

## CHAPTER 3

# VALUE CHAIN ANALYSIS: A STRATEGIC APPROACH TO ONLINE LEARNING

Fathi Elloumi  
Athabasca University

Only by integrating the Internet into overall strategy will this powerful new technology become an equally powerful force for competitive advantage. (Porter, 2001, p. 78)

### Introduction

---

Distance education uses mediated information and instruction, encompassing all available technologies and a variety of other forms of instruction at a distance, to deliver knowledge and skills to the learner. Online education is an extension of the traditional form of distance education. Typically it involves

the use of the Internet to access learning materials; to interact with the content, instructor, and other learners; and to obtain support during the learning process, in order to acquire knowledge, to construct personal meaning, and to grow from the learning experience. (Ally, 2004, p. 5)

Online education includes mechanisms to facilitate the development of and access to a variety of learning services; an underpinning technological platform; means to help potential learners select and enrol in learning experiences; and supporting administrative processes. Strategic planning questions about the use of information and communication technologies (ICTs) in education must work in a context of constant and accelerating change that demands flexibility in the design of the online learning institution's structure and course and program offerings. The use of technology must be embedded within a wider strategy for teaching,



learning, and service that is responsive to the challenges of technological change (Bates, 1999).

Many adult education and training providers are running to get on the online learning bandwagon. Several global groups of institutions are collaborating to promote distance education, including British International Studies Association, Central and East European International Studies Association, European Association of International Education, U.S. International Studies Association, U.S. Information Agency, IDP Education Australia, European Universities Continuing Education Network, and Global Wireless Education Consortium (Alley, 2001; Woudstra & Adria, 2003). They are busy transforming existing courses and creating new ones for online delivery. The participation of single institutions and groups of institutions has resulted in increased opportunities for online learning all over the world. Institutions are trying new delivery and support strategies, and looking at competency-based credentialing systems and performance-based learning.

On the other hand, several institutions have recently pulled out of online distance education. NYU Online, a three-year-old venture of New York University, folded as a result of economic conditions (Carnevale, 2000), a plight shared by UMUC (University of Maryland University College) Online, and Temple University's Virtual Temple (Carlson & Carnevale, 2001). The economic conditions referred to have to do with heavy competition from other more successful institutions, such as the University of Phoenix (<http://www.phoenix.edu>), and enrollments that were significantly lower than predicted.

There are many reasons why online distance education institutions have failed, including high cost of technology, poor decisions, competition, and the absence of appropriate (or any) business strategies, especially market assessment of consumer demand. Many of these institutions rushed to offer any conceivable course, and attempted to replicate the classroom experience online (Kilmurray, 2003); most failed to deliver real value that could earn a sustainable and profitable return from learners. By failing to follow appropriate business strategies, many online learning institutions reduced the likelihood that they could gain any competitive advantage. They failed to capitalize on the Internet's capacity to support convenience, service, high quality learning, customization, richness, and other features of value to learners.

Various authors have argued for the special role of the University, and for the need for it to operate outside of the economic forces that define activity in the commercial sector (see, e.g., Gilbert, 2001; Pister, 1999; Scott, 1998). There may be strong arguments for public support for the University to allow it, to a limited degree, to sit outside of the competitive marketplace. However, in the neoliberal climate of the day, the emergence of for-profit university corporations and the need to ensure value in order to gain and retain public support, compels university administrators and faculty to examine the means by which value is created and retained by their institution. Thus, this chapter focuses on the online university (public, private, or for-profit), and attempts to enhance our understanding of the ways in which market forces can be understood and manipulated so as to enhance the efficiency and effectiveness—and thus the viability—of a university in a networked economy. This chapter emphasizes the role of strategy for online learning institution, and uses the value chain framework for discussing the particular management challenges, skills, and practices associated with online learning.

The first section defines the theoretical framework for value chain analysis, and highlights its strategic power. The second section presents the online distance teaching value system and market map. The third section discusses the methodology for constructing and using a value chain in an online learning institution. The final section discusses the application of the value chain framework to understanding developments at a particular distance and online learning institution—Athabasca University. It also considers limitations to and problems posed by value chain analysis.

---

## Gaining a Competitive Advantage

---

The value chain framework is an approach for breaking down the sequence (chain) of business functions into the strategically relevant activities through which utility is added to products and services. Value chain analysis is undertaken in order to understand the behavior of costs and the sources of differentiation (Shank & Govindarajan, 1993). In education, *differentiation* is achieved by creating a perception among targeted learners that the course, the

program, or the university's offerings as a whole are unique in some important way, usually by being of higher quality. The appeal of differentiation is strong for higher education institutions, for which image and the perception of quality are important. This perception allows the institution to charge higher tuition fees, and so to outperform the competition in revenues without reducing costs significantly.

Porter (1980) argued that a business can develop a sustainable competitive advantage based on cost, differentiation, or both, as shown in Figure 3-1.

**Figure 3-1.**  
Developing competitive advantage.

		Relative cost position	
		INFERIOR	SUPERIOR
Relative differentiation position	SUPERIOR	Differentiation advantage	Differentiation and cost advantage
	INFERIOR	Stuck-in-the-middle	Low cost advantage

Source: Shank and Govindarajan (1993, p. 49).

To survive in today's highly competitive business environment, any organization must achieve, at least temporarily, a competitive advantage. A low cost/price strategy focuses on providing goods or services at a lower cost than the competition, or superior goods or services at an equal cost. In education, it might be accomplished by limiting programs and courses offerings, by reducing the complexity of the course design and production process, or by limiting service or learner support. This strategy requires as well a tight cost-control system, benefiting from economies of scale in production, and experience curve effects.

For example, at the University of Phoenix online (UOP), managers determined that faculty, facilities, and support staff accounted for a large portion of their costs. They targeted these three components to make a dramatic reduction in their cost structure. Almost all faculty members at UOP teach part time and hold other full-time jobs. According to Jackson (2000, p. 34), faculty are paid U.S. \$900-U.S. \$1200 to teach a course, and are expected to focus almost exclusively on teaching rather than on other responsibilities that are common in most universities (student advising, course creation, university management, research, and community service). UOP estimates that faculty must spend 100 hours on their first course, less as they become more proficient (referring to the learning curve benefits). Faculty at the University of Phoenix are not provided with offices, thus reducing the investment in buildings and the cost of operating them. UOP seems to realize costs savings by marginalizing academics and reducing their pay and advantages. On the other hand, there are few support services for students, and the library is accessible only via the World Wide Web, thus reducing dramatically the cost of housing books and paying for professional support staff. UOP is an accredited university (since 1978, by the North Central Association of Colleges and Schools). Courses and instructors are constantly measured for both learning and student (customer) satisfaction. Perhaps most critically, UOP has eliminated the role of research—except as it affects online education—from the traditional role of the University. UOP receives no government subsidies, has consistently returned profits to its shareholder owners, and charges competitive tuition rates. UOP uses a business approach rather than an academic approach to education, and is one of the few profitable for-profit universities in the U.S. (Jackson, 2000).

