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Towards an Effective Strategy for Implementation of Technology Enhanced Learning in Higher Education in Pakistan

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Abstract. There has been a substantial increase in e-learning related research in higher education institutes (HEIs), however, in Pakistani HEIs, the implementation of technology enhanced learning has never really taken off and has remained in the back seat due to lack of a suitable strategy that could drive the tactics and operations to achieve success and competitive advantage. This paper attempts to take a conceptual overview of the problem by diagnosing the elements of current strategic capability of Pakistani HEIs, and then finding a right direction for strategy development that could enhance the capability to deliver high quality technology enhanced learning experience to stakeholders involved in the process. The current value chain in higher education is examined and elements of recommended strategy for successful implementation of technology enhanced learning in higher education are identified and the benefits envisioned are discussed.

Keywords: E-Learning, Technology Enhanced Learning, E-Learning Strategy

1. Introduction

In the past, there has been less focus on e-learning strategy and more on e-learning implementation without a realization that unless there was a successful strategy to launch and sustain e-learning initiatives, the exercise would never yield required results in universities. Higher education institutions in Pakistan never had e-learning implementation as part of their strategy. While massive growth in information and communication technologies has provided a strong basis for initiating e-learning programs, this critical success factor alone cannot bring about desired results unless it is planned strategically and then implemented for gaining optimum results. Even in places that launched e-learning programs had done them without a long term realization of the specific needs that they were meeting or the specific benefits being envisaged out of them. Without a solid strategic support, the efforts out result in unsustainable outcomes and missed opportunities. In short, the strategy tells where to get and tactics linked to the strategy tell how to get there. This paper focuses on identifying elements of effective strategy for successful implementation of e-learning in HEIs in Pakistan.

2. Analysis of Current Strategic Capability

This part focuses on analysis of the current strategic capability of the HEIs with regard to successful e-learning implementation. The strategic capability comprises of resources and competencies needed by an organization in order to meet its long term goals successfully [1]. The resources may be both tangible like faculty and infrastructure etc. and intangible like knowledge and processes. A careful analysis of current strategic capability requires critical evaluation of resources and competencies of the HEIs in order to ascertain weaknesses that result in lack of sustained outcomes regarding e-learning implementation.

2.1. Strategic Resources

The four broad categories of resources are briefly discussed below:

- Physical resources: As far as physical resources are concerned, there is no severe deficiency in the HEIs in Pakistan since the buildings and ICT infrastructure are suitable to support e-learning initiatives.
- Financial Resources: While the primary suppliers of money are the students who pay tuition fees, there is additional funding available through the government through the Higher Education Commission

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(HEC) to the public sector universities. The HEC also helped establish video conference facility at all public sector universities.

- Human Resources: Adequately trained faculty is available at the HEIs. However since e-learning is not implemented fully, the faculty adoption of e-learning is low since they use technology mostly to communicate with the class and not for full-fledged course delivery.
- Intellectual Capital: In knowledge driven enterprises like the HEIs, this intangible resource has a lot of value and turns out to be a major asset since it marks the difference between state of the art and mediocre institutions. The HEC has taken substantial steps to enhance intellectual capital at the universities by investing in faculty development programs.

2.2. Strategic Competence

This can be viewed in two contexts; of individual competence like skills, knowledge and experiences; and organizational competence like processes, management systems, culture and accumulation of skills and experiences of employees resulting into assets that remain a part of the organization even if they leave it. Core competencies will form a part of these sets that cannot be imitated by the competitors. For example, few HEIs have the unique resources and ways to provide e-learning experiences to stakeholders that others cannot provide. To summarize, the strategic capability is dependent upon the organizational resources and competencies. Beyond a threshold level, that is barely enough for survival, there is a need to gain competitive advantage and that is not possible unless those strategic capabilities are developed which the competitors cannot imitate easily.

