Value Chain Formation for e-Learning Outsourcing Services

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Abstract: A task is core when its outcome directly affects the competitive advantage of the company in its targeted markets. In any given category of business, one company’s core may well be another company’s context. Outsourcing the context and enhancing the core becomes one of the top business strategies in e-business as well as in e-learning market. Based on this core-versus-context strategy, this report outlines a value chain formation of the outsourcing service for e-Learning market, which includes content provider, content delivery system, content management system, Internet service provider, hardware vendor, and value-added reseller. This report also emphasizes the importance of the content delivery system, for example, the virtual classroom system or the integrated collaboration system, as the catalyzer for the formation of this value chain.

Keywords: e-Learning, chasm crossing, virtual classroom, integrated collaboration, web conferencing

1 Introduction

Most people believe that Internet is about to bring a paradigm shift to the marketplace of education. A paradigm shift, according to Christensen [1], is a consequence due to oversupply of sustaining technology and emergence of disruptive technology (Figure 1). Sustaining technologies improve the performance of established products (or services) along the expectation of mainstream consumer. Occasionally, however, disruptive technologies emerge: innovations that demand significant changes not only the consumer but also the infrastructure – this is why they are called discontinuous or disruptive. Disruptive technologies, though under-perform the established products, are generally cheaper, simpler, and more convenient to use. Also noted by Christensen, disruptive technologies typically are first commercialized in emerging markets (or niche markets). When adoption of disruptive technologies begins in mainstream market, a paradigm shift is triggered.

Onset of a paradigm shift can be best explained in the Technology Adoption Life Cycle (Moore [2]), a model about how communities respond to discontinuous innovations (see Figure 2). According to this model, the success of a technology paradigm shift lies in making the transition from an early market dominated by a few visionary customers to a mainstream market dominated by a large block of customers who are predominantly pragmatists in orientation. The gap between these two markets is called a chasm, and crossing this chasm must be the primary focus of any long-term high-tech marketing plan. A successful crossing is how high-tech fortunes are made; failure in the attempt is how they are lost.

According to Moore [2], chasm crossing requires three major strategic operations: niche market focus, whole product development, and value chain formation. A successful chasm-crossing strategy is to focus at one niche market segment at a time, finding the compelling reason behind the target consumer’s buying decision and aligning all possible resources to satisfy the target consumer’s
need by a total solution, namely, a whole product. A commitment to the whole product leads to an extended list of products and services. Not all of these fall inside the core competence of the chasm-crossing company. Thus whole product development sends a new company in quest of partners and allies, under a basic commitment to co-develop a whole product and market it jointly – that is, the formation of value chain.

Value chain consists of voluntary alliance of product and service providers coming together to provide a complete offering to a given set of customers. In a virtualized economy, according to Moore [2], the basis of economic competition shifts from company versus company to value chain versus value chain. More third parties augmenting one value chain make the chain’s offerings more varied, more completed, and more cost-effective than its competitors.

It is the purpose of this report to identify the disruptive technologies in e-Learning market, find out the target niche market for whole product development, and eventually discuss the formation of value chain for e-Learning outsourcing services.

2 Disruptive E-Learning Technology

What are the disruptive technologies for today’s education? First of all, these technologies must be Internet-based since we already accept the axiom of Internet as the driving force for the paradigm shift for e-Learning marketplace. Secondly, the disruptive technologies must have met the expectation of an emerging customer base – that is, the performance demand at the low end of the market according to Christensen [1] or the early market adopters according to Moore [2]. If we look at today’s education marketplace, consisting of elementary schools, middle schools, high schools, higher education, and in-house professional training, as depicted in Figure 3, the emerging customer base increases toward higher education, since today’s mainstream marketplace in elementary schools, middle schools and high schools is strongly supported by parents at works. It is clear that the early market adopters should be the distanced learners for higher education – the niche market, such as executive MBA, corporate training, or high-tech training certificate programs.

From this observation, the e-Learning disruptive technologies should be found in the category of Internet-based content delivery system that includes asynchronous system – such as web pages, email, bulletin boards, file sharing, and streaming media, and synchronous system – such as instant messenger, audio conferencing, web conferencing, data conferencing, and video conferencing. The asynchronous market segment has been maturing for a while and provides a sustaining technology base to support the mainstream consumers. It is quite common to find many of these complementary systems bundled together as part of a product suite.