The second strategy for gaining competitive advantage is differentiation. The primary focus of this strategy is to create a unique position in the market through provision of goods or services that are valued for their uniqueness or fit to the needs of a particular group of buyers. A differentiating strategy also requires ongoing cost control efforts within a strategic management emphasis geared towards differentiating offerings. For example, the course package by itself could not provide competitive differentiated advantage, as it is fairly easy for other institutions to

duplicate it, either by buying it directly from the producing institution, or by creating a very similar package. However, when the services of highly competent academics and tutors, registry staff, student advisors, and counselors are added, a strong and unique bond can be created between the university and its learners. This unique bond becomes a differentiating competitive advantage when the institution subscribes to a vision of quality, support, service, and excellence (Woudstra & Powell, 1989).

A vision of excellence for online learning institutions is not a choice, but a market driven imperative. The institution cannot rely upon the recruitment of learners within a geographic catchment area, as can many campus-based institutions. In order to gain global competitive advantage and respect, the online learning institution must prove that it is an “excellent fit for purpose,” not only for its suitability to its target market, but also for its strategic and operational processes. Capella University Online is pursuing a differentiation competitive advantage. Capella is “trying to provide adult learners with programs that are going to have an immediate impact in their work, that are going to provide sustained value to them as professionals, that are based on what we call an intimate learning experience” (Lorenzo, 2003, p. 2). To differentiate itself from other online learning institutions, Capella uses the tag line “Education. Reborn<sup>SM</sup>” everywhere in its internal and external public relation documents and Web sites.

Capella emphasizes competency-based learning, and targets adult working learners seeking to have learning relevant to their jobs. Capella has shaped its programs and courses to suit the very particular needs of its learners. For example, Capella revamped its MBA Program, introducing a unique component called the “professional effectiveness” core that was developed as a result of a market study conducted in 2001 of 37 U.S. companies. The professional effectiveness core addresses perceived corporate management needs with courses that focus on such issues as building relationships, leading and facilitating change, leading teams, and negotiating for results (Lorenzo, 2003, p. 6).

Capella re-enforced these offerings with a patented “Professional Effectiveness Coaching<sup>SM</sup>” process, encompassing two forms of coaching. One is an in-course process, where learners do peer coaching with each other; the other is one-on-one coaching, where each learner has the option of choosing a certified coach, hired by

Capella, to provide guidance in improving the learner’s “management effectiveness and apply new behaviors on the job” (Lorenzo, 2003, p.6).

A third competitive strategy not depicted by Porter’s framework is called *focus*: a strategy for targeting a very specific segment of the market as defined, for example, by type of learner (e.g., Aboriginal students), specific type of program offered, or specific characteristics of a geographic area. This strategy is used to choose market niches where competition is the weakest, or where the online learning institution has a competitive advantage because of technology or other forms of differentiation. The focused institution succeeds by avoiding direct competition. It may also have strong differentiation advantage, a low cost advantage, or both, for its market segment. For example, professional organizations, such as the Certified General Accountants Association ([www.cga-canada.org](http://www.cga-canada.org)), the Society of Management Accountants of Canada ([www.cma-canada.org](http://www.cma-canada.org)), and Chartered Accountants School of Business (<http://www.calearn.ca>) fall into this category of focused competitive advantage.

---

## Value Chain Analysis

---

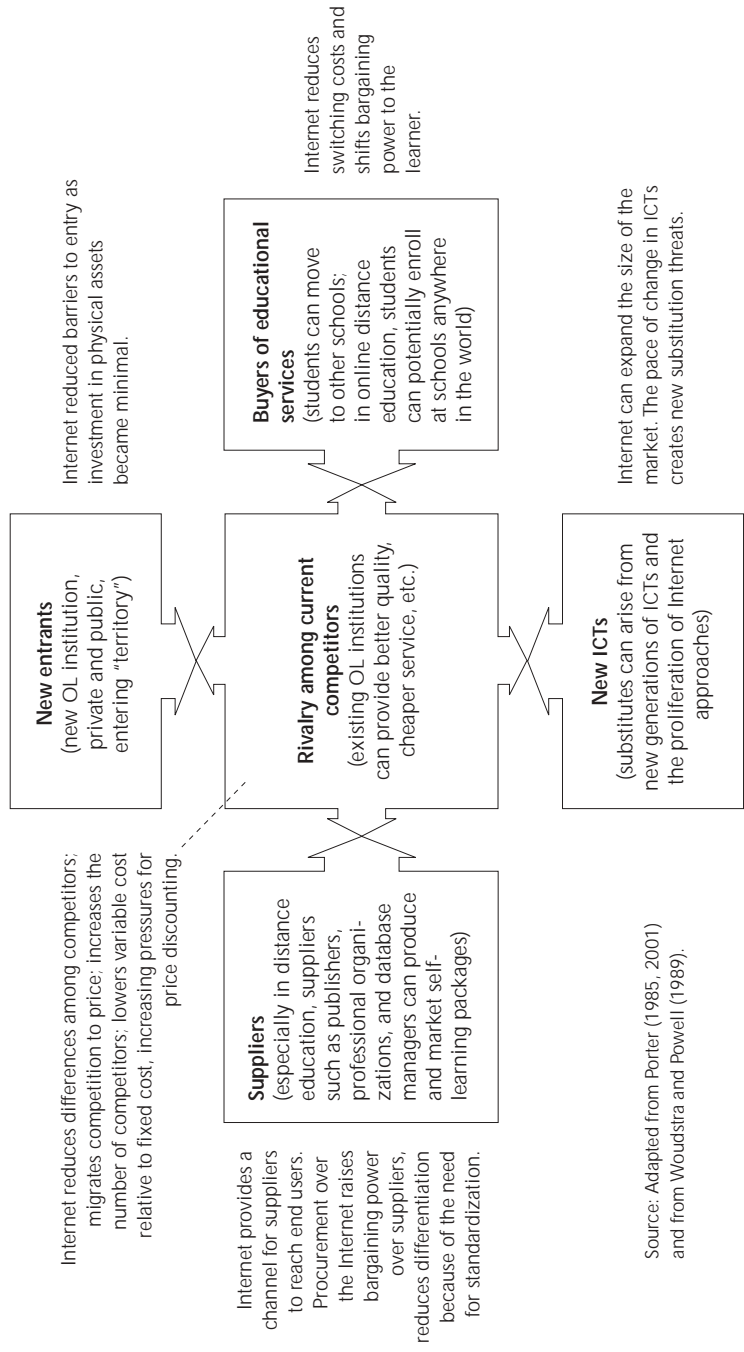
Value chain analysis can help an institution determine which type of competitive advantage to pursue, and how to pursue it. There are two components of value chain analysis: the industry value chain and the organization’s internal value chain. The industry value chain is composed of all the value-creating activities within the industry, beginning with the first step in the course development process, and ending with the completed delivery of courses and related services to the learner. Porter (1985) identified five competitive forces interacting within a given industry: the intensity of rivalry among existing competitors, the barriers to entry for new competitors, the threat of substitute products and services, the bargaining power of suppliers, and the bargaining power of buyers (see Figure 3-2). Analyzing these forces will reveal the industry’s fundamental attractiveness, expose the underlying drivers of average industry profitability, and provide insight into how profitability will evolve in the future, given different changes among suppliers, channels, substitutes, competitors, or technology.

