Technology Enhanced Learning: A TCS Library Experience

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ABSTRACT

Organisational success is directly linked to its competent workforce. Technology has brought about immense dynamism in information and knowledge throughput. Coping with the rapidly changing information demands is increasingly difficult, but all the same crucial. The need to identify, build, utilise, and retain talent has never been so challenging. Global organisations are progressively focusing attention on maximising the value of their intellectual resources and deliverables. Obvious benefits of e-learning are prompting the organisations to adopt it into the corporate folds in many ways. This paper focuses on how the corporate library of Tata Consultancy Services has successfully leveraged the technology platforms in two ways – firstly, to build upon the competencies of their library team, and secondly to propagate library services effectively to its global user community. The paper also provides an understanding on the efforts taken by the library team of TCS to design and populate the backend content into their Learning Management System (LMS).

Keywords: Competency management, learning management system, e-learning, competency building, organisational learning, technology-enhanced learning, LMS

1. INTRODUCTION

Traditional form of learning, also commonly referred to as the pedagogical form of learning, is increasingly complimented with e-learning methods. It is proven that the benefits of e-learning are undoubtedly multi-fold, both to the educator and the learner. Technology has crunched time and space. It has expanded human knowledge, mingled nationalities and cultures, facilitated social networks and is a precursor to competitiveness. Continuous learning and professional development has become the *mantra* of survival. There is a global mobility not only of manpower resources, but also of businesses organisations.

Globalisation has many challenges. A global organisation has an employee-base of different languages, cultures, variety in education systems, and shifting time zones. Inorganic growth has splurged the manpower strength of organisations to more than a lakh of employees in some cases. Today, International Business Machines (IBM) and Tata Consultancy Services (TCS) have around 3,00,000 and 1,15,000 global associates respectively. Within the organisation, It is found that similar roles and work profiles exist across the spread of its geographies. There is a mix of local and overseas recruits each carrying a different educational background, language proficiencies, and work experiences. Employers are expected to provide 'equal opportunities' to the workforce. But then, how does all this link to e-learning?

E-learning has much more to offer beyond the university-student bondage. Efforts are made here to take a look at how organisations have used e-learning to their benefits. Some of the offerings of e-learning are:

Technical CertificationTraining: Certain organisations make it mandatory for their employees in a specific role to possess professional certifications certified by external organisations. They can perform their work only if they continue to be recertified by that agency each year. A yearly test validates the person for that role.

Professional Competency Training: Organisations train their employees on defined skills and competencies as per their requirements such as project management, consulting, IT system administration, and so on.

Legal Training: Employees are trained at several locations on government regulations and laws on such topics as sexual harassment, workplace diversity, and so on.

Cultural and Language Training: Training is imparted to the employees on the cultural differences, languages and dialect, ethics, and etiquettes of various geographical locations of the global company. This includes business tips and do's and don'ts of a particular nationality to caution employees on the cultural errors that can cost a business.

Product Sales update Training: Sales people are trained in many countries around the world on the company's new product so that they can start selling right away, and sell with a uniform understanding of their product. Training specifically customised for new salesperson on 'How to Sell' is also included for new sales people who have never been in a sales job before.

New-Hire Training: Batches of new recruits are trained each year on what they need to know about the organisation's missions, vision, and values. It ingrains them into the organisation's working pattern and introduces them to all other operating units, to be speedily productive.

Continual Learning: Associates are educated on recent developments, technologies, and trends, to remain current in their job skills and knowledge. This upgradation helps in instilling harmonious co-existence between older staff and the fresh recruits. Most of such training is imparted through online learning or e-learning methods.

E-learning is emerging as boon to the global organisations. It kills time zone barriers. It ensures uniformity in the learning offered. It offers learning objects that people can choose as per their role and convenience. It eliminates the dependency on availability of infrastructure and the capabilities of instructors. It improves transparency in the process of skill development, and offers equal learning and growth opportunities within the organisation.

