Winter 12-9-2003

E-Learning in India: Experiences, Issues & Challenges

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Abstract

There is massive potential in the higher education space spread across the Asian continent especially in countries like India and China. Global players operating in this space are eyeing these markets. This throws opportunities as well as challenges. There are many players, local as well as global, who have experimented or are experimenting online (pure play) or blended models in education. There have been failures and mistakes, which have thrown lot of learning. As a result players have improvised their offers. Online education is now working. Though the progression is slow, it is expected to grow exponential in the coming years.

E-learning is network enabled learning. There is a race to get into e-learning space in India given the scope and size of this market in India. But many organizations and academic institutions trying to foray into E-learning are getting imbalanced due to the lack of proper understanding of the market place and internal/external requirements. IT assimilation throws unimaginable challenges. What should be the operating strategy, deliverable value, approach, processes and technology assimilation strategies so that the entire organization moves towards successful implementation of the E-learning project without compromising on its existing competencies is a serious matter for researchers to ponder. This paper tries to answer some of the above issues with the help of the experiences gained form one of the largest online education project launched and running quite successfully in India. The suggested framework evolves around discovery of a collaboration model with software and connectivity service providers and criteria of collaboration to be drawn from the learner needs and requirement. The collaboration should balance to achieve necessary value proposition for the intended learner segment by careful crafting of the Learner Centric Value Chain.

1.0 Introduction:

Campus-based education has an important place in building knowledge strength of economies though it has its limitations, especially with respect to reach and capacity. With growing population and ever increasing need of quality education for all, there is an enormous potential to tap the education market, especially in the developing countries. The role of distance and open learning has become very important in recent times to address the educational needs of the society. Advances in information and communication technologies have provided a much needed medium in the form of internet for distance education to flourish. The new technologies are not just improving existing forms and structures of higher education through better in-campus information infrastructure but are also transforming learning from focus on the institutions and instructors to focus on the learners. There are mainly two types of delivery method adopted by educational institutions in India - in campus and distance learning model. Both these models could operate in their zones in non-information and communication technology (ICT) based environment. With the use of ICT in content creation and delivery mechanism, the approach and the target segments are getting overlapped - the in-campus model extending reach and the distance model enhancing interaction quality and quantity. In such situation, it has become a daunting task for institutions to figure out synergies between their legacy and the evolved approach.

E-learning is network enabled learning. Many organizations and academic institutions trying to foray into E-learning are getting imbalanced due to the lack of proper understanding of the market place and internal/external requirements. IT assimilation throws unimaginable challenges [1]. There is a race to get into e-learning space in India given the scope and size of education market. Given the population base of around one billion and a huge working class in India, the opportunity for a cost effective open learning model to tap the potential is definitely quite tempting. With a huge demand and limited supply in the distance learning space, e-learning models have made only little ground and there is continuous search for a more viable model.

What should be the operating strategy, deliverable value, approach, processes and technology assimilation strategies so that the entire organization moves towards successful implementation of the E-learning project without compromising on its existing competencies is a serious matter for researchers to ponder. This paper examines the e-learning potential in the perspective of sector structure and size. The e-learning throws opportunities as well as challenges and there are many local as well as global players experimenting online (pure

play) or blended models in education. There have been failures and mistakes, which have thrown lots of learning. As a result players have improvised their offers. Though the progression is slow, it is expected to grow exponential in the coming years. This paper focuses on higher education and highlights issues in the e-learning based on a case study. Thus an attempt has been made to provide a framework for e-learning.

2.0 Evolution of E-Learning:

E-learning has evolved in the last couple of decades from a simplistic computer based supportive system to a highly advanced model used as a core strategic application by players in this space. Like any other service, concerned organizations need to respond to challenges like advancements in technology, changes in stakeholder demands and the challenges and opportunities arising due to globalization. Institutions and corporates across the globe have been experimenting with different models of learning throughout, alongside the advances in technology to add value in the learning process to address the challenges.