The structural attractiveness of the distance education industry is also determined by the same five underlying forces. In 2001, Porter argued that, while the Internet has helped distance education to expand impressively, it has only changed the front end of the industry process (p. 66).

Hence, the competitive attractiveness of online education can be analyzed using Porter's framework. The competitive forces presented in Figure 3-2 show that deploying the Internet and other ICTs within distance education has expanded the size of the market, not only allowing access to greater markets but also bringing many more companies into competition with one another. This development can place intense demands on university administrations to manage costs while ensuring quality education and service (Woudstra & Powell, 1989). The pressure on administrators comes from the changing cost structure that the Internet and the use of ICTs produce; that is, a reduction in variable costs and a tilting of cost structures towards fixed costs (Porter, 2001). In fact, compared to other distance education systems, online learning requires a heavy investment in technology (computers; servers; learning specific hardware; learning systems; acquiring authoring development tools, delivery tools, and collaboration tools; etc.) and also requires specialists (multimedia instructional designers, Web designers, technologists, faculty, etc.) to develop, run, and integrate mediated instructions. These two major categories of costs are mainly fixed. On the other hand, instructional materials are partially or totally digitized, thus reducing variable costs. The concepts of fixed and variable costs are central to cost analysis, in particular to understanding the behavior of costs, and to cost/volume/profit (CVP) analysis.

CVP analysis is concerned with how profit is determined by sales volume, sales price, variable expenses, and fixed expenses. A major application of CVP is in breakeven analysis, which provides a concise presentation of the relationship between cost and volume changes, and their effect on profit. The breakeven point is the point where total revenue equals total expenses, resulting in neither a profit nor a loss. Once "breakeven" is achieved, net income will increase by the contribution margin per unit for each additional unit sold. From a managerial perspective, fixed costs increase the risk to the company because they cannot be altered once incurred;





**Figure 3-2.**  
Industry competitive forces.

Source: Adapted from Porter (1985, 2001) and from Woudstra and Powell (1989).

therefore, online learning increases the risk to the institution. This kind of cost structure creates greater pressure for managers to engage in destructive price competition.

To understand why managers adopt price competition strategies when corporate cost structure is predominately fixed, it is necessary to understand the concept of *operating leverage*. Operating leverage is the measure of the extent to which fixed costs are being used in an organization. Using fixed costs, managers apply operating leverage to convert small changes in revenue to significant changes in profitability. The idea of operating leverage is consistent with the *economies of scale* concept developed by economists to describe the fact that cost per unit can be reduced by taking advantage of opportunities that become available as the size of an operation increases.

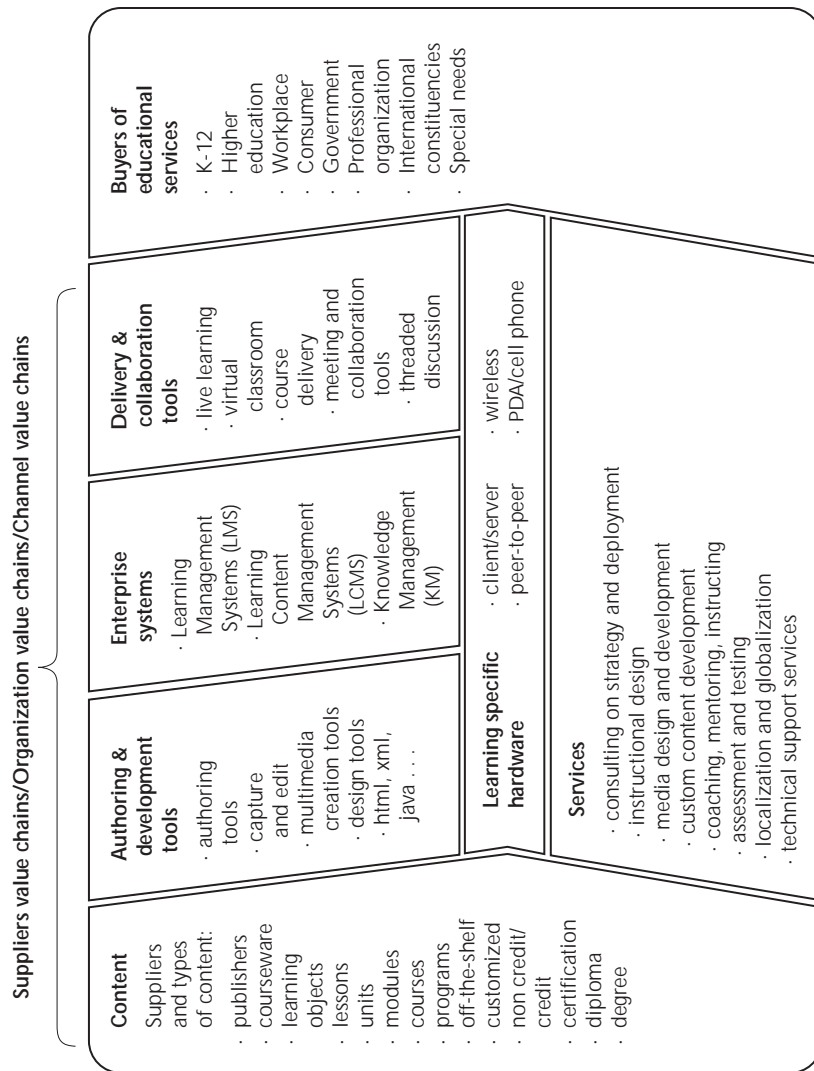
The degree of operating leverage is very important to managers, as it enables them to focus on the appropriate activities. For example, when the company operates near the breakeven point, managers should focus their attention on activities that increase sales (hence, the destructive price strategy), because increased sales will have a significant impact on profitability. On the other hand, when the company operates far from the breakeven point, the focus of managers should be oriented to cost control or new product development.

---

## Online Distance Teaching Value System and Market Map

Online learning institutions operate in an open system; therefore, companies have more difficulty in maintaining proprietary offerings, and require a sound strategic perspective to gain sustainable competitive advantage. The Internet has intensified the competition and rivalry among post-secondary institutions, especially in distance education, where the pressure to enhance efficiency and effectiveness is intense. While it is true that Internet and the use of ICT in distance education have changed significantly the look and feel of the learning experience, conventional factors, such as scale, the skills of personnel, internal processes, and physical investments, remain a permanent source of competitive advantage.

In online distance teaching organizations, many actors are involved in the educational process: faculty, course coordinators, editors,



Source: Adapted from Stacey (2001).

instructional designers, technology specialists, academic experts, examination invigilators, and technical and other administrative personnel who support the educational process. As these actors work in administratively distinct units of the organization, intra- and inter-departmental linkages are critical to efficient and effective service in

**Figure 3-3.** Online distance teaching value system and market map.

online distance education organizations (Woudstra & Powell, 1989).

An online learning distance education institution is typically only a part of the larger set of activities in what Porter (1985) calls the value delivery system. As depicted in Figure 3-3, the value chain of an online learning institution affects (and is affected by) others in the value system, including publishers, providers of authoring and development tools, enterprise systems, portals integrators, distributors and delivery partners, suppliers, the government, other educational institutions, and learners (buyers of educational services). In effect, each firm establishes itself in one or more parts of the value system, on the basis of a strategic analysis of its competitive advantage.