2. E-LEARNING INITIATIVES AT TCS

With this background on the various applications of e-learning in the corporate world, the article is narrowed down to the e-learning initiatives of the TCS corporate library. TCS uses an in-house developed Learning Management System (LMS). It is carefully designed to meet the end-to-end training needs of TCS employees across the globe. In other words, it groups together competency management, training, education, and learning by sharing. It is a single-point contact for all employees available on the company's portal to explore learning opportunities and grow professionally.

The TCS library is yet new to the use of LMS system. A special task force called the Core Function Team (CFT) is enforced to take up the responsibility of training and competency management of the library team. The backend efforts put in by the CFT, before the library team could use the LMS for individual and library benefits, are discussed in the following sections. With these efforts on LMS, today the TCS library has been successful in two ways—building library team competencies, and facilitating organisational learning through e-learning.

2.1 Building Library Team Competencies

The library uses LMS for professional competency development of its large library team of 140. It is physically impossible for the library management team to monitor the growth path and achievements of a large team. It was only natural for the TCS library to grasp quickly the opportunities provided by the LMS to achieve an articulated and measured professional development. However, no operational unit within the organisation can just start using the LMS upfront without a detailed background work. The steps and the various efforts put in by all the TCS libraries to build up a sound unobtrusive learning and growth platform are given below.

2.1.1 Assessing the Library Requirements

Training should not be organised without first knowing what skills and competencies are required to effectively fulfill the responsibilities of each of the major roles required to run the library. It must be borne in mind that a LMS cannot help to reduce the painstaking work required in defining competency framework across an organisation. What it can do is record these in a systematic way, so that – later in the day – they can be used as the basis for curriculum planning and for analysing the training and developmental needs. Towards this, the action points of the CFT were to:

⊕ Identify the various roles that are played by the entire library team across all its offices. Based on the spread of TCS library establishments which numbers to 65, eight library roles were identified and defined.

⊕ Identify generic and functional competencies for these eight roles. Generic competencies include the managerial or the soft-skills required within an individual such as communication, analytical ability, business acumen, leadership, etc. These are of course applicable to all the operational units within the TCS and not something specific to the library team. However, functional competencies are the professional or technical abilities and are specific to a unit. For example, a library will include information searching skills, ability to analyse reports, knowledge of library applications, or processing of

acquired library materials, etc. Since library requirements call for innumerable such skills, it was decided to group the skills related to similar areas under four broad categories, viz., information services, tools and technologies, learning and development, and library management.

✦ Assign proficiency levels from 0 to 4 to every functional competency. This ensures a steady ascent in the abilities of the person to perform a particular function such as elementary, exposure, experience, or expertise. For example at level 0, only a basic awareness on copyright is expected, level 3 may expect the library member to hold a certificate issued by bodies like World Intellectual Property Organisation (WIPO), and at level 4 the person should be able to interpret laws, anticipate and avoid violations by team, know international implications of infringements, etc. As one moves from 0 to 4, the proficiencies become more complex and cover abilities impacting the team and not just oneself.

2.1.2 Assessing the Team

Judging competencies is not the only way of looking at job requirements. In some cases, specific qualifications or certifications are essential prerequisites to be suitable for the job, e.g., MLISc degree is an entry-level pre-requisite in some libraries. In other cases, such as in technology or system-oriented positions, employees may have to obtain additional diploma in PGDLAN in order to carry out a particular task and then be re-licensed on that certificate on a regular basis. The LMS can do more than store this information—it can act on it to ensure employees are informed of their obligations and are pointed to the appropriate learning resources.

Knowing what competencies, qualifications, and certifications that are required for each library role, the next task is to find out the present background, qualifications and additional certificates of the present team members. The LMS helps do this in a number of ways by:

✦ Recording the competencies, qualifications, and certificates that a person holds.

