cultural changes in the whole organisation. One difficulty of bringing about change in organisations especially new information systems is the resistance they are likely to encounter initially (this could be offset by incentivising employees either in the form of rewards, increments or certification, as has been suggested elsewhere in this dissertation). Fortunately, e learning plans need not have a big bang approach in order to succeed. An incremental approach or a scalable learning model works better. Experts suggest that thinking big and starting small is a good strategy in e learning. Starting small and building on the successes is better than an ambitious plan gone wrong. Modularizing is also beneficial because different components can be upgraded independently as new versions of the software become available. Also, the initial efforts should be concentrated in the areas which will give the highest returns and will, thus, be cost effective.

4.9.4 Change management strategy is crucial: All stakeholders- all levels of management, employees, unions, IT and HR departments need to be consulted, convinced and brought on a common platform. People should be involved and empowered to participate. They should not only be the recipients but contributors to the programme. The project champion should be chosen with care and the change management should be followed through with total commitment. Also 'champions' at a local level should be utilized and supported.

4.9.5 Content is king: Development of content is an expensive process. Hence, best possible use of existing materials should be made. Materials such as forms and even live databases can be integrated into the training to provide a rich learning experience without having to generate new content. Use of templates, whenever possible, reduces design and programming time and costs. At the same time it is also important to keep in mind that e training or computer based training does not mean that text or lecture material can simply be converted into a digital format. It requires innovation and expertise to manage content effectively in a manner that learners will be enthused to learn. It requires an understanding of how learners learn, how to effectively manage multimedia content and a host of other e training techniques.

4.9.6 A creative approach yields rich dividends: Many organizations have been creative in implementing e learning solutions. Thereby they have not only reduced costs but have involved their employees in the e learning development and implementation. It is important for the first experiences to be good. Hence the introductory modules should be the best possible. An illustration of how creative solutions sometimes emerge is illustrated by this example from Boeing:

“A new concept for using multimedia to transfer skills from experienced workers to new hires originated at Boeing (Seattle) a few years ago. Training was needed in a number of manufacturing techniques, yet development was prohibitively expensive and slow. In desperation, a trainer at Boeing began making video clips of a skilled worker demonstrating and discussing the process rather than taking the traditional approach of developing a script and

using professional actors. That streamlined approach reduced course development from weeks to hours”.

“One of the underlying philosophies of skill training is that perfection in the presentation is not essential. The subject matter expert may not be a professional trainer but knows the material well and can communicate it. The approach works particularly well when an acknowledged expert is training a group that knows him or her. The credibility is there, even if the performance is a bit uneven..... Development time in many projects has been reduced from a year to a couple of months, and costs are also a fraction of what they were previously. Many companies that hear about the process have the immediate reaction that it is what they have needed all along, and it is being used effectively in countries throughout the world.”²⁵

4.9.7 Learning from others: Learning from the successes and failures of others is important. It is necessary to interact with organizations that have implemented e learning and ‘see’ their programmes. Talking to vendors also increases understanding

²⁵ Lamont, Judith “Cost-Effective computer-based training” (Online)

Available:www.kmworld.com/Articles/Editorial/Features/Cost-effective-Computer-based-training. (accessed 8 September 2008)

4.9.8 Contracts with Vendors: While vendor development is in itself is too large an area, the study reveals that an organization should have a few chosen vendors with whom the organization can develop and maintain a long term working relationship so that any time invested will be of lasting benefit. Service Level Agreements (SLAs) also need to drawn up with great care.

4.9.9 Building organizational expertise: In the long run, a large organization benefits by developing expertise in house to handle all aspects of e learning since the organization understands the instructional content and design etc that will best suit the needs, psychology and behaviour of its staff.

4.9.10: People learn best when there is social connectedness. Use of CBT in a group setting can be very productive. Gains are also made when people are able to practically apply the knowledge and the learning is connected to their personal goals or rewards.

4.10 E Learning industry standards and specifications

4.10.1 Several bodies and organizations have developed specifications and standards for e learning for ensuring interoperability, reusability, manageability, etc. The US Department of Defense took the lead role to bring the work of various agencies together into a common and usable reference model popularly known as SCORM (Sharable Content Object Reference Model). The SCORM project of the Advanced Distributed Learning (ADL) Initiative focuses on next

generation open architecture for online learning, including standards for run-time communication, course structure, and content meta-data.

- “The Aviation Industry Computer-Based Training Committee (AICC) is an international association of technology-based training professionals that creates guidelines for the development, delivery, and evaluation of training technologies. The AICC pioneered the most widely accepted interoperability standards for computer based and web-based training.
- The Institute of Electrical and Electronics Engineers (IEEE) Computer Society Standards Activity Board has chartered the Learning Technology Standards Committee (LTSC) to develop technical standards, recommended practices, and guides for computer implementations of education and training components and systems - specifically, the software components, tools, technologies, and design methods that facilitate their development, deployment, maintenance, and interoperation.
- The IMS Global Learning Consortium, Inc. (IMS) is a non-profit corporation that began with a focus on higher education. Today, they've expanded their specifications and projects to address a wide range of learning contexts, including school, university, corporate, and government training. Available specifications include: Learning Resource

Meta-data, Enterprise, Content Packaging, and Question and Test Interoperability.”²⁶

There are various methods of developing the e-Learning contents. SCORM compliant Rapid content generation today is very easy because of widely available tools in the market. Some of the tools like MS Producer; Power Point, etc can be used to develop the contents for quick results and easy deployments. More sophisticated course development requires the usage of tools beyond this.

²⁶ Digital learning, December-2007. Chari, Srishail and Tiwari, Alok. “Rapid and Compliant e-Learning Content Development for Corporate Research”.