The application of the Internet and ICT to distance education is enabling the integration of the industry's entire value system; that is, the set of value chains in an entire industry, encompassing those of suppliers, channels, organizations, and buyers of educational services. For example, an online learning organization can incorporate the suppliers' design capabilities to reach back to its suppliers' value chains to form linkages, improve response capabilities, share costs, and gain competitive advantage (Woudstra & Powell, 1989). By connecting various activities and players in the value system, the use of Internet and ICT in distance education will optimize its workings, including sourcing, production, delivery, and service to students.

The value chain framework highlights how the online learning institution's offerings fit into the learner's value chain. When Capella University launched its revamped Online MBA, with its unique "professional effectiveness" component, the intention was to fit this program into buyers' specific program and organizational needs. Value chain analysis explicitly recognizes the fact that the various activities within a firm are not independent, but rather, interdependent. By recognizing interdependencies, value chain analysis admits to the possibility that deliberately increasing costs in one value activity may bring about a reduction in total costs. For example, the extra money spent in creating or buying a high-quality self-contained course might reduce the cost of student support and overall cost as well. The next sections discuss value chain analysis and methodology.

## Value Chain Analysis and Methodology

---

The internal value chain of an online learning institution consists of all physically and technologically distinct activities within the institution that add value to the learner's experience. The key to analyzing the value chain is understanding the activities within the institution that create a competitive advantage, and then managing those activities better than other institutions in the industry. Porter (1985) suggested that the activities of a business can be grouped under two headings: primary activities, those that are directly involved with the physical creation and delivery of the product or service; and support activities, which feed both into primary activities and into each other. Support activities (e.g., human resource management, technology development) are not directly involved in production, but have the potential to increase effectiveness and efficiency. It is rare for an organization to undertake all primary and support activities. Value chain analysis is thus a means for examining internal processes and identifying which activities are best provided by others. Figure 3-4 presents a generic value chain adapted for an online learning institution.

Support activities consist of

1. organizational infrastructure, which is concerned with a wide range of support systems and functions, such as finance, planning, quality control, and general senior management.
2. human resource management, dealing with those activities concerned with recruiting, developing, motivating, and rewarding the workforce of the organization.
3. technology development, dealing with those activities concerned with managing information processing and the development and protection of "knowledge" in the organization.
4. procurement, which deals with how resources are acquired for the organization (e.g., sourcing and negotiating with suppliers).

The overall primary structure in an online distance education organization such as the UK Open University (<http://www.open.ac.uk>) or Athabasca University (<http://www.athabascau.ca>) can be described in terms of five sectors: inbound logistics, production,

**Figure 3-4.**  
**(opposite)**  
Online learning  
value chain.

outbound logistics, delivery and marketing, and service to learners. These sectors are discussed briefly below.

*Inbound logistics* involves preparations for course development, including curriculum planning; acquiring or preparing for learning specific hardware (LSH), learning management systems (LMS), and learning content management systems (LCMS); hiring of authors; ordering of reference materials, including textbooks; and formation of internal course teams.

*Operations* involve the actual process of course development, including writing, multimedia creation, editing, formatting, graphic design, printing, and Web publishing.

*Outbound logistics* concerns the packaging and storage of courses, and the process of mailing or otherwise delivering the material to the students. Providing registered students with access to their courses through an integrated portal where they can retrieve customized and relevant information about their account is another aspect of outbound logistics. Student portals are important for online learning, as they help build a virtual campus community. In one secure place, a student can access their account to register in a course, order a transcript, ask for student financial aid, access the library and bookstore, and benefit from a variety of student orientation tools, including advising, support, counseling, and other resources.

The university enters into a contract for tuition and other services with a student when they register in a particular course. A registration is considered a sale, as funds change hands for access to the course and for purchase of the learning materials. The core revenue stream of the online learning institution derives from the provision of learning; therefore, tuition is often considered the main source of revenue for such institutions. Other sources of revenue include government funding; sales of in-house-developed products, design tools, and databases; and provision of other services to students (e.g., admission, contract extension, transcripts, challenge fees).

The preparation of brochures, advertising materials, and the university calendar is the traditional and main marketing strategy to promote the university's offerings. Given the nature of online learning, the online university must craft a branding strategy to communicate the benefits, attributes, culture, and competitive

## SUPPORT ACTIVITIES

Organizational infrastructure	Human resource management	Technology development	Procurement
<ul style="list-style-type: none"> <li>· Web-based, distributed financial and ERP systems</li> <li>· Online learner relations (e.g., information dissemination . . .)</li> </ul>	<ul style="list-style-type: none"> <li>· Self-service personnel and benefits administration</li> <li>· Web-based training</li> <li>· Internet-based sharing and dissemination of organization information</li> <li>· Electronic time and expense reporting</li> </ul>	<ul style="list-style-type: none"> <li>· Collaborative course/program design across locations and among multiple value-system participants</li> <li>· Knowledge directories accessible from all parts of the organization</li> </ul>	<ul style="list-style-type: none"> <li>· Internet-enabled demand planning; real-time available/capable of promise and fulfillment</li> <li>· Other linkage of purchase, inventory, and forecasting systems with suppliers</li> <li>· Automated "requisition to pay" and "expense claim" systems</li> <li>· Direct and indirect procurement via marketplaces, exchanges, and auctions</li> </ul>

## PRIMARY ACTIVITIES

Inbound logistics	Operations	Outbound Logistics	Delivery (sales), collaboration and marketing	Service
<ul style="list-style-type: none"> <li>· Learning Specific Hardware (LSH) (client/server, wireless peer-to-peer)</li> <li>· Learning Management Systems (LMS)</li> <li>· Learning Content Management Systems (LCMS)</li> <li>· Knowledge Management (KM)</li> <li>· Real-time integrated scheduling of reference materials</li> <li>· Dissemination of real-time inbound inventory data</li> <li>· Hiring of authors</li> <li>· Authoring tools</li> </ul>	<ul style="list-style-type: none"> <li>· Course instructional design</li> <li>· Content (learning objects, units, etc.)</li> <li>· Courseware, study guide, and student manual development</li> <li>· Writing</li> <li>· Formatting</li> <li>· Capture and edit</li> <li>· Multimedia creation</li> <li>· Graphic design</li> <li>· Printing</li> <li>· Integrated information exchange, scheduling, in-house course production, contract SMEs, and publishers</li> </ul>	<ul style="list-style-type: none"> <li>· Real time transaction of orders</li> <li>· Online registration</li> <li>· Integrated portal</li> <li>· Packaging and storage of courses</li> <li>· Learner access to course (Web access or mail delivery)</li> <li>· Integrated channel management (process control)</li> <li>· Automated learner specific account and contract terms</li> <li>· Real-time information available to advisors PR, and channels</li> </ul>	<ul style="list-style-type: none"> <li>· Live learning</li> <li>· Virtual classroom</li> <li>· Course delivery</li> <li>· Threaded discussion</li> <li>· Audio/video over IP</li> <li>· Real time access to student information, calendar, fees, course availability</li> <li>· Real-time learner feedback through Web surveys and promotion response tracking</li> <li>· Branding</li> <li>· Entering strategic partnership</li> <li>· Shared communities</li> </ul>	<ul style="list-style-type: none"> <li>· Online support of learners</li> <li>· Coaching, mentoring</li> <li>· Assessment and testing</li> <li>· Technical and support services</li> <li>· Learner self-service via Web sites and intelligent service request processing</li> <li>· Real-time field service access to learner account/courses reviews, etc.</li> <li>· Localization and globalization</li> <li>· Tutor support</li> <li>· Academic experts/marketing</li> <li>· Counseling</li> <li>· Granting awards</li> </ul>

Source: Adapted from Porter (2001).