✦ Listing the requirements of a person's current job or a job that they aspire to.

✦ Enabling the person themselves, their manager, peers or subordinates to rate them against these requirements.

✦ Delivering online assessments linked to job requirements.

✦ Recording course completions that are linked to job requirements.

✦ Recording a person's aspirations for their future career.

✦ Recording a profile of the user's learning preferences in terms of method, locations, and times.

2.1.3 Measuring the Gap

The above recorded inputs will give the CFT enough information to measure the learning gap–the difference between what the job requires and what the person is currently offering or can offer.

The LMS helps the CFT to compare an individual's profile with that of his/her current job by:

✦ Comparing an individual's profile with that of a job to which he/she aspires (typically internal to an organisation, but could be across a sector, viz., the IT industry).

✦ Identifying best matching of individuals with the particular job requirement.

✦ Identifying the learning gap across all holders of a particular job.

2.1.4 Creating Learning Resources

Revealing the gap is informative, but it can also be scary, particularly if the CFT is short of the resources needed to bridge the gaps. The situation gets especially difficult if in case any extra LIS specific learning is required outside the academic curriculum of BLISc and MLISc. It is hard to find any supplementary training programs, learning objects, and resource persons which will fit like a glove to help the LIS professional to align his services to meet his organisation's specific needs. LMS helps in designing classroom events or offline media wherein many incorporate tools that can help to develop online materials. It is implicit then that the CFT is resourceful in developing online learning objects tailored to meet the organisational needs. It becomes imperative here that the level 4 proficiency of the CFT is to have the capability to find and or design learning objects either internally, or are influential and professionally networked to arrange the same through external sources.

It may be noted that built-in content creation tools may be useful for creating simple content but are not adequate for content requiring state-of-the-art multimedia and interactivity. In these cases it would be a better idea to look for a standalone tool that generates content which the LMS can support.

2.1.5 Cataloguing and Mapping Resources

Once identified, the various learning objects for the library are uploaded onto the LMS with their details. It becomes very easy for the library team to find the resources they need to meet their learning needs, be it an internal training given by the organisation or arranged through external help. These include both, the professional and managerial programmes. Any LMS is capable of listing online courses, but it will be helpful to list all other available resources, including classroom events, and offline media (CD-ROMs, books, workbooks, etc.).

The LMS developed by TCS updates an individual's training along with competency management. The CFT has a Herculean task ahead of tagging the managerial and professional competencies to all the roles, along with their desired proficiencies. It also includes the capability to cross-reference learning resources, as and when they are identified, to competencies. This means they can then automatically list those resources that address an identified gap.

Some systems act more as course-finders, providing access to the many thousands of external courses on the market, face-to-face and online. Although these systems can be extremely useful, they are better categorised as learning portals or even learning procurement systems, rather than full-fledged management systems.

2.1.6 Filtering Resources

As anyone who has used a search engine will know, it is next to useless to be presented with a listing of about 2000 items that match the required criteria. An LMS can help to narrow down the search for the right resources by acting as a filter by finding those:

⊕ Resources that match preferences for method (classroom, self-study, etc.).

⊕ Instructor-based and real-time online events that match learners time constraints.

⊕ Instructor-based events that take place in suitable locations, e.g., the preferred city and branch office therein.

⊕ Events that have available seats.

⊕ Resources that have been reviewed favourably by previous learners.

⊕ Resources that are provided by an organisation's preferred suppliers.

2.1.7 Building the Plan

It is possible for the team members to find resources from the catalogue that meet their needs and then go ahead and make use of them, as and when they desire. To achieve cost-effectiveness, care is taken by the CFT to organise any instructor-based customised training zonal to group participants of nearby locations into one class. The classes are also split into batches to ensure non interruption in the library services, which are manned by these learners. But an LMS can also help the CFT to administer a more planned approach. It will be worthwhile to explore if the LMS can

⊕ Allow to assign courses directly to individuals or groups.