The synchronous marketplace for real-time conferencing tools has been very active most recently. Real-time collaboration tools provide us with the ability to conduct virtual meetings and share information in real time. However, audio conferencing and video conferencing require sufficient network bandwidth and quality of service to be effective on any scale, though users can effectively use audio on low bandwidth connections such as dial-up. Multipoint conference servers are required to enable multiple users to participate in an audio/video conference. According to the reports by Deus [3] and Davis [4], the advance in convergence technology has brought the next wave of conferencing tool called the Integrated Collaboration, which combining both asynchronous and synchronous tools into one single solution (Figure 4). Integrated Collaboration is a process that allows two or more users to interact with text chat, audio, video, joint web browsing, file sharing, and slide presentation in real-time and non-real time playback modes across Internet – for readers
interested in this technology, the author’s web office is a must visit.

Integrated Collaboration is in its early market stage, as networking, computer, and multimedia technology are evolving, and as vendors and service providers explore new directions to provide new value propositions for customers. But already, Integrated Collaboration solutions are providing new ways to conduct old business as well as opening the doors to entirely new ways of communicating and learning. Let’s look at one example: HomeMeeting’s end-user software, JoinNet.

JoinNet client provides the rich set of interaction functionalities. Meeting participants can communicate with audio, video, and text chat. More importantly, participants can graphically interact on the Interactive Board for a variety of input: PowerPoint documents, Office documents, PDF documents, JPEG and GIF graphic files, web pages from Internet, and real-time camera snapshot, window-capture images, and copy-and-paste data. Here is a screen shot of a JoinNet client:

Figure 5

Where
1. Meeting Room. Window for conversing with others using audio, video and text chat. Also contains additional options for camera usage, settings, and other tools.
2. Control Panel. Commands for meeting room discussions, i.e. token passing, question asking, question allowing, conduction of polls, etc. Also provides a table of participants and their information.
3. Interactive Board. Share and discuss uploaded slides/figures/documents or browse the same web page. Token Holder or Question Asker can also use copy-and-paste or window-capture feature to upload his/her data to the Interactive Board. Interactive Board can be switched between two modes from its file menu: slide-sharing mode or joint-web-browsing mode. In slide-sharing mode, information is converted to image format, either JPEG or GIF, when it is uploaded to the Interactive Board, which can be saved by all participants in the same meeting.

The token is an integral part of JoinNet. It is the core of the mechanism that serves to maintain order in the Meeting Room and Interactive Board. At the beginning of each meeting, the Coordinator is also the Token Holder. At any point during the meeting, the Coordinator can retrieve the Token from the Token Holder. Based on the Token passing scheme, all participants can serve as the Token holder and control the meeting flow as well as handle all the question requests from the other participants. Meeting with JoinNet software, you can see and hear your colleagues while you make presentation, send instant messages, work on a shared interactive board and shared whiteboard, and browse the same Web as though everyone were in the same room.

There are generally three components in the structure of the HomeMeeting multimedia communications system: the web application, the MCU meeting server, and the JoinNet client, which represents a basic software architecture for the Integrated Collaboration.

- **MCU Meeting Server**: This is the meeting room. All clients (meeting participants) are connected to the MCU during the meeting.
- **Web Application**: The web server, Microsoft IIS or Apache Tomcat, runs the web application to direct clients to the appropriate meeting room. Some web application may require the client to sign on before accessing meeting information.
- **JoinNet Client**: This is the HomeMeeting client software installed on the client’s computer. This program is launched to communicate with the MCU Meeting Server

### 3 Whole Product Development

From the previous discussion, Integrated Collaboration, a convergence solution for various
Internet-based content delivery systems, is qualified as a disruptive e-Learning technology. Also noted in the previous section, the emerging e-Learning niche market is best described as a group of distanced learners in higher education market segment such as executive MBA, corporate training, and high-tech certificate programs. Based on these understandings, the whole product development for e-Learning market should consist of following constituents:

- **Content Digitization and Archiving** – PC-based document and web-based content such as web pages, animated slides, and streaming media.

- **Integrated Collaboration System** – a client-server software architecture, instead of peer-to-peer, to facilitate symmetric multipoint multimedia meetings or virtual classrooms. Instructors can real-time upload PC-based document to their virtual classrooms or navigate the web content via joint web browsing feature provided by the Integrated Collaboration. Online sessions can be recorded for future playback.