Generation of knowledge and research

advantage of the institution and its unique online learning offerings; it must also establish strategic partnerships and alliances that are able to give the institution a unique position in the minds of stakeholders.

The service sector provides online support (technical and academic) to learners, counseling, tutoring, marking of assignments and examinations, delivery and invigilation of examinations, and maintenance of student records. It also includes learner self-service through Web sites and Web portals.

It may seem surprising that research is not mentioned explicitly as a sector in the value chain, especially as research has traditionally been considered a primary function of universities, one perceived by academics and the public as a value adding activity, as it helps the university to make a significant contribution to society. As you can see in Figure 3-4, however, research and the generation of knowledge are components of many value chain activities. Research is an essential element in all world-class universities. It ensures a vibrant academic environment, and enables the university to attract and retain good faculty, while building a strong academic reputation and contributing to the continual improvement of curriculum, learning systems, and programs.

A value chain analysis explicitly recognizes the interdependencies and the profit cost efficiencies accruing from exploiting linkages among value activities across the organization. For example, the timing of promotional campaigns (one value activity) significantly influences capacity use in course production and operations (another value activity). These linked activities must be coordinated if the full effect of the promotion is to be realized. Promoting a new program while a number of required program courses are unavailable will damage the image of the institution and result in lost registrations (revenue). Consider also that a well-designed course (one value activity) will lose value if not complemented with a suitable delivery strategy (a second value activity), and by a well-thought-out student support strategy (a third value activity). By focusing on such linkages, the value chain analysis provides a powerful tool for strategic thinking to gain sustainable competitive advantage.



## Value Chain Methodology

---

The methodology for constructing and using a value chain involves four steps: identify value chain activities, determine which value chain activities are strategic, trace costs to value chain activities, and use the activity cost information to manage the strategic value chain activities. An organization that can do these things better than its competitors creates a sustainable competitive advantage.

### Identify Internal Value Chain Activities

To identify its internal value chain activities, the online learning institution should first look for discrete activities that create value in fundamentally different ways. Figure 3-4 lists a set of discrete activities, such as course design, online registration, program and course promotion, counseling, etc. Each of these activities has distinctively different costs, cost drivers, and assets, involves different personnel, and creates value in a fundamentally different way.

Second, when identifying value chain activities, the institution should take a broad view of the organization's activities. To gain an understanding of this big picture, the institution should identify and separate out three categories of value chain activities: structural, procedural, and operational (Porter, 1985; Riley, 1987; Shank & Govindarajan, 1993; Donelan & Kaplan, 1998).

*Structural activities*, such the number and location of satellite campuses and learning centers, or the number of course production facilities, determine the underlying economic nature of the online learning institution. *Procedural activities*, such as total quality management, or awarding degrees and diplomas, pervade all aspects of the institution operation and reflect the organization's ability to perform processes efficiently and effectively. Finally, *operational activities*, such as course production, instructional design, printing, and teaching are the day-to-day activities of the institution.

Third, the institution should focus on structural and procedural activities. Most traditional cost management efforts concentrate on operational activities that have unit- or batch-driven costs. These traditional cost control efforts can be relatively easy to initiate, but

may be too narrow in focus, because they seek to control short-run operational costs. If competition is intense, then controlling short-run operational cost is necessary but may be insufficient. It is important to identify, and then focus management attention on, the organizational and procedural cost drivers, because they often represent the long-run strategic drivers of organizational cost. It is likely that such activities will be the source of an institution's competitive advantage.

### Determine Which Activities Are Strategic

To determine which of the value chain activities are strategic, the online learning institution must begin by identifying the characteristics of its services that are valued by existing learners, and the characteristics that the organization can best exploit to create value for future learners. These characteristics may include quality, perfect fit to specific learners' needs, student support, or any other tangible or intangible feature of the institution's offerings.

After identifying the distinctive characteristics of its offerings, the institution should find out which specific activities in the organization are responsible for creating those characteristics. The identified activities represent the most important value chain activities, or in other words, the strategic value chain activities that provide a competitive advantage.

For example, Athabasca University, a not-for-profit university is seeking to gain competitive advantage by meeting student's needs. The university provides students with open access, flexible learning systems (with continuous enrollment and flexible completion times for undergraduate courses), and high-quality courses, programs, and student support services. Therefore, the activities considered strategic within the University include developing a wide variety of new undergraduate and graduate programs; promoting courses and programs; seeking new partners for strategic alliances and collaborations; targeting and attracting students identified with traditionally under-represented groups; reducing traditional barriers to access (e.g., residency); offering prior learning assessment and different and flexible course delivery modes (e.g., individualized home study, electronic, etc.); and integrating appropriate

technologies into course development, delivery, student support, and administrative systems.

After identifying strategic value chain activities, the institution must identify the non-strategic activities as well. These remaining value chain activities are important, but they do not represent the sources of strategic advantage for the organization.

For example, the role of research remains a contentious issue among universities when attempting to differentiate between strategic and non-strategic activities. For many, pursuit of new knowledge through research is a critical and defining feature of the University. However, research is expensive and is more often associated with a de-emphasis on quality of teaching than one might expect, given the often strongly held belief that research enhances the quality of teaching (Pocklington & Tupper, 2002). A metadata analysis of research on the relationship between quality learning and teaching concluded that “the likelihood that research productivity actually benefits teaching is extremely small . . . the two, for all practical purposes, are essentially unrelated” (Hattie & Marsh, 2002, p. 529). Universities that use faculty from other institutions to create and deliver courses thus have considerable cost advantages, but they may be vulnerable to criticism and lack of public support as a result of a perception that they make a smaller contribution to society because of their neglect of the traditional research function of the University. Thus for some universities, research is viewed as a non-strategic activity, whereas for many others, research remains a core strategic value. Athabasca University has attempted to strike a balance by supporting a core research faculty with a special emphasis on research on the core strategic activity of the university—teaching and learning at a distance.

### Trace Costs to Activities

Each value activity incurs costs, generates revenues, and ties up assets. After identifying the value chain and its strategic and non-strategic activities, one must assign operating costs, revenues, and assets to individual activities. The accounting system should be designed to accomplish this task. One technique developed to aid

the process of allocating costs to the appropriate value chain activities cost is activity-based costing (ABC) (see Cooper, 1990a, 1990b, 1997; Cooper & Caplan, 1997).