⊕ Assist members in selecting the right combination of resources to meet their needs.

⊕ Sequence selected resources sensibly; and by recording this sequence in the form of a learning plan.

2.1.8 Agreeing the Plan

Providing easy access to learning resources is different than providing controls where the resources are scarce (say places on classroom courses) or where budget is involved is another. Presently, an inbuilt workflow with role-defined rights enables the library management team to carry online approvals/rejections for learning requests received from their teams. An LMS can help the CFT in limiting access to resources which are aimed at specific target groups, e.g., some programs like leadership, delegation, conflict, and stress management are enabled only for the senior management team. Presently, the workflow in LMS allows for obtaining approvals electronically. However, it is not linked to the payment systems to allow a range of payment schemes, including pre-payments, credit lines, and pay-as-you-go. Though payments are online, the two systems are not integrated, but separate.

2.1.9 Monitoring Progress

The strength of e-learning lies in the transparency of the system. The CFT is keen to see how their library team grasps the lessons through e-learning. All stakeholders—not just the CFT or library management team, but even the administrators, team members, and tutors can keep themselves up-to-date with events. It is not difficult for an LMS to track who has registered for what learning and, if that e- learning course is online, when and for how long they are logged on. The LMS does not provide any assessment to incomplete training.

2.1.10 Assessing Results

In the past, it had been too hectic to do evaluation of training. How does the LMS help the CFT to evaluate the training? It can measure usage– by seats registered for. It can measure completions – how many people are actually finishing courses. It can record reactions; and if courses include online assessments, it can also provide some measure of the learning that is being achieved. Thereby, the LMS will present the roadmap of courses that each team member on a path to a competency would need. The LMS provides a dashboard to highlight the competency status of every team member. The dashboard colours indicate if the set of current competencies for a role are met by the individual or not; or in other words, what are the gaps that he/she needs to fill for his/her role.

The LMS thus makes it much easier for the CFT to keep a track of costs. And once the LMS incorporates competency management facilities, the CFT is ready to plot gaps in learning.

2.1.11 Offline Delivery

E-learning has not brought in a total disappearance of traditional methods. The team at TCS heavily depends on external programmes such as LIS conferences and workshops to acquire learning. The present LMS cannot substitute this form of learning, and the CFT will have to continue managing a wide range of formats, often in innovative new combinations. Even these offline LIS programmes are catalogued and listed for online approvals. It is mandatory for the team to use the LMS workflow for appropriate approvals. These learnings will also be tagged to the competencies and proficiencies. This way the CFT gets a report of learnings for the team in its entirety, viz., external, internal, managerial, or professional.

2.2 Facilitating Organisational Learning

Companies use digital tools mainly as a way of making business travel more selective and more productive. Yet, the potential for digital displacement of business travel is substantial. A survey in June 2008 sponsored by the online travel company Orbitz and Business Traveler Magazine[1] found that 42 per cent of businesses were exploring alternatives to travel, like videoconferencing and Web-based meetings.

Often, business situations require making sure that every member in a group learns something, and that each one learns it by a deadline. The success of organisation lies largely on the informed decision-making of its leadership. An online learning environment, which is outside the LMS, is provided through tools such as videoconferencing, discussion forums, chat rooms,

learning materials like CD-ROMs, and e-books. When the training is clearly linked with retaining the job, the training programme has a good chance of overall success. Alan, in his article on Corporate e-learning programmes, mentions that "if e-learning does continue to grow and become a predominant source of organisational learning, its effective use will have a major impact on international economics"[2].

Library is an enabler of its organisation's learning. Just as it is important for the library to enable its team to move up the competency ladder, a bigger responsibility of the library is to enhance the overall competency of the entire organisation by providing relevant information services. Realising this, the TCS library has strived to be in the forefront to use online platforms to leverage its services across its global users. In this particular scenario, the CFT for training takes a back seat, and the focus shifts onto CFT for information and research services, and the CFT for marketing. These CFTs use the technology platforms to train library team members and its users on various information products, tools, and resources. Additionally they also use the platform to market its services to the users. The two platforms, videoconferencing and WebEx, are chosen here to illustrate the power of interactive learning.