The e-learning germinated as a concept when in mid 70's research scientists who were also involved in academics interacted with students through computer networks. It was used by academia for information exchange and then as a support to university level courses. The universities started tapping the digital networking capabilities from the early 80s aggressively and started testing newer applications for feasibility. In 80's various experiments were done at the secondary level education which were national as well as global initiatives, linking school children and teachers across schools of some western countries. The results indicated knowledge enhancement and exposure to a global perspective for learners [2]. However, the first fully online Executive Education program in 1982 by the Western Behavioral Sciences Institute (WBSI) did not produce very encouraging results. This provided some important lessons for the domain experts like un-workability of long textual presentations by the instructors in online systems. Also the experience suggested that group learning applications yield better results than standalone applications. The Open University of UK rolled out first application of computer conferencing in 1989 on large-scale in a distance education course which was quite successful [3].

The Internet-based education became focus of study in distance as well as campus base educational institutions in the 90s and still continues to hold attention for some potent reasons. The advent of email system as a means of communication has been a big boost to online education projects as it provided a medium for easy online two way interactivity [4]. Internet is becoming the primary delivery mechanism because of its reach, cost efficiency and relatively easy availability. It provides flexibility not only to the learner to learn at his/her pace from anywhere/anytime but also to the instructor to operate at his convenience. A web-based course enables opportunity of creating newer learning models.

The developments in the online learning have led to initiatives among interested groups in different parts of the world to assess the differentials vis-à-vis offline distance learning. Efforts to assess the effectiveness of online education system and there by developing a comprehensive model have remained inconclusive. One such case study concluded that the quality of distance education was inconclusive and, thus, much is still unknown regarding how and in what ways, technology can enhance the teaching learning process [5].

The on-line education models have been developed across a continuum from physical to digital version taking all necessary elements to make them student centric learning models. Some examples of such efforts include European Campus 2000 initiative [5] and BESTnet and AFRINet initiative which linked universities and related entities in the learning space in US, Canada, Latin America and Africa [6].

In the late 90s, the thrust shifted to benchmarking and developing standards of e-learning. The example of such endeavor includes the initiative by the Institute for Higher Education Policy, US which established benchmarks and ranked institutions in e-learning space. The benchmarks were based on institutional support, course development, teaching/learning, course structure, student support, faculty support and assessment methodology [7].

3.0 The E-learning Sector in India:

3.1 Structure:

A quick recap of the market place is essential to have the perspective in place. The structure can be understood with the help of figure 1 given at the end. At the core of the process are service providers and the customers, whereas the government, infrastructure developers, content providers, technology vendors, and strategy consultants etc make up the external but essential entities in the game. The service providers could be academic institutions, both hybrid as well as pure online institutions, NGOs, individuals or corporates imparting education to the employees. Similarly the customers could be individual learners, academic institutions or employees. The corporate-employee interaction is gaining quite a bit of significance of late along with the academic institution-student interaction. For example 37 per cent of the 130 corporates surveyed in India by Federation of Indian Chamber of Commerce said that they use e-learning for skill upgradation and training of employees [8]. The government support is essential in educational services and may come in the form of fixed grants and development of the basic telecommunication

infrastructure. The other external players also have a very important role in the entire structure in terms of developing the required technologies, support materials, infrastructure as well as providing trained man power to handle various specialized tasks related to online delivery. These different players have played varied roles in different countries. In some countries the initiatives are divided across private and government institutions whereas in others like India the initiatives have mainly come from the Government or the government owned institutions, primarily because of no prior experience and the capital and risks associated with such large projects.

3.2 Size:

The size of the market can be mainly categorized across students segment and corporate segment. Whereas there are no authentic figures to indicate the domestic education market of India in value terms that can be tapped through e-learning but one can take clues from the information about market subsets or the rough projections of players in the field.