Identifying the value chain activity cost drivers is a way of understanding cost behavior and identifying strategic and non-strategic activities. However, managers must keep in mind the broader framework of the value chain as a whole. What is more useful in a strategic sense is to explain cost position in terms of structural choices, procedural practices, and operational skills (Shank & Govindarajan, 1993; Donelan & Kaplan, 1998). Figure 3-5 provides some examples of structural, procedural, and operational activities for an online learning institution, including possible cost drivers for each. It is important to note that, for strategic analysis, volume is usually not the most useful way to explain cost behavior. Financial and non-financial measures and cost drivers both lagging (those that result from past actions) and leading (those that inform future performance) are important. The Balanced Scorecard Framework (Kaplan & Norton, 1992) provides senior managers with a focus on the organization's vision and strategy, helps them communicate strategy throughout the organization, links strategic objectives to long-term targets, and helps managers create consensus on organization competitive advantages.

### Improve Management of Value Chain Analysis

Organizations achieve a competitive advantage by managing the value chain better than other institutions in their industry. Managing the value chain implies increasing the quality of products and services, while reducing the institution's costs and increasing revenue, thus increasing competitive advantage. Examining a firm's value chain and comparing it to those of key rivals indicates areas of cost advantage or disadvantage. An online learning institution's decision to undertake certain activities is directly linked to achieving competitive advantage. For example, a school wishing to outperform its competitors by differentiating itself through higher quality will have to perform its value chain activities better than the competition. By contrast, a strategy based on seeking cost leadership will require a reduction in the costs associated with the value chain activities, or a reduction in the total

VALUE CHAIN ACTIVITIES	COST DRIVERS
<b>Structural activities</b>	
<p><b>Manage location and articulate strategy.</b> Location and strategic choices need constant articulation and are considered cost drivers. Activities in this category include framing the market opportunity, managing the scope of the market, managing the value proposition, managing the organization's unique resource system, articulating the financial model, and managing integration (vertical or horizontal).</p>	<p>number and location of satellite campuses, number of industry and social segments in which the institution is present, number of students or registrations</p>
<p><b>Manage technology.</b> What process does the online learning institution use to manage its technology through the value chain? The level of expertise and effectiveness of use, compared to competitors, will affect overall organization-level costs.</p>	<p>types of process technologies</p>
<p><b>Manage complexity of university offerings.</b> The breadth of the programs and courses being offered is an important driver of costs.</p>	<p>number of different courses and programs</p>
<p><b>Manage institutional structure.</b> Financial structure, accountability, and debt level affect many costs and the organization's flexibility.</p>	<p>debt level, debt capacity, tax status (favorable or unfavorable)</p>
<p><b>Gain experience, learn, and manage skill sets.</b> An organization's learning, growth, experience, and application of that experience drive significant portion of cost. For example, when a university lacks experience in developing online courses, this fact would be a significant driver of its online course introduction costs.</p>	<p>effectiveness of professional training, team building, knowledge sharing, economies of scale</p>

**Figure 3-5.**  
Examples of value chain activities and cost drivers.

<p><b>Manage and support research activities.</b> This activity requires that the institution develop, promote, and support an active research culture; network with funding agencies, government departments, companies, and other potential sources of funding; and support the development and enhance the reputation of the university's research profile.</p>	<p>amount of external funding; number of successful research publications; impact of research on learning, teaching, and support services; number of graduate programs</p>
<hr/> <p><b>Procedural activities</b></p>	
<p><b>Provide quality.</b> Quality management training, quality standards, and employee empowerment are directly related to overall organizational quality.</p>	<p>employee training level, student drop out rate, student satisfaction</p>
<p><b>Manage employees.</b> Management determines employee-grouping schemes, including the degree of centralization of authority, size of work unit, and number of work units. The work environment and climate are also managed through the extent and nature of training, degree of employee empowerment, maintenance of a networked working environment, and other factors.</p>	<p>employee morale and satisfaction level, turnover rate, span of command</p>
<p><b>Manage capacity.</b> Capacity utilization may be considered a strategic driver of cost of organizational offerings. Unused capacity must be dealt with through efforts to bring more students to the institution, reducing the capacity (if possible), changing some capacity constraining policies, or a combination of these strategies.</p>	<p>percentage of course development capacity utilization, percentage of delivery capacity utilization, percentage of tutorial system capacity utilization, discretionary policies restraining capacity</p>

<p><b>Manage efficiency.</b> There are many type of efficiency, but this activity represents a broad perspective of efficiency, including efficiency in program and course introduction, and overall course production, delivery, and student support.</p>	<p>lead time from program or course concept to up-and-running offering, course availability</p>
<p><b>Manage course complexity.</b> Given the breadth of offerings for the online learning institution, procedures must be in place to control the complexity of the course design, production, delivery, and service to student.</p>	<p>use of learning objects repository, standard components, and authoring and development tools</p>
<hr/>	
<p><b>Operational activities</b></p>	
<p><b>Manage course production.</b> The actual process of course development including writing, multimedia creation, editing, formatting, graphic design, printing, and Web publishing</p>	<p>number of faculty, instructional designers, editors, graphic designers</p>
<p><b>Manage inbound logistics.</b> Preparation for course development, including curriculum planning; acquiring or preparing for learning specific hardware (LSH), learning management systems (LMS), and learning content management systems (LCMS); hiring of authors; ordering of reference materials, including textbooks; and formation of internal course teams.</p>	<p>hardware and software availability (LSH, LMS, LCMS), procurement, set-ups, number of direct-labour hours</p>

Source: Adapted from Donelan and Kaplan (1998).

amount of resources used. An online learning institution might also choose to follow a focus strategy by targeting a specific market segment or a specific offering.

In controlling costs in a value chain, managers try to answer the questions given below.

- Can we reduce costs in this activity, holding value (revenue, service, credibility, etc.) constant?
- Can we increase value in this activity, holding costs constant?
- Can we reduce assets in this activity, holding costs and value (revenue, service, credibility, etc.) constant?

Costs for an activity can be reduced only if the reduction does not adversely affect strategic advantage. For example, an across-the-board spending cut may result in a short-run cost reduction, but it could be a disastrous long-run strategy. Reducing spending on course design and development could reduce course quality, increase overall production costs, and delay the scheduling of new courses. Benchmarking against similar institutions is another way to gain cost advantage, acquire good practices, and create differentiation advantage (see Jackson & Lund, 2000). Thus, internal value chain analysis makes one thing clear: value chain activities are interrelated, and no activity should be managed independently without considering its impact on all other activities.

---

## Concluding Remarks

### Chapter Summary

The use of value chain analysis facilitates the strategic management of an organization. Michael Porter's seminal work in strategic management explains the fundamentals of how organizations compete. The three main types of competitive strategy are cost leadership, differentiation, and focus. Cost leadership is a strategy that relies on lowest-cost production and delivery, while differentiation relies on outstanding quality or product (program/course) features. The focus strategy relies on differentiation or cost leadership for a particular product or market niche.



Value chain analysis is a framework that can provide a number of benefits to the management of online learning organizations. This analysis can help managers of these organizations to identify linkages between value activities within the organization, and to think in terms of process rather than function or department. Through analysis of the value system, managers can identify potentials for strategic alliances with various actors in the industry value system. Identification of cost drivers and linkage with value chain activities help managers focus on cost reduction and on finding ways to optimize returns throughout the value chain. As well, value chain analysis helps managers understand cost management problems. Failure to see the impact of a decision on the overall value chain will result in missed opportunities.