2.2.1 Videoconferencing

Videoconferencing (also known as video-teleconference and tele presence) is defined as a set of interactive telecommunication technologies which allow two or more locations to interact via audio and video transmissions simultaneously[3].

All the participants can therefore learn via a 2-way communication platform. TV channels were used to deploy this technology to receive news reports and clips from distant locations, until satellite transmission came into practice.

Videoconferencing is an effective way of connecting with people from distant locations in a typical conference environment. Being audio-visual in nature, participants at both ends can see and interact with each other.

This technology is being extensively used by TCS libraries since 2005 to conduct meetings with senior management for inputs in terms of performance, expectations, future strategies, etc. At times it has also been used to conduct training sessions on quality, marketing of services, etc., without the faculty having to physically travel to the venue. It has also been successfully deployed to conduct library's induction session from remote locations for fresh recruits.

2.2.2 WebEx

WebEx Communications Inc. is a Cisco Systems, Inc. company and its WebEx Application Suite consists of a set of online collaboration tools. Its Meeting Centre tool is regularly used by TCS Libraries. This tool supports pre-scheduled/on-the-spot, anytime, anywhere meetings with people based at any location across the globe. It provides spontaneity and interactivity on par with face-to-face meetings and facilitates sharing of presentations, applications, documents, and desktops with integrated audio-video features in a rich-multimedia environment.

WebEx Meeting Centre was successfully deployed for the first time to impart online training, when TCS Libraries' Virtual Reference Desk was launched in September 2007. The launch of this service envisaged a sudden flow of user queries (an inundated logging of online tickets for queries coming 24x7 from a range of users-new recruits, onsite associates, technology heads, location heads, and even support teams) across all geographical locations across all domains and across all operating units of TCS. It was crucial for all the library pool members of the virtual reference desk to be adapted to this onslaught in the shortest possible time and group of 35 library professionals based at 12 cities across India underwent a two-hour training session from their respective base locations. The participants were connected with a teleconference bridge for audio/interactions and simultaneously were taken on a virtual tour of the system. The desktop of the faculty was shared with all participants, enabling them to view the entire navigation screen-by-screen. They could get the feel of the system, get on the spot clarifications, discuss among themselves and resolve doubts–a complete meeting experience, totally online. After the two hour WebEx meet, all the 35 participants were fully equipped to go live with the Virtual Reference Desk in a real-time environment. Other than saving time, the meet helped save on costs of travel, accommodation, and other overheads.

Encouraged by the quick, cost-effective, and successful deployment of WebEx for Virtual Reference Desk, another similar session was arranged for educating the users across the globe on Libraries' new products and services. Search our Sources (SoS) is a customised search engine, which is recently designed by the TCS's Corporate Library, using Google Custom Search Engine (CSE) to facilitate federated searches. TCS subscribed databases were used for this purpose. Around the same time, the Library also provided enterprise-wide access to EBSCO database for its associates. A WebEx meet was arranged for a demo of both SoS as well as EBSCO for associates based at overseas locations. A 30 minute audio-visual session with a teleconference bridge proved most beneficial for the participants with interactive demos enabling marketing of services and offerings, on-the-spot troubleshooting and query resolution, ensuring a smooth launch and optimum use of resources available.

The chat transcripts, interactive whiteboard, and documents which were shared during a WebEx meeting could be saved by all participants to fall back on in future, if need arises. Associates who participated in the WebEx meeting have had a positive word to say about the utility and ease of use, which further endorsed the effectiveness of the tool. These successful deployments have paved the way for propagating Library offerings using WebEx Meeting Centre. TCS library's involvement in e-learning is thus aimed at benefiting both the library team to build team competencies, and the library users by leveraging the library services through the e-learning platform.

3. OBSERVATIONS

Having an LMS in place does not effectively aid e-learning in an organisational set-up, nor would it change the mindset of people. In-person meetings are still preferred over virtual meets, and faculty-driven learning is very much in vogue at many places. The need to make people aware of e-learning technology and tools, and to drive them towards e-platforms is one of the challenging aspects for the successful deployment of any e-learning system.

The uphill task at TCS however, was not much about the mind-set as it was about preparing the LMS with ground-data by drafting and tagging of the roles, competencies and proficiencies. LMSs can produce meaningful results only when the content is thoughtfully mapped and organised. The tricky differences between role, activity and goals became clearer as the system mandates got defined bit by bit.

To have a sound e-learning system in place, one-time investment in terms of cost and intellectual resources could be a little steep and unavoidable. But experience has proved that the results far outweigh the cost in the long run. If utilised effectively, the system can provide the backbone not only for competency and career building, but also for job-person profile matching, performance management, succession planning, etc.

4. FUTURE PLANS

TCS is an organisation which lays much importance on the continual learning of its associates. So the management has realised the need to cascade this importance down to its library team. The balanced scorecard of the library mandates a learning of 60 hr per year per library staff; the year 2007-08 touched the average of 62.4 man-hours. This was only possible

because of the strong management belief and support in the continual learning process. In the current year however, the library team plans to achieve the same learning target but with reduced costs in training and travel. In the year 2007, 14 per cent of the team learning was acquired through e-learning platform. This is a rising trend and displays a positive mindset and the readiness to indulge in virtual learning.

Apart from individual learning and development, CFT's future plan includes the use of online sessions to enrich the entire team. These sessions will reach library teams placed across locations. Training will include educating the team on professional skills like database searches, and other techniques like making company profile, analysis, and improving the organisational content. Virtual training is also planned to provide face-to-face interactions with various unit heads of the organisation, who are otherwise inaccessible. This approach is planned to attain proximity with end-users and know their needs through online meetings.

Every year, an induction session is arranged for the new library recruits to convey and uniformly inculcate the TCS values, culture, and processes. A computer-based or web-based training is being planned in the current year, wherein the entire induction session can be recorded and put up on a server or on LMS. The fresh recruits can register and attend as per their convenience. This would immensely cut down the loss of man-hours which go into the planning, designing, and conducting sessions every year, not to mention the cost saved on travel, accommodation, infrastructure, and other overheads.

Further, TCS has a collection of e-books for internal use, which is made available to all associates on the intranet. Library is planning to facilitate an integrated one-point search for the physical as well as electronic collection, so that anyone searching library catalogue would get 24x7 access to resources. This would help promote optimum use of resources, and a culture of e-learning among associates. Based on the core results of such initiatives, similar LIS specific functional competency-based training courses will be devised and launched via WebEx meetings for the rest of the team, to maintain a high profile skilled team.

5. CONCLUSION

"Good teaching is good teaching, no matter how it is done". The old proverb still rings true, especially in the corporate sector, where e-learning is increasingly being resorted to in view of its multifold benefits. A task force with rich professional experience and a broad professional outlook will surely make the learning and competency framework of the library more meaningful and exhaustive. Online platforms are more transparent and visible, and thereby help libraries to reach out and project their services far and fast. Technology has matured to the stage where it is often practical, affordable, and more productive to move bits instead of bodies. Exposing team members to working and learning models beyond the traditional set-up is gainful for the organisation as the teams are able to benefit from and participate in the pool of global expertise. Online learning and sharing is going to be an accepted way. More than 50 per cent of India's population is under 25 years of age. Assuming that there will be a tech-savvy brigade of library users, multi-channel synchronous modes of communication, delivery and learning is the change implied for the GenX libraries and their users.

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