The market size for e-learning has close linkages with distance education market because the players in this space are targeting the same segments. Therefore, understanding of distance learner segment is essential to get some understanding of e-learning market. One can get an idea about the distance education market in India by looking at table 1. The table gives the increase in enrollments at Distance Education (DE) institutions for the period 1975-2001. The share of distance mode has gone up to 20 % in 2001 from 2.6 % in 1975-76 as percentage of total student registered for higher education (HE). Thus every fifth student at tertiary level is enrolled with the DE system. The growth in this segment is expected to be 30-40%. According to government reports, presently there are 10 Open Universities in India, with some having more than 0.1 million students. There are about 90 dual mode universities and a few privately owned professional institutions offering courses through distance mode. Thus the potential of distance education is enormous in India. The ten open universities in the country have around 0.6 million students across 3,200 study centers with around 36,000 councilors. The study centers are normally controlled by the regional centers. The learner/councilor ratio is around 16 whereas the study centre/ regional centre ratio is around 30 which depicts gaps in required mentoring and management of study centers and service levels. [9][10][11][12].

It has been estimated that in early 1990s, over 1.5 million Indian students in the higher education level were studying abroad. The US is the leading exporter of higher education in Asia followed by France, Germany and the U.K. India is fourth major importing country of educational services after China, Japan and Korea [13][14]. According to an estimate by Global Alliance for Transnational Education, about US$ 27 billion worth of higher education is exported to Asia and Pacific by three countries namely USA, UK and Australia. Roughly 50,000 students are enrolled for studies abroad from India and the number is leaping every year.

The VSAT service providers who are presently very active in education space peg the market for VSATs at around 4800-7200 units in next 3 years and 8000-12000 units in next 5 years . At present there are hardly 25-30 units functioning, disseminating education services to around 500 institution centers across the country [15].

The corporate market is very huge and companies have started using e-learning model [16]. For example LG Electronics in India decided in 2001 to impart 70% of training to its employees online [17]. There is push in corporate across private and public to using cost effective methods of training.

4.0 E-Learning Models in India:

There are mainly three types of models adopted by educational institutions in India with the advent of World Wide Web platform:

1. In-campus
2. Distance learning
3. Blended

4.1 In-campus:

Various academic institutions are enabling their existing processes with the information technology support for better administration, course management and value interaction. They normally use basic Learning Management Systems (LMS) from off the shelf or a customized package developed by the software solution providers locally. Various premium management and technology institutes of India fall into this category where instructors are using applications like Web-CT, Blackboard etc. to support instructor-learner interaction and course management.

4.2 Distance learning:

Many institutes of repute like Indian Institute of Managent, Calcutta, Management Development Institute, Gurgaon, Indian Institute of Technology, Delhi and National Institute of Design, Ahmedabad, are collaborating with academic publishing houses to offer short term executive development programmes mainly targeted at corporates. These programmes are totally web-based without any face-to-face component of any sort. The numbers are growing gradually and there are different experiences of learners across these various programmes.

4.3 Blended:

In this category, academic institutions with strong brand equity are trying to offer educational services with the aim of providing face to face experiences. There is face-to face faculty interaction in the beginning of the program followed by one way video and two way audio conferencing. The institutions in this category, typically have the content and brand to capture the market place but do not have the facilities and technical know how of offering online courses. This obstacle is being taken care of by collaboration with V-SAT service providers.

This model has the limitation with regard to number of learners that can be serviced at a particular receiving center as well as instructor capacity to handle queries in real time interaction mode across number of receiving centers.

4.4 Issues:

With the growing use of ICT in content creation and delivery mechanism, the approach and the target segments are getting overlapped – the in-campus model extending reach and the distance model enhancing interaction quality and quantity. In such situation, it has become a daunting task for institutions to figure out synergies between their legacy and the evolved approach. One can figure out critical areas of competency that apply in different models that can service learner requirements across learner styles, infrastructure and needs. The areas are mainly content, interaction and platform. The institutions are positioned at different slots across three dimensions of Platform, Interactivity and Readable content between physical and digital modes of these dimensions (Fig.2).

The institutions in India have tried alternatives across delivery and content dimensions but have yet not touched the third dimension. The Institutions, who had their courseware organized, were comfortable to digitize the content and got on to the e-learning mode by using web base delivery methods. The learners, however, have not been able to find enough value due issues mainly related to compatibility of the new interface with the legacy procedures, systems and mindset. The learner's preference is still for a hardcopy of the material or physical book as compared to digital content. The hyper linked quality has not been able to offset the comfort of using a physical book. Most of the learners in distance mode are working people who normally find time while traveling in a common passenger vehicle or their homes after office/ working hours. They normally do not have internet access in such places and if at all it is there, the costs are well beyond the perceived utility by the learners.

It is now only that in last couple of years, the third dimension is being looked at seriously by some institutions. This has been a result of continuous effort across academia, content players in software sector and corporate learning chiefs. This is, however, just the beginning and there are still lots of apprehensions by the teaching community and learners which need to be analyzed and taken care of.

5.0 Case Study: Indira Gandhi National Open University

The Indira Gandhi National Open University (IGNOU) enrolls more than 1.3 million students in 235 academic programs leading to certificates, diplomas and degrees at under graduate and post-graduate levels [18]. It started first time in the country in 1998-99 using computer networks to support distance learning in two disciplines – the degree programs in Computer Application and Management. The project called 'Management Education through Interactive Delivery Systems' (MEIDS) was initiated in late nineties to offer degree and short capsule programs to distance learners through a blend of technology and offline support. Students were provided with online application facilities, continuous assessment, online query handling and online access to digital library with the help of an external software developer. The software developer also provided the hosting facility. The content delivery plan included a hard copy of the reading material along with the web support for most of the content. The content was primarily developed in-house or by leading experts of the field on contractual basis. The mentoring included sessions by local faculty at 20 partner institutions and weekend teleconferencing sessions from IGNOU head office. The partner centres were required to have the facility of receiving teleconferencing, internet connectivity, online continuous assessment supervision and administrative liaison between students and IGNOU. The first Masters Degree program in management was launched in 1999 along with 20 other short capsule programs. The prospective learners for degree program were required to go through a comprehensive written test. Around 275 students were enrolled from all parts of the country for all the programs on offer. The revelation of experiences by the learners provided lot of substance to figure out challenges and opportunity of e-learning in this country. The authors conducted a survey of the first batch of learners through this system. Out of 275, a sample of 150 was chosen by clustering from different programs. 35 of the learners responded. The methodology of the study was based on critical incidence technique which has already proved effective in assessing perceptions about use of computer base self-service facilities. The respondents were asked to list the most satisfying and dissatisfying experiences during the last six months of the program. The responses were clustered and factored to find the priority list of critical processes for action.

From the learners perceptions, following experiences were recognized as the top of mind satisfiers:

1. Quicker online registration and assignment assessment completion without a breakdown of the network possibly in allotted minutes (67%).

2. An immediate response through e-mail or telephone within 1-2 hours by the responsible service provider to provide process tracking facility for learners (62%).

3. Modular, comprehensive and updated course material to be received by the learners in the scheduled time and should be properly backed by web support without frequent failure of web support (62%).

4. There should be multiple channels of communication (56%).

The top dissatisfiers were as follows:

1. The connectivity fails during registration process or assessment test submission (77%).

2. The partner institution doesn't care to attend their grievances (69%).

3. The IGNOU coordinator is not available at critical times on phone or is not responding e-mails same day (66%).

4. The resource person on teleconferencing is not fully prepared on the topic (62%).

From the above results, following conclusions can be drawn about the processes considered to be the most critical for the value delivery by the learner segment catered by open universities like IGNOU:

1. Quicker Response.

2. Friendly software application and performance.

3. Modular design of courses within the program and comprehensive instructional material delivered in time.

4. Multi-channel delivery approach and flexible pedagogical structure.

6.0 Suggested Framework:

In the light of the issues discussed, it seems likely that the partnership trend among the different players which includes education service providers, software solution provider and connectivity service providers is going to increase in the future. Each provider will focus on its competence area. The collaboration criteria and the enrichment of Learner centric Value Chain (LCVC) need to be centered on the requirements of the learners. The frame work has been presented in figure 3. Although the learner is interacting only with the service provider, the feedback need to go to all the players involved and all the players need to model their activities keeping the end customer, i.e. the learner at the center. Experiences learned so far suggest that the learner requirement vary and therefore, the value proposition has to be mapped accordingly. The efforts should focus at finding a collaborative model, centered on the right segment of learners, which will be decided based on the offering and competencies. The academic institutions should focus more on content and expert interaction, the software solution providers should focus on learner centric web ready content and other requisite interfaces and the connectivity providers should provide satisfactory links across the users.

