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A review on value chain in higher education

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Abstract

Today, the universities as higher education instituts are faced with a changing environment. Increasing international competition besides changing management paradigms in higher education, make universities encounter with new challenges. So knowing factors which improve management methods and create competitive advantage is very important. We aim to review researches on value chain in higher education and related fields. Some of these researches applied the basic Porters value chain model inexplaining part of the activities. But some of them believe that the Porters model is designed specifically for business enterprises not social services organizations, and higher education as a service sector needs a specific value chain model which can explain process and components of value adding in this sector.

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Open access under [CC BY-NC-ND license](https://creativecommons.org/licenses/by-nc-nd/4.0/).*Keywords:* Value Chain, Higher Education, Value Co-Creation, Value Co-Delivery, University;

1. Introduction

In changing world, which increasingly is adding to uncertainty, all higher education institutions should provide favorable responses to social needs. Experience has proven that universities can provide best services to the community if they have concerns of continuous improvement in the quality of their services. Academic quality improvement in higher education has recently been considered in many universities over the world (Yarmohammadian, 2004; Yarmohammadian, Mozaffary, & Saghaeiannejad Esfahani, 2011). One of the models which can be adopted to improve the quality of higher education institutions is value chain model. According to Michael Port study in 1985, the idea of value chain is based on the process approach for organizations studies. The idea of seeing a manufacturing organization as a system, made up of subsystems each with inputs, transformation processes and outputs. These involve the acquisition and consumption of resources - money, labour, materials, equipment, buildings, land, administration and management. These activities can be classified generally as either primary or support activities (Gabriel, 2006).

In other words, Porter's value chain consists of five primary activities and four supporting activities. The primary activities are inbound logistics, operations, outbound logistics, marketing and sales, and service. The support activities consist of infrastructure, human resource management, technology development, and procurement. But the point is the service industry has some differences from manufacturing industry. For example, the service industry does not have the real operation of inbound or outbound logistics. So we need to have a different version of the value chain which can well describe the service industry specially the higher education sector (Gabriel, 2005;

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Gabriel, 2006). In this article we aim to review the value chain researches related to higher education and related fields. So this is an attempt to provide an analysis of the results of previous researches in the mentioned fields.

2. Value chain recent studies

In their research, Sison, Pablo, and the E-College Team (2000) examined the processes of an educational institution using Porter's value chain as a framework. They next described a system designed to support this education value chain. They mentioned that the value chain of a modern university can be viewed as a network of activities centered on the functions of teaching, research, and community service, which in turn, involve educational design, educational delivery, assessment, research and development, and outreach activities. Each of these processes add value to the total educational package provided to students, and supporting these processes are the activities of recruitment, admission, enrollment, academic service, and alumni support. Their paper examines the value chain of a higher educational institution such as a university, and describes how an integrated system, such as the E-College, was designed to mirror and support the value chain processes by either automating them or providing tools for their management.

While the activities that add most value to the educational package are those that involve educational design and delivery, their analysis covers the educational "supply chain" as a whole and therefore includes relationships with feeder schools, from which students come, and employers, to which graduates go. By opening up student and educational package information to these entities, it is possible to improve overall system performance in ways formerly unimaginable. The output of this activity may benefit society directly or may feed back into educational (re)design. The E-College is an integrated system designed by the College of Computer Studies of De La Salle University to support the education value chain. The support may come in the form of automation of value chain activities, or provision of tools that facilitate, if not make possible, the planning, organizing, and monitoring of activities in the value chain. The system therefore has to serve a diverse pool of users: students, faculty, administrators, guidance counselors, student organizations, alumni, companies, the office of career services, and feeder schools.

Educational value chain introduced by van der Merwe and Cronje, (2004) as a "graphical tool" that developers may use in re-engineering efforts to identify possible bottlenecks that are likely to occur, as well as providing a route to follow when determining the value added elements by technology. They apply a high-level process model, which is defined as the structure depicting all the primary processes and their relations to accomplish the high-level objectives of the modeling exercise. They noted the processes included in an educational value chain should only include the high-level essential processes necessary to reach a predetermined outcome. With the focus on the outcomes, they used the following steps to determine the value chain.

1. Define the outcome or scope on which the value chain will focus.
2. Identify a requirements elicitation methodology that focuses on the identification of the high-level processes within the application domain.
3. Identify the high-level processes within the application domain.
4. Use the high-level process model developed to derive the sequence of processes needed, to achieve a predefined outcome.

