HMEF: framework to evaluate merging of Higher Education Institutions – application of Enterprise Architecture

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ABSTRACT

Mergers of Higher Education Institutions (HEIs) are organisational processes requiring tremendous amount of resources, in terms of time, work, and money. A number of mergers have been seen on previous years and more are to come. Several studies on mergers have been conducted, revealing some crucial factors that affect the success of mergers. Based on literature review on these studies, factors are: the initiator of merger, a reason for merger, geographical distance of merging institutions, organisational culture, the extend of overlapping course portfolio, and Quality Assurance Systems (QASs). Usually these kind of factors are not considered on mergers, but focus is on financial matters. In this paper, a framework (HMEF) for evaluating merging of HEIs is introduced. HMEF is based on Enterprise Architecture (EA), focusing on factors found to be affecting the success of mergers. By using HMEF, HEIs can focus on matters that crucial for merging.

INTRODUCTION

Aim of this paper is to form a framework for evaluating merging of Higher Education Institutions (HEIs). Framework is based on Enterprise Architecture (EA) and to literature review of studies conducted on mergers of HEIs. Strategy of the paper is following. First we conduct a literature review on studies on mergers of HEIs to study factors that affects mergers. Secondly we discuss on the importance of Quality Assurance System in higher education. Thirdly we explain the usage of EA. Fourthly we introduce a framework (HMEF) for evaluating merger of HEIs.

MERGERS IN HIGHER EDUCATION INSTITUTIONS

Mergers in HEIs are not a new phenomena. In last few decades there have been multiple mergers all over the world. Several studies on mergers have been conducted (see for example: Fielden & Markham, 1997; Harman, 2002; Kyvik, 2002; Skodvin, 1999). In UK, there have been even published a guide for merging HEIs (HEFCE, 2004).

Studies show that reasons for mergers are various. For instance, HEIs might be trying to accomplish larger academic portfolio or better strategic position when preparing to forthcoming changes in HE sector (Fielden & Markham, 1997: 2). Also financial reasons might be behind a merger (Palfreyman, cited by: Hodges, 1999). Findings from a previous study indicates that when mergers are initiated voluntarily by HEIs, motives for merging are academic, and when they are forced by a government, motives are financial (Skodvin, 1999).

Merging of HEIs can be a success or a failure. Studies show that mergers having an academic motive are more likely successful than those aiming for financial goals (Fielden & Markham, 1997: 7). Also HEIs that are geographically close to each other are best candidates for successful merging (Skodvin, 1999). This is not always the case if HEIs' cultures are far different (Kistan, 2005). Cultural clash has been found to be one of the reasons for a failure (Fielden & Markham, 1997: 2; Norgård & Skodvin, 2002; Skodvin, 1999). It has also been found that merging is more successful in HEIs where the number of overlapping course programs is small (Skodvin, 1999).

The need of resources is usually underestimated in mergers. Merger is a time-consuming process (Skodvin, 1999), which may take several years in time even in a preparation phase (Hodges, 1999). Therefore it is important to allocate resources properly, and "do the right things". In general, a lot of effort is used for due-diligence in merging processes, but little on culture and processes. This have been found to be one reason for mergers to fail (The Economist, 1997).

Successful mergers have several benefits. Studies shows that merging HEIs have improved or developed their academic quality and portfolio, governance and staff (Skodvin, 1999).

QUALITY ASSURANCE IN HIGHER EDUCATION INSTITUTIONS

Findings from previous studies shows that Quality Assurance Systems (QAS) plays important role in merging of HEIs (Kistan, 2005). However, quality as a concept has multiple definitions, also in HEI context. Quality can be understood as *Exceptional*, which means that quality is something 'high class', exceeding high standards, or passing required standards. Second way to understand quality is as *Perfection*, which means zero defects, or getting things done right way at first time. Third way to understand quality is a *Fitness for Purpose*, which means that how the product or service meets customer requirements, or how the organisation fulfils its goals. Fourth way to understand quality is *Value for money*, which means that organisation operates efficiently, and it can be measured. Fifth way to understand quality is a *Transformation*, which means changes that add value. (Harvey & Green, 1993).