7.0 Conclusion:

Given the massive potential and stiff competition in the e-learning space in India, the players need to work on a proper model in order to maximally exploit the opportunities and create win-win solutions for all the players involved. Whatever be the e-learning model, the service provider needs to pay utmost attention to learner needs of flexibility and tolerance by way of providing modular based programs through multiple channels of communication and with high performance, friendly application support. The core idea should be to create a learner centric value chain which can eliminate any scope of dissatisfaction and enhance satisfaction of the remote learner.

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Note: The full paper is available from the CD of conference proceedings.

Table 1: Growth of Distance Education in India

Year	Universities	Students (millions)	% of DE in total HE system (Total enrolment in HE) in millions
1975-76	18	0.06	2.3 (2.49)
1981-82	22	0.19	5.7 (3.34)
1990-91	40	0.56	10.1 (5.55)
1999-2000	74	1.58	17.0 (9.31)
2000-2001	74	2.00	20.0 (10 approx)

Source : Swamy Kulandai (2002)

Figure 1: The Structure of E-learning Sector in India

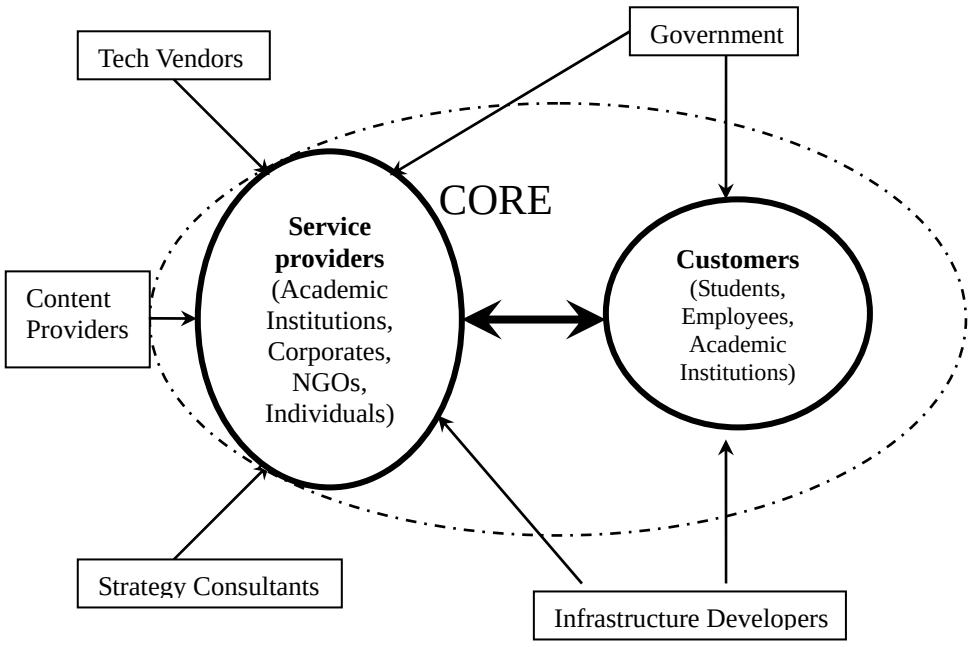

Figure 2: Dimensions of E-Learning Models

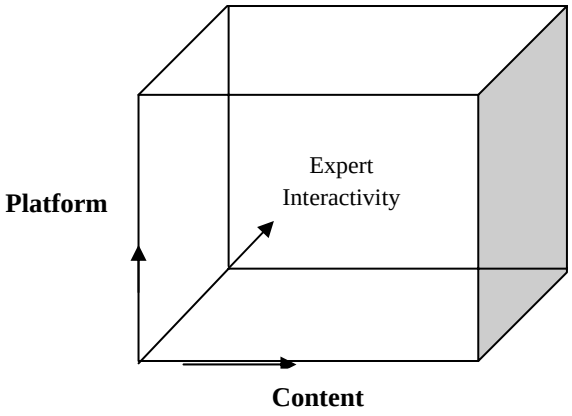

Figure 3: Learner Centric Value Chain (LCVC)