3. The Higher Education Value Chain

Organizations undertake many activities that provide a service to the end customer and these activities are the value chain of the organization [2][3]. In the case of HEIs, these activities focus mainly on the primary functions of teaching, research and service to the community. The higher education value chain is proposed in Figure 1 below.

<table>
<tr><td>Secondary Support Services</td><td colspan="4">• Human Resource
• Administrative Infrastructure
• Technical Infrastructure
• Funds for primary and support activities</td><td rowspan="3">MARGIN</td></tr>
<tr><td>Primary Support Services</td><td colspan="4">• Technology (ICT and internet)
• Research, Training and faculty development
• Libraries and laboratories
• Academic Administration and Policies
• Procurement of support material</td></tr>
<tr><td>Inputs
• Students
• Faculty
• Finances</td><td>Operations
• Curriculum design
• Technology enhanced learning
• Skill development
• Research skill development</td><td>Outputs
• Skilled students, faculty and researchers
• Programs for student centered learning</td><td>Marketing and Placement
• Institutional brand development
• Lookout for new markets</td><td>Services
• Alumni Relationships
• Industry collaboration
• Linkages with other clients
• Continuing education</td></tr>
</table>

Fig. 1: The Higher Education Value Chain

The earlier research on value chains was limited in its application to education sector and proposed value chains specific to the service sector since there are limitations of intangible elements in the value chain related to services in general and education sector in particular [4]. However, efforts to remove these limitations began to be visible in research on strategy for higher education in particular when value chains of HEIs were examined in particular [5][6]. Just as Porter [3] suggested segregating activities of an organization

into components for value chain analysis, Pathak [7] proposed breaking down academic processes into discrete components that have defined measures. They suggest a reconfigured value chain that encompasses enhanced teaching and learning trend that uses technology as a key enabler. That favors e-learning since it makes delivering learning experiences self-governing and without the physical presence of learners thereby increasing efficiency and reducing costs.

3.1. Value Chain Challenges in Pakistan

The way value chain activities are conducted ultimately translates into making building blocks to create products or services that bring competitive advantage to the institution, however, HEIs in Pakistan do not give weightage to this value chain with regard to e-learning strategy formulation. Most of the elements or components of this value chain are supported by the traditional classroom method of learning. The primary reason is a lack of e-learning strategy altogether thereby denying the HEIs the potential that they have lost in terms of the reach to the masses, control, sustainability and an impact that had far greater impact than traditional learning. In a developing country like Pakistan where poverty in the general population, gender disparity, age disproportion, accessibility options to far and backward areas and lack of appropriately qualified staff are major challenges, the perceptions of modern classroom education and its challenges can be met successfully by incorporating e-learning since it is the perfect way to meet the fast growing demand for education in the developing world [8]. While technology is considered a key enabler of e-learning, it can also become a barrier in terms of its capabilities, and the fact that even if all hardware resources and infrastructure is available, lack of cultural readiness to accept e-learning organization wide will have a negative impact and will not allow a chosen strategy to be implemented successfully [9].

3.2. Technology Enhanced Learning Challenges

In the contemporary learning environment, advancement in technology has brought in major challenges to disciplined learning and at the same time has given more control to the learner. Technologies such as mobile learning platforms, complex gaming scenarios, interactive videos and electronic blackboards have become critical to the list of learning technologies. Moreover, in order to enhance learning and to maximize the potential, it is important to comprehend the functioning of the human cognitive system as well [10]. The main reason for this aspect is that it is the human cognitive system that performs the primary functions of information acquisition, storage and retrieval. Dror [10] also identifies three C's of learning called control, challenge and commitment which cannot be easily achieved however, assisted with technology, they can make learning worthwhile. With the current popularity of social networks, strategies for creating and supporting social constructivist learning for students is becoming a challenge with the newer mobile technologies [11]. Likewise, information technology proficiency for students was recommended for ensuring positive student learning outcomes [12].

4. Identifying Elements of Required Strategy

With the previous discussion in perspective, the elements of required strategy to implement e-learning in local HEIs can be identified. Since the idea is to develop long term goals and objectives of an e-learning system, strategic leadership is required to undertake the required course of action and allocate necessary resources to carry out these goals. That clearly identifies two courses of action. First is related to the future direction of the HEI and the other is related to linking strategy with the role of planning for success. Merely allocating resources like IT support, training, technology, and infrastructure have no operational relevance unless they become a part of organizational strategy. These factors has little influence on lecturers since decisions to adopt or reject e-learning by the lecturers were not influenced by decisions from the top management but by success of local management [13]. The question of determining responsibility of success of e-learning in HEIs cannot be easily answered since there are many stakeholders involved and they have a shared responsibility. These stakeholders include students, teachers, institution, content providers, technology providers and the employers. Unless these stakeholders do not work in harmony to create effective and meaningful experience for e-learning, success cannot be achieved [14]. Considering students as major stakeholders, no differences were observed in terms of their perception of usefulness of e-learning strategies and they all had a positive view for need of technology use for learning [15]. This asserts the need

for information and communication technologies to be an integral part of organizational strategies for e-learning. As a starting step, SWAT (strengths, weaknesses, opportunities and threats) analysis can be undertaken prior to launching e-learning initiatives for thorough identification of internal and external factors that will later become a driving force for the implementation of proposed strategy [16][17]. Any successful e-learning strategy will require a receptive culture towards information and communication technologies, support from management and active participation of all stakeholders [18]. These are being proposed as components in the e-learning strategy. Moreover, learning and e-learning strategies are not being considered separately by organizations now, rather the technology based solutions are an integral part of organizational learning strategies [19]. The Learning Management System (LMS) is thus proposed as a key component of the support facilities in the proposed strategy for integrated content delivery and management of learning.

A layered system is proposed in Table 1 that includes components to enable technology enhanced learning in higher educational institutes.

Table 1: Components of Proposed Strategy

Proposed Key Policy Layers	Proposed Support Facilities
• Reconfiguration of IT leadership and formation of active bodies for enhanced participation of faculty, students and administration by increased coordination and communication between these stakeholders. • Web based student services, student portal and IT service provision infrastructure that runs campus-wide operations reliably. • Educational technology, ICT support, complete IT literacy for students and upgrading technology enhanced learning facilities in campuses.	• Instructional facilities for advanced technology utilization in learning • Digital converted academic content and courses • Learning management system (LMS) • Educational technology support, with desktop support, educational material production support and curriculum & instructional design support • Labs with powerful computing facilities for research

Thus, five elements of a successful strategy can be defined and success will depend upon effective interconnectedness of these elements. These are the tools for e-learning, training of resources, processes that provide a backing to e-learning, support infrastructure and the people who will put strategy into real practice.

5. Conclusions

Based upon the discussion and the current market view, it appears to be moderately attractive to the new entrants aspiring to provide unique and different experiences of technology enhanced learning and to those who are already in it with a strong presence. There are no big competitors in place, and the existing players can gain excellent competitive advantage by taking advantage of a differentiable product for existing and new customers (the learners). The competitive forces are weak in general, and it is long before the market gets competitive and competition is intensified. Till that time, those investing in the strategy and actions will be ready to gain substantial competitive advantage by being early entrants with more experience in the field.

Organizations who want to employ a successful technology enhanced learning strategy must guarantee they are fully equipped both culturally and technologically. If they do not put the required foundations in place which is implanting a corporate philosophy promoting e-learning across all levels of an organization, and evolving a vigorous technical infrastructure, the advantage envisioned by e-learning practices will be lost. The following benefits are also envisioned:

- Noticeably enhanced student learning experience.
- Fresh sources of revenue from e-learning based courses.
- Enhanced support for students in far off places using e-courses and learning materials.
- Enhanced support for students having issues with language, age discrimination and disabilities
- Quantifiable return on investment (ROI) in ICT and related infrastructure.
- Growth in skills set of teaching staff and research potential of the HEIs.

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