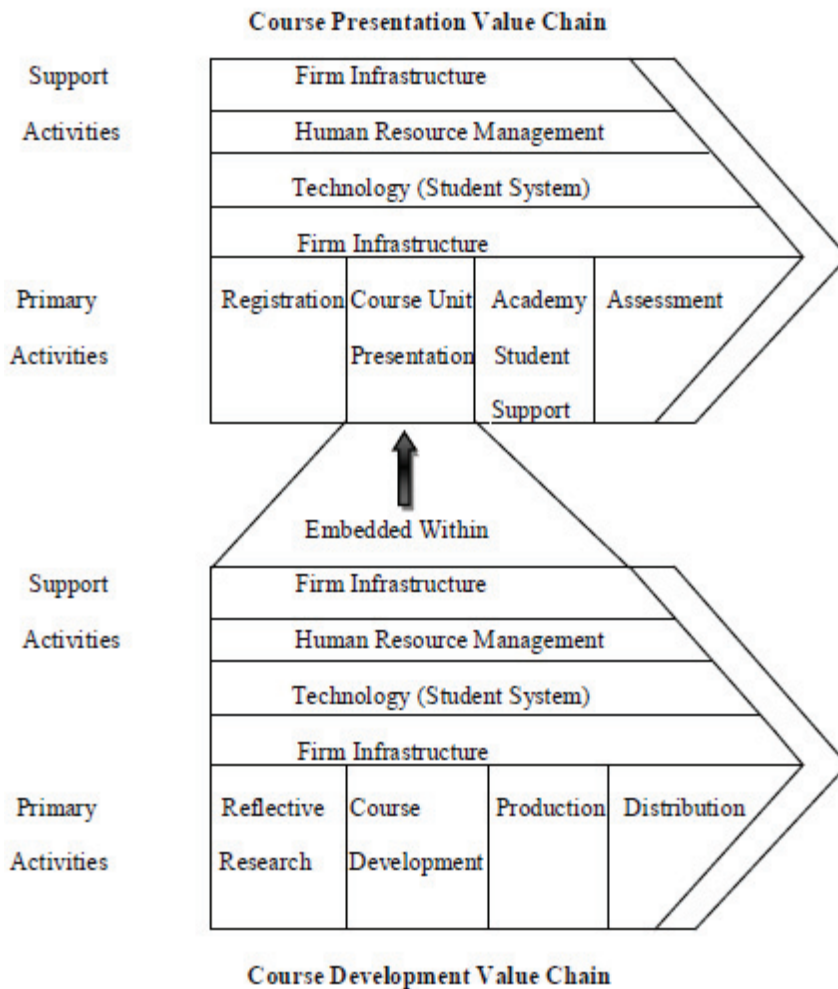


Figure 1. Education Value Chain (van der Merwe & Cronje, 2004)

On the other hand, some studies have shared the same ideas about the value chain model and its application in the higher education sector. With little differences, all of these articles are come up with these ideas: value management, value co-creation system, value chain for higher education sector, communicational interaction model, and co-delivery of value. They stated that now we have to perceive service as a product with different characteristics from the physical product. For this peculiar difference, the value chains of these two categories of products (tangible and intangible) ought to be different though having some commonalities.

They claimed that The Porters value chain is very applicable to the manufacturing sector but, it cannot be used directly in the service sector. They considered the value as a bundle of benefits; customers have to incur some costs to obtain. These costs can be in the form of money, efforts, time, opportunity cost, etc. Therefore, for the customer to be satisfied or dissatisfied depends on the net value between the total customer value and total customer cost. This net value is called Customer delivered value. Therefore, there is a need for the value to be created both by the service provider and service user. So ‘co-creation’ needs to be seen as a joint responsibility of everyone involved in the service delivery system, including the customer. The service system will therefore consist of value co-creation and value co-delivery system. Given the discussion about the relative inadequacy of the Porter Value Chain in the service sector, they took the Higher Education sector as a representation of the services. So it is clear that some of the components of Porter’s chain (e.g. inbound and outbound logistics) cannot be directly applied to the service industry. Therefore, the value chain model for the Higher Education sector has been developed. The new model has also five primary attributes and four supporting attributes (figure 2) (Gabriel, 2005; Gabriel, 2006; Makkar, Gabriel, & Tripathi, 2008).

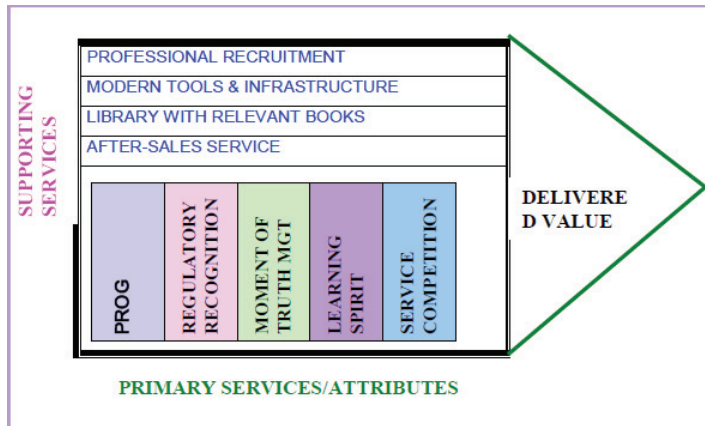


Figure 2. The Modified Value Chain for Higher Education Sector (Makkar, et al., 2008)

Therefore, the generic Porters value chain may provide insight into designing other value chains. Due the nature of the services, it needs to have a different version of the value chain. The value chain for services will have five primary attributes and four supporting attributes. The term attribute is used deliberately since other components of the value chain for services might not be activities but attributes. Primary attributes of value chain for services (VACSE) are: Service Design, Knowledge Management, Delivery Systems Management, Moment of truth Management, and Service Competition Management. The supporting attributes are: People, Process Information, Physical Aspects, Punctuality and Reliability.

At last, they discuss value co-creation model for services (VCMS) which will indicate the necessary components need to be integrated in the service industry when need to co-create value. When value is co-created it implies that both service providers and users are involved. It will have the following components: Investors, Product designers, Service Providers, Supporting Systems, Target Markets and Environment (Gabriel, 2005; Gabriel, 2006; Makkar et al., 2008).

An article by Ruskov&Ruskov, (2007) presented an approach to modelling educational processes as a value added chain. They attempt to interpret and compile existing business, governance and education processes reference models and suggest an example, Academic Chain Operation Model (ACOM). They stated that the processes within educational and competence development activities should include all the main educational process: planning, designing, managing and support. There are two major directions for academic processes classification: 1) the main education activities and 2) all the other activities. The activities that are not related directly to the educational process and that do not add value for the students, can be classified as additional. For the normal execution of the educational process it is necessary to plan and perform all supporting activities very well. So, they decompose the educational processes into following groups: Category, Process Group, Process, and Activity. All of these groups have their own processes. For example, the top level, category, of the Academic Chain Operations Model (ACOM) describes the key issues and the gearing of main processes within the individual units of chains and between them (as networks). Planning, Designing, Managing, and Supporting are the components of the category. Or the next level, process group, describes the sub-processes of the categories. Therefore, the ACOM model enables academic organizations to effectively get knowledge about the processes in their academic value chains.

In an article named "Reconfiguring the higher education value chain", after a short review on value chain concept, the authors tried to redefine the value driving activities for higher education includes: Student enrolments, Research grants and publications, Teaching and learning training, Research training and development services, Technology, Student's evaluation of teaching, and Visibility. This paper represented the reconfigured value chain in higher education. The reconfigured model captures the increasing significance of support services, the emerging trend of teaching and learning (in large part independent of the physical presence, i.e. reducing level of contact), technology as an enabler as well as a creator of cost advantage and enhanced efficiency; and the formalisation of marketing and sales services. The activities identified have a structure and are capable of being outsourced (figure 3). Therefore, this study has revisited Porter's value chain analysis and extended its application to the higher education sector (Pathak & Pathak, 2010).

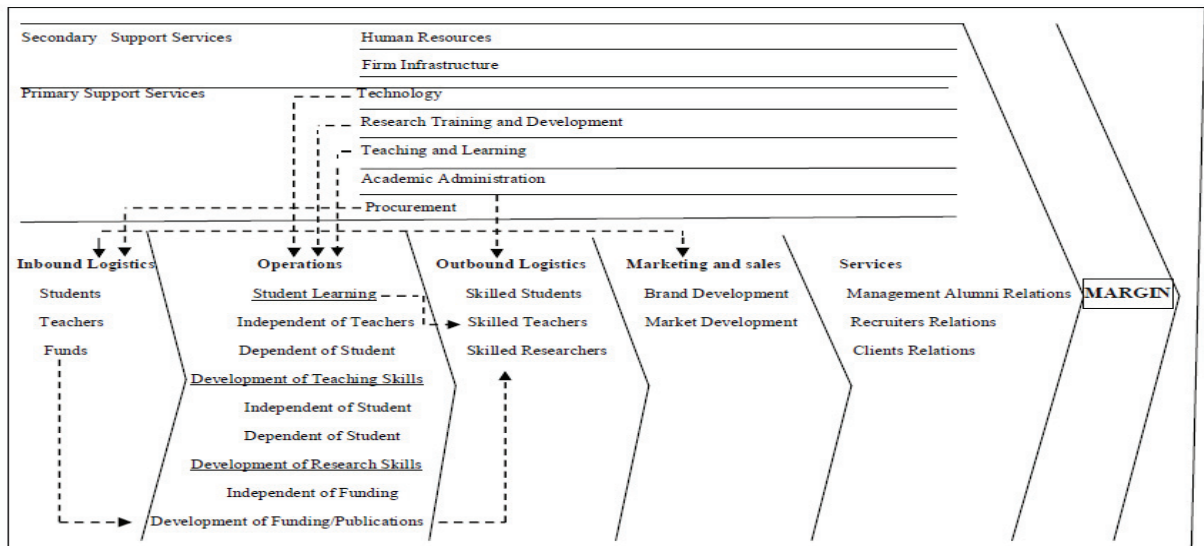


Figure 3. Reconfigured higher education value chain (arrows indicate the critical linkages) (Pathak & Pathak, 2010)

3. Conclusion

As we have seen there is a tendency for applying the concept of the value chain to explain and expand many areas such as higher education sector. Many researchers believe that the service industry specifically the higher education institutions should develop their own value chain. We hope that we could provide a rout for future researches to improve the value chain concept and make it more appropriate for applying in higher education sector. Researchers can use various methods to explore the value chain components. They can apply qualitative research methodologies which less used in recent researches. As well they can take advantages of quantitative research methods to describe this concept experimentally and fundamentally. Although there might be still controversy in appropriate methodology for identifying value chain as creation, supply, delivery components.

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