The value chain framework allows online learning organizations to break down the chain—from basic infrastructure and support, to content development, to student support and service—into strategically relevant activities to understand the behavior of costs and the sources of differentiation. The online learning organization is typically only one part of the larger set of activities in the value delivery system. Gaining and sustaining a competitive advantage requires that the organization understands the entire value delivery system, not just the portion of the value chain in which it participates. Suppliers and distribution channels have profit margins that must be identified if one is to understand an organization's cost or differentiation positioning, because the end-users (learners) ultimately pay for all the profit margins throughout the value chain. An example of an online learning university value chain and illustrations of how value chain analysis can improve the management of the university value chain activities follows.

### A Value Chain Example: Athabasca University

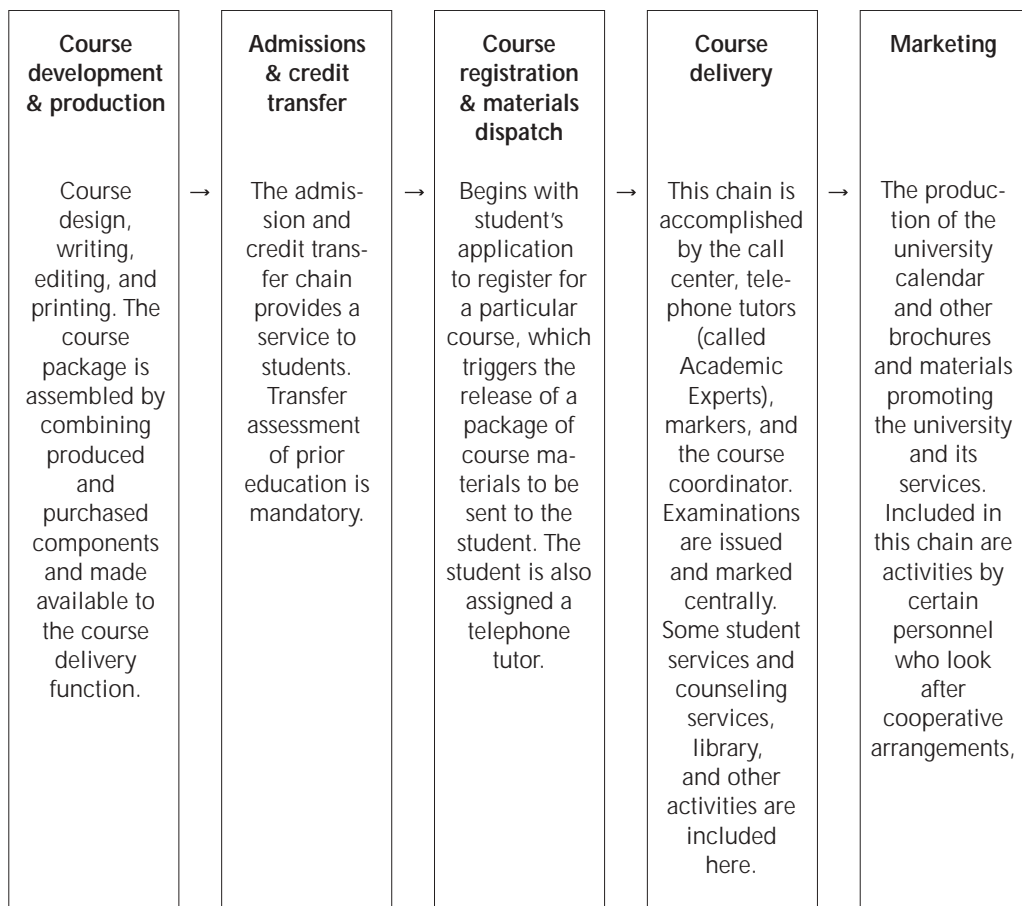
Woudstra and Powell (1989) presented an interesting analysis of the value chain of Athabasca University. They divided the University's primary activities into five fairly discrete chains as depicted in Figure 3-6.

The five value activity chains are supplemented and supported by many others in the areas identified as "support activities" in the generic value chain depicted in Figure 3-4. The primary chains

themselves can be subdivided into smaller and smaller chains, depending on the detail of analysis required. As value chain analysis shows patterns within and relationships among primary and support activity chains, it becomes a helpful tool for coping with change.

The discussion below provides some examples of decisions and projects undertaken at Athabasca University in the last few years, and considers how they have affected the performance of the institution's value chain.

- Improving course availability and quality through a problem-solving approach in the course development process and production value chain (for examples, see the discussions in all of the chapters in Part 3 of this volume).
- Improving the quality of service to students through the improvement of turnaround in assignment and examination marking. Besides expanding the use of communications technologies, Athabasca University looked at training and empowerment to provide employees with the skills and authority to affect these factors. The creation of a call center (Adria & Woudstra, 2001) that responds to and tracks student, academic, technical, and administrative requests serves this objective as well (see Chapter 12 of this volume). Athabasca University's Tutorial Services Department plays an integrative role in this process. This department has its primary function in the course delivery chain, but also performs some support activities through its involvement in the hiring of tutors, and in maintaining and developing tutorial policy. Finally, it participates in the marketing area through its field officers, who contract with outside agencies and partners for collaborative delivery of courses.
- Working with suppliers of telecommunications, publishing, authoring, development, and other suppliers to digitize the University's authoring, publishing, and printing processes. In addition, the University is establishing liaisons with publishers to gain access to their learning materials and Web sites, so that their materials can be customized, adapted, and integrated more easily into Athabasca University's course offerings.
- Focusing the electronic student support services on the needs of individual learners by implementing U-portal technology that enables the creation of individual "My AU" entry points to



Source: Adapted from Woudstra and Powell (1989).

online student services, and by launching an online, Web-interfaced registration system (see Chapter 15 of this volume).

- Integrating appropriate technologies into course development, delivery, student support, and administrative systems by developing and implementing annual, three-year operational Online Learning, Student Services, and Systems Development plans.

Other initiatives include linking curriculum to students' priorities by ensuring that the curriculum is relevant to diverse

**Figure 3-6.**  
Athabasca University's value chain.

student populations; and increasing linkages in program development, delivery, and administrative systems, and in research agendas, both between undergraduate and graduate centers, and across graduate centers. These internal collaborations are designed to maximize synergies and facilitate cross-fertilization of best practices.

## Value Chain Analysis Challenges

There are several challenges in using value chain analysis. First, traditional accounting systems are not designed for classifying costs by value activities. But with newer accounting systems, such as those based upon activity-based costing, this type of cost classification problem can be solved. Furthermore, some online learning institutions may have very complex value chains, a fact that makes the analysis difficult. Some would even argue that strategic management is unsuitable for knowledge-based organizations (Moran, 1998). We argue that online learning institutions possess characteristics very similar to those of industrial organizations, and that, therefore, strategic planning is essential to their operations and their survival. Value chain analysis is an important tool for strategic management, and when competition is intense, companies must manage activities and costs strategically, or they will lose their competitive advantage.

The model presented in this chapter originated from strategic management theory and has been proven very effective in the corporate world. The industry of online learning is an open market for both for-profit and not-for-profit organizations. According to Michael Brennen (2002), Online Learning Research Manager at International Data Corporation, spending on online learning within corporations will jump from \$3.65 billion to \$12.98 billion by 2005.

Sensing a market opportunity, for-profit universities, such as the University of Phoenix and Capella University, also target working adult students with online programs. Added to this mix of providers are the technology companies that offer Web-based continuing education, and traditional publishers that offer product certification courses, and Web-portal companies that aggregate

course content from other content sources. A potentially lucrative and very competitive market has emerged.

In this environment, not-for-profit universities have little choice but to play by the same rules that govern for-profit universities. Value chain analysis may play a significant role in enabling them to do so. A not-for-profit university must satisfy funding authorities, political leaders, and the general public as to its effectiveness and efficiency. Value chain analysis can be used for determining at what point costs can be reduced or value added in the organization's value chain. A not-for-profit organization must continually prove that it is serving specific public needs identified in its mission statement. The organization must also develop its various resources, and use them effectively and efficiently, and to demonstrate its ability to manage its operating systems successfully by delivering a quality service to the public served. The value chain analysis is a useful framework to facilitate these requirements.

## References

---

- Adria, M., & Woudstra, A. (2001). Who's on the line? Managing student communications in distance learning using a one-window approach. *Open Learning, 16*(3), 249-261.
- Alley, L. R. (2001). Sustainable global development of human and economic resources through lifelong continuous learning and personal knowledge-management. *European Journal of Higher Education, 1*-12.
- Ally, M. (2004). Foundations of educational theory for online learning. In T. Anderson & F. Elloumi (Eds.), *Theory and practice of online learning* (pp. 3-31). Athabasca, AB: Athabasca University.
- Athabasca University. (N.d.). Home page. Retrieved December 18, 2003, from <http://www.athabascau.ca>
- Athabasca University. (2002). *Athabasca University Strategic University Plan, 2002-2006*. Retrieved October 18, 2003, from [http://www.athabascau.ca/sup/sup\\_19\\_06.pdf](http://www.athabascau.ca/sup/sup_19_06.pdf)
- Bates, A. W. (1999). *Managing technological change: Strategies for college and university leaders*. San Francisco: Jossey-Bass.

- Brennen, M. (2002). Corporate e-learning market forecast, 2001-2005. Unpublished manuscript.
- Carlson, S., & Carnevale, S. (2001, 14 December). Debating the demise of NYU on-line. *The Chronicle of Higher Education*, A31.
- Carnevale, D. (2000, 15 December). Accrediting panel grants candidate status to Western Governors U. *The Chronicle of Higher Education*, A51.
- Certified General Accountants Association. (2000). Home page. Retrieved December 18, 2003, from [www.cga-canada.org](http://www.cga-canada.org)
- Chartered Accountants School of Business. (2003). Home page. Retrieved December 18, 2003, from <http://www.calearn.ca>
- Cooper, R. (1990a, Fall). Cost classifications in unit-based and activity-based manufacturing cost systems. *Journal of Cost Management*, 4-14.
- Cooper, R. (1990b, November). Explicating the logic of ABC. *Management Accounting*, 58-60.
- Cooper, R. (1997). Activity-based costing: Theory and practice. In B. J. Brinker, J. G. Kammlade, C. Marx, G. Eiler, & L. S. Maisel (Eds.), *Handbook of cost management* (B1-B33). (S.p.): Warren, Gorham and Lamont.
- Cooper, R., & Kaplan, R. S. (1992, September). Activity-based systems: Measuring the costs of resource usage. *Accounting Horizons*, 1-13.
- Donelan, J. G., & Kaplan, E. A. (1998, March-April). Value chain analysis: A strategic approach to cost management. *Journal of Cost Management*, 7-15.
- Gilbert, A. D. (2001). The idea of a university: Enterprise or academy. *Manning Clark Symposium*. Retrieved December 18, 2003, from [http://www.unimelb.edu.au/vc/present/manning\\_clark.pdf](http://www.unimelb.edu.au/vc/present/manning_clark.pdf)
- Hattie, J., & Marsh, H. W. (2002). The relationship between research and teaching: A meta-analysis. *Review of Educational Research*, 66(4), 507-542.
- Jackson, G. B. (2000). University of Phoenix: A new model for tertiary education in developing countries? *TechKnowLogia*, 2(1), 34-37.

- Jackson, N., & Lund, H. (2000). *Benchmarking for higher education*. Milton Keynes: Open University Press.
- Kaplan, R. S., & Norton, D. P. (1992, January-February). The balanced scorecard: Measures that drive performance. *Harvard Business Review*, 71-79.
- Kilmurray, J. (2003). E-learning: It's more than automation. *The Technology Source*. Retrieved September 20, 2003, from <http://ts.mivu.org/default.asp?show=article&id=1014&action>
- Lorenzo, G. (2003). Story of a for-profit. *Educational Pathways*, 2(4). 1-8.
- Moran, C. (1998). Strategic information technology planning in higher education. In D. Oblinger & S. Rush (Eds.), *The future compatible campus* (pp. 151-163). Bolton, MA: Anker.
- Open University (N.d.). Home page. Retrieved October 17, 2003, from <http://www.open.ac.uk>
- Pocklington, T., & Tupper, A. (2002). *No place to learn: Why universities aren't working*. Vancouver: UBC Press.
- Pister, K. (1999). The university of the future: Place, process or paradigm. In J. Brennan, J. Fedrowitz, M. Huber, & T. Shah (Eds.), *What kind of university? International perspectives on knowledge, participation and governance* (pp. 229-239). Buckingham, UK: SRHE and Open University Press.
- Porter, M. (1980). *Competitive strategy*. New York: The Free Press.
- Porter, M. (1985). *Competitive advantage: Creating and sustaining superior performance*. New York: The Free Press.
- Porter, M. (2001). Strategy and the Internet. *Harvard Business Review*, 79(3), 62-78.
- Riley, D. (1987). Competitive cost based investment strategies for industrial companies. In *Manufacturing Issues* (pp. 30-34). New York: Booz, Allen, and Hamilton.
- Scott, P. (1998). Decline or transformation? The future of the university in a knowledge economy and a post-modern world. In P. Baggen, A. Tellings, & W. van Haaften (Eds.), *The university and the knowledge society* (pp. 7-13). Bommel-London-Paris: Concorde Publishing House.
- Shank, J. K., & Govindarajan, V. (1993). *Strategic cost management: The new tool for competitive advantage*. New York: The Free Press.

- Society of Management Accountants of Canada. (1995-2003). Home page. Retrieved December 18, 2003, from [www.cma-canada.org](http://www.cma-canada.org)
- Stacey, P. (2001). E-learning value chain and market map. Retrieved September 20, 2003, from <http://www.bctechnology.com/statics/bcelearning.swf>
- University of Phoenix (2002). Home page. Retrieved October 16, 2003, from <http://www.phoenix.edu>
- Woudstra, A., & Adria, M. (2003). Organizing for the new network and virtual forms of distance education. In M. Moore (Ed.), *Handbook of distance education* (pp. 531-47). Mahwah, NJ: Erlbaum.
- Woudstra, A., & Powell, R. (1989). Value chain analysis: A framework for management of distance education, *The American Journal of Distance Education*, 3(3), 7-21.