The third definition of quality is where Quality Assurance (QA) comes in to play. QA is about mechanisms, processes and organisation to ensure that desired quality is met (Harvey & Green, 1993). From QA point of view, there is no matter how the desired quality is defined or measured. The challenge in HEIs is that how to define the purpose of HEI (Harvey & Green, 1993). This also affects on what and how to measure. It has been stated that HEIs should be measured on how the instructional process functions, that is, how well students learn (El-Khawas, DePietro-Jurand, & Holm-Nielsen, 1998).

In this study, quality is considered to be a fitness for purpose. To be more specific, quality in HEIs is the extend it follows its defined processes, measured by defined metrics. For example, the core process of teaching is 'good quality' if it produces education in defined standards, measured by learning outcomes. QA in HEIs is a process that systematically ensures that these learning outcomes are met. Quality Assurance System (QAS) contains process descriptions of the HEI's core and support processes, and metrics used for measuring them.

ENTERPRISE ARCHITECTURE IN HIGHER EDUCATION INSTITUTIONS

Interest towards Enterprise Architecture (EA) in HEIs has increased during few past years. There have been multiple pilots on HEIs (see for example: Hedges, 2009; Townsend, 2008) and some pilots are starting (CSC, 2008). EA as a concept has multiple definitions. EA is a tool or a method used to produce a detailed description of an organisation. That description can also be called EA. Descriptions can be produced from current state of the organisation (as-is architecture) and from desired state (to-be architecture). EA frameworks have methods for describing transition states for moving from as-is to to-be. The purpose of EA is to reach goals of the organisation set by its stakeholders, and to create value to organisation (Syynimaa, 2010). Taxonomy of the purpose of EA can be seen on figure 1.

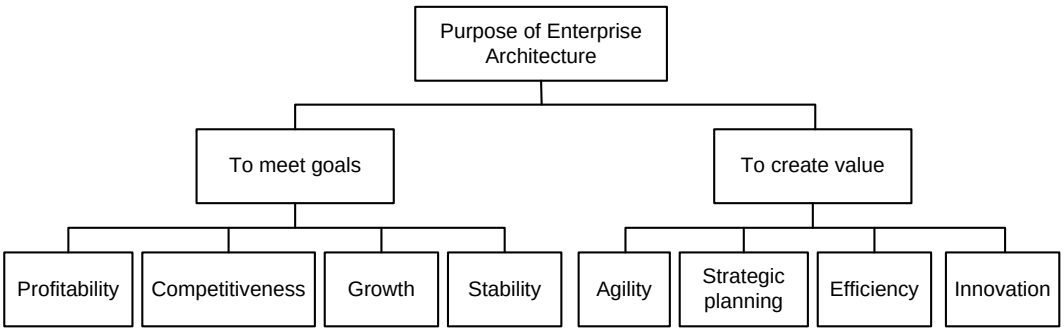

Figure 1. Taxonomy of purpose of Enterprise Architecture (Syynimaa, 2010)

EA as a description consists of four dimensions. These dimensions are *Business Architecture* (BA), *Information Architecture* (IA), *Systems Architecture* (SA) and *Technology Architecture* (TA). BA contains descriptions of organisation's strategy, processes, activities, structure etc. Generally speaking everything that tells us why the organisation exists, what it does and what is its purpose. IA contains descriptions of information and data used and generated by organisation. SA contains descriptions of organisation's information systems and their relations to each other. TA contains descriptions of technology used to implement information systems, and technical guidelines and rules. (Pulkkinen, 2006).

EA is a powerful tool to make sure that all levels of organisation functions as a whole. EA dimensions are worked thru from top-to-bottom, so that the dimension on top will provide required information to dimension below it. This approach ensures

that (i) all processes and information they use are handled properly using information systems, and (ii) there are only such information systems in the organisation that are required by business. As the QA are part of Business Architecture, this is the dimension of EA we are interested in this study.

Widely used EA frameworks is The Open Group Architecture Framework, better known as TOGAF. One of key differences between other EA frameworks (Kilpeläinen, 2007) is that it has an Architecture Development Method (ADM). ADM is a method for developing EA to meet business and IT goals of an organisation (TOGAF, 2009: 51). ADM contains eight distinct phases, which are (A) Architecture Vision, (B) Business Architecture, (C) Information Systems Architecture, (D) Technology Architecture, (E) Opportunities and Solutions, (F) Migration Planning, (G) Implementation Governance, and (H) Architecture Change Management (TOGAF, 2009: 54). As already stated, on phases B thru D, EA is defined for an organisation in two different time frames, current (as-is) and target (to-be). Phase E is where a detailed migration plan between these two architecture states is defined.