- **E-Learning Portal** – archive PC-based content, web-based content, and virtual-classroom recordings; content management, student registration and administration; content localization and alumni communications; homework and project assignments, and communications tools like bulletin boards, chat rooms, email, personal address books, group calendar, and logging of activities as well as password protection.

- **Internet Network Services** – server co-location, network management, end-user Internet access, and networking hardware. For a better network quality, the meeting server and web application of the Integrated Collaboration system will be hosted at a local ISP, as well as the web server of the Content Management portal. See Figure 6.

- **Local Marketing and Support** – advertisement, invoice and payment, customer service, end-user technical support, student orientation, Internet hub, computer lab, learning software, group meeting rooms, student activity organization and the like.

### 4 Value Chain Formation

The objective of this report is to outline a business strategy for crossing the chasm of e-Learning market. The key points discussed so far are as follows:

- **Niche customer base** – distanced learners in higher education market segment such as executive MBA, corporate training, high-tech certificate programs, and the like.

Generally speaking, the distanced learners are smart consumers with well-funded budget, and they are looking for obtaining certificates from top-ranking academic institutions or professional training centers – for example, the international eMBA programs offered by those prestigious universities in USA. From the operational point of view, it is unlikely for any content provider to build a worldwide e-Learning delivery system for remote learners from different regions or different countries. In fact, the best possible business model is for the original content provider to work with local academic institutes to offer online degrees to local customers – that is, local academic institutes play the role of customer-facing value-added resellers and services integrators. The content delivery network and e-Learning portal have to be built and tested by the local academic institute before any e-Learning marketing. The construction of an e-Learning portal is a continuous effort of the local academic institute, which is closely related to its own content digitization, localization, and management. On the other hand, however, building a content delivery network is not the expertise of any local academic institute – any poor performance reported by one of its distanced learner is not something over which the local academic institute has hands-on technical control. In fact, content delivery network is the core business of ISP.
(Internet Service Provider) and Integrated Collaboration ASP (Application Service Provider), both jointly provide the e-Learning outsourcing service, or e-Learning utility-on-demand, to the local academic institutions. The Integrated Collaboration ASP is a licensee (or agent) of Integrated Collaboration software vendor.

In short, the value-chain for e-Learning market should be at least composed of original content provider, local academic institute(s), Integrated Collaboration ASP, local Internet service providers (ISPs), and finally, Integrated Collaboration software vendor, as shown by Figure 7.

The subsets of this value chain formation are: (1) value chain formation among Integrated Collaboration ASP, ISP(s), and Integrated Collaboration software vendor, (2) value chain formation between local academic institute and original content provider, and (3) value chain formation between local academic institute and Integrated Collaboration ASP. Also depicted in Figure is the revenue flow from distanced learners to all value-chain alliances.

5 Conclusion

A paradigm shift emerging in education marketplace is driven by a disruptive technology called Integrated Collaboration, which is a convergence technology from synchronous tools, such as text chat, data conferencing, web conferencing, audio conferencing, and video conferencing, and asynchronous tools, such as email, bulletin boards, web pages, and streaming media. Triggered by this disruptive technology, a whole product development is pushing a formation of e-Learning value-chain alliances to cross the chasm in Technology Adoption Life Cycle. The formation of e-Learning value chain starts with a core-versus-context strategy among alliances which include original content provider, local academic institute(s), Integrated Collaboration ASP, local ISP(s), and Integrated Collaboration software vendor. The competitive advantage of this value-chain strategy is the least capital expenditure for all value-chain alliances and it further leverages the core competitiveness of each value-chain alliance to provide a best e-Learning program to target niche market at a minimum cost. The target niche market is composed of distanced learners for higher education.

According to this strategy, the Integrated Collaboration software vendor first establishes its partnership with a local application service provider (ASP) via software licensing or agency. This ASP – the Integrated Collaboration ASP – thus work out a profit-sharing model with one or more local ISPs to build an Integrated Collaboration outsourcing service for all local academic institutes who interested in providing e-Learning programs to distanced learners. Or the local academic institutes can establish partnership with one or more original content providers to become value-added resellers for the original content providers to promote their e-Learning programs to local distanced learners.

The proliferation of this Integrated Collaboration ASP outsourcing network, driven by the partnership program of the Integrated Collaboration software vendor in different region or country, will emerged as a worldwide homogeneous e-Learning content delivery system, available to all academic institutes or individuals. This is a virtual marketplace for all kinds of knowledge and information. This is a paradigm shift.

References: