
Understanding and modelling Higher Education: Integrating value chain analysis with Enterprise Architecture

Background

The Innovation Base project is tasked with capturing models of practice throughout the general domain of higher education (HE) in order to support further understanding of the complexity of HE. One specific task is to construct a “model” university that could be used to support discussion of requirements with software suppliers.

More recently, JISC has published a “Flexible Services Delivery” (FSD) call for projects which has among the programme aims:

“To enhance institutions’ and consortia’s ability to:

- Gain a thorough understanding of their administrative and academic processes and requirements so they are able to make better use of their current systems and fully understand the impact, cost and risk of change, and thereby identify what issues need to be addressed to move to more appropriate and flexible modes of service delivery, whether internal to a single institution or in sharing services across consortia;”*

This understanding is a necessary pre-requisite to implementing a service based architecture (or indeed any sort of architecture).

Alongside the FSD programme is another JISC initiative, which is contributing to an systems architectural understanding of HE – Enterprise Architecture. Broadly Enterprise Architecture can be seen as an organizational wide architecture that integrates a variety of architecture views of business, control, process, information, application, and technology structures. Architectures may be presented using text, pictures, guidelines and models in order to enable stakeholders to align business strategy with operational activities. (More detailed discussion and information is available elsewhere at:).

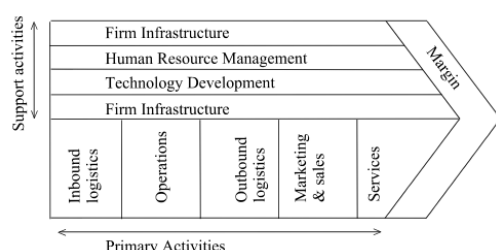
While EA and methodologies such as TOGAF could be used to address this alignment requirement – the key element of how to understand the business of higher education is much harder and there is an need for an approach that supports analysis of the business of higher education and provides an integrated drill down into enterprise architecture and subsequent models that will support services based architectures.

Proposal

One way of aligning a detailed understanding of the business of higher education is to apply Porter’s Value Chain model¹ to higher education and integrate it with key principles of enterprise architecture.

Porter’s Value Chain Concepts

The value chain model is a structured approach to understanding how the performance of an organization can be used to generate competitive advantage. The model is widely established and is a staple of all business school programmes.



Value chains are used to identify the sequence of generic activities that businesses execute in order to meet the needs of customers. Each activity creates and builds value leading to a final value for the customer. Activities are primary or supporting. The generic value chain can represent any business.

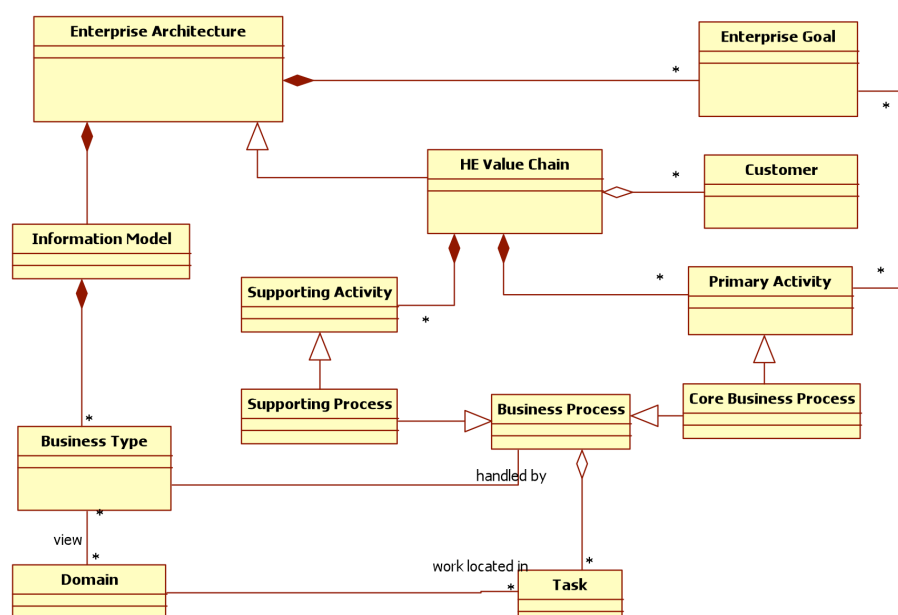
¹ Porter, M., (1985) Competitive Advantage – Creating and Sustaining Superior Performance, NY: The Free Press.

The application of value chains in higher education is relatively recent phenomena. There are at least three citations where value chains have been used as an aid to understanding the “business of higher education”. Merwe and Cronje (2004)² presented the use of value chains in an educational setting mainly for describing the process of content creation for learning. The Charles Stuart University underwent a reform of the whole institution and used value chains for identifying two core processes (Learning and Teaching, and Research and Graduate Studies)³. A complex methodology of their approach is also available online. More recently Warner and Liss at Kansas State University ⁴demonstrate how core and supporting activities of higher education map to Porters’s value chain activities. They also present a useful “architectural view” of how the applications and systems typically found in a HE map to HE value chain model.

These examples illustrate albeit (n=3) that there is some intrinsic benefit in considering the use of value chains to understand HE in the UK. This paper suggests that much more benefit can accrue by linking value chain analysis to enterprise architecture and to subsequent model elements as described by the IB and in order to realise that we first need to articulate an integrated conceptual model what integration is required.

An integrated conceptual model of Value Chains and Enterprise Architecture

The diagram below represents the key concepts from value chains and EA -



In this model, a HE Value Chain is a type of Enterprise Architecture comprising either core business processes or supporting processes. Such processes can be broken down into tasks which are performed in a domain. Core processes deliver value to customers and meet enterprise goals. The model is mostly self-explanatory and assumes usual definitions not included here for brevity.

Key benefits

Value chains and their processes allow us to go across domains.

We could model value chains in a tool such as archimate

Integration of value chains with EA to enable strategic alignment

More robust ways of documenting application maps to value chain activities

Ready made knowledge in the public domain on business alignment etc.

² Van der Merwe, A and Cronje, J., (2004) The Educational Value Chain as modelling tool in reengineering efforts. 3rd International Symposium on Information and Communications Technologies. Las Vegas.

³ <http://www.csu.edu.au/special/wpp/index.htm>

⁴ <https://kuscholarworks.ku.edu/dspace/handle/1808/1755>