HIGHER EDUCATION INSTITUTIONS MERGING EVALUATION FRAMEWORK

A framework used for evaluating HEIs' merging (HMEF) can be seen on figure 2. The HMEF is based on EA. Now let's define its purpose according to taxonomy presented in figure 1. In a HEI merger, there are two important stakeholders, government and merging HEIs. Their goals for a merger are either (i) *competitiveness* (to expand academic portfolio) or (ii) *profitability* (cost reduction). HMEF is creating value for stakeholders in terms of (i) *strategic planning* (evaluate merging) and (ii) *efficiency* (easier merger after evaluation). Phases of HMEF are described below.

Phase 1: HEIs' current Business Architecture

On this phase, a current Business Architecture of each HEI is described. Things that are to be described are (i) course portfolio, (ii) geographical location of units, (iii) QAS, and (iv) organisational structure and culture.

Phase 2: Scenarios of merged HEI's target Business Architecture

On this phase, multiple scenarios of target Business Architectures of the merged HEI are described. Purpose of this is to form different solutions for the merger in terms of course portfolio, geographical location, QAS, and organisational structure.

Phase 3: Merged HEI's target Business Architecture

On this phase, scenarios are evaluated and a target Business Architecture of the merged HEI is decided. As an outcome, a futre course portfolio, geographical location, QAS, and organisational structure of merger are defined and can be communicated to stakeholders.

Phase 4: Merged HEI's target Information Architecture, Systems Architecture and Technology Architecture

On this phase, by using 'a normal' EA approach, the rest of the EA dimensions are defined based on Business Architecture.

Phase 5: Transition steps for merging HEIs

On this phase, required transition steps for each HEI to move to target architecture are defined. Transitions are defined on each EA dimension. This is the most time and work consuming phase, as this is where the actual change is implemented into organisations. Required time and amount of work on each merging HEI are likely different, since HEIs are starting the transition from different states.

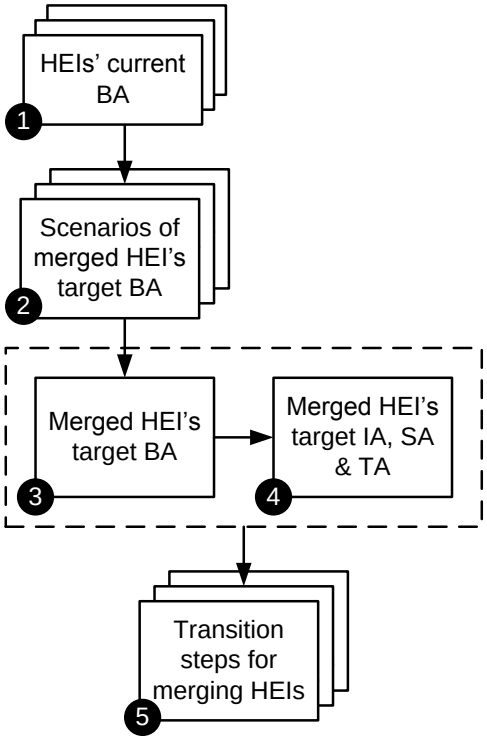

Figure 2. HEI Merging Evaluation Framework

Strengths of HMEF are that most crucial factors influencing the success of merging are dealt first (see table 1). After these crucial factors are discussed and decisions are made, focus can be set to managing the change. On phase 1, the organisational culture is described, so evaluation on phase 3 can also be based cultural aspects of HEIs. As EA is becoming more important on HEIs, it is easier to be implemented after Business Architecture dimension is defined (Riihimaa, 2009).

Factor	*Positive*	*Negative*
Merging initiated by	HEIs (Voluntary)	Government (Forced)
Reason for merging	Academic	Financial
Geographical distance	Close	Distant
Organisational culture	Similar	Different
Course portfolio	Complementary	Overlapping
Quality Assurance System	Similar	Different

Table 1. Factors influencing merger of HEIs

CONCLUSIONS AND DISCUSSION

By using HMEF framework HEIs' stakeholders can evaluate and plan merging before initiating actual merger process. This kind of approach should result a more likely successful outcomes.

A clear limitation of this study is that it is based on literature review. HMEF should be tested on real merger to be scientifically validated.

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