A FRAMEWORK TO DERIVE HOLISTIC BUSINESS TRANSFORMATION PROCESSES

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Abstract: This paper describes an approach to deriving a holistic business transformation process and its application in practice. When a business is transforming there needs to be changes to many aspects of its Enterprise Architecture (EA). The research has ascertained that often organisations are not aware of all the aspects that need to be changed to successfully implement a business transformation. This paper presents a holistic approach to transformation that identifies the current EA of the organisation and models the one that should be after transformation to identify all aspects that need to under go transformation. It then uses a meta-model of a process to derive the required processes to achieve a holistic transformation of the businesses undertaking electronic transformations. This approach evolved in the process of assisting business transformation is the Small and Medium Enterprise (SME) sector within the Western Sydney region. This is demonstrated through a real-life example. This work has been carried out under the auspices of the AeIMS Research Group at the University of Western Sydney.

1 INTRODUCTION

Rapid advances in Information and Communications Technologies (ICT) imply a change in the way businesses are organized and operated. The concept of agility in business, which is a result of ICT innovations and advances, leads to collaborative and competitive global transactions(Unhelkar et al., 2009). The need to understand, model, review and implement efficient yet dynamic business processes could not be overemphasized. However, there also appears to be a dearth of appropriate holistic transformation processes that can be used for modeling and transforming business processes.

This paper aims to fill that lacuna by deriving the process of business transformation. Furthermore, this paper also outlines the application of this approach to real life business transformation projects. The factors influencing business transformations and the risks and advantages associated with them have been reported by Arunatileka S. and Ginige (Arunatileka and Ginige, 2003b). These factors have also been identified and extended by Arunatileka , D., et.al(Arunatileka et al., 2008) and applied to mobile businesses. Electronic

transformations of businesses aim to capitalize on the connectivity accorded by the ubiquitous Internet. These transformations result in numerous business benefits such as enhanced customer experience and improved internal business efficiency(Deitel et al., 2001) (listed later in this paper in detail). However, business transformations themselves need a well thought out process that helps identify the business goals, the current structure of the business and steps in undertaking the necessary change to become an electronic-global business. Enterprise Architecture (EA) frameworks (such as Zachman, TOGAF) (The_Open_Group, 2010, Zachman and Holcman, 2010) provide excellent backdrop for the study of enterprises. We extend and modify these frameworks in understanding the business as it stands. However, our core motivation of this work is the way in which these frameworks can be used to model the future expected state of the business and how to reach there. Consider, for example, the 6 x 6 model of a business as presented in the Zachman framework. We abstract the building blocks of a business from this EA framework and summarize it into technology, networks, data, functions/processes and people. Each of these elements can be made up of many sub-elements depending on the type and

size of business and its transformation goals. We argue that modeling these elements along the lines we have discussed later in this article, is a crucial step in undertaking transformation.

The rest of this paper is organized as follows: project background and literature review, dimensions of a transformation framework, derivation of a business transformation process, discussion on the approach to validation of the transformation framework based on application, conclusions and future directions.

2 LITERATURE REVIEW & PROJECT BACKGROUND

Precursor to this work is the earlier reported work on business transformations that was undertaken by Ginige et al (Ginige, 2006, Ginige, 2008, Hol and Ginige, 2008) and Ghanbary and Unhelkar (Ghanbary and Unhelkar, 2007). These earlier reports underscored the fact that formal planning and execution was vital in undertaking successful business transformations. The advances of semantic web and service orientation have further propelled the rate at which the business environment is changing as we move away from information silos to collaborative processes. The rapid impact of IT demands derivation of a formal and systematic transformation process. Use of such process will lend itself to configuration depending on the type, size and goals of the organization. Numerous factors influence these transformations – including the economic, technical, process and social dimensions(Hol and Ginige, 2008, Unhelkar, 2010).

Figure 1 (A) explains why businesses undertake formal transformations. The gap between where the organization is and its external environment presents a continuous challenge to the business. The external environment acts on the organization which, in turn, takes its time and responds with changes to its processes, technologies and people. The time taken between the initial action of the environment and the response of the organization keeps it "out of sync" with the external environment. Businesses want to transform themselves in order to become agile – so that they are able to respond effectively to changing external circumstances and stay in harmony with it. Figure 1 (B) summarizes what the organization needs to do in order to transform: have a business transformation process framework, derive and configure a specific transformation process from it, execute the process by enacting it and finally maintain the transformed operational processes on

an ongoing basis. Such ongoing maintenance is what constitutes an agile organization that remains in harmony with the external environment.

We are understanding agility of business as a time measure between two significant changes in the environment and time it takes for an organisation to respond to that change. A highly agile organization will be able to quickly respond to a change in the environment; however, as the rate of environmental change increases the corresponding agility of the organization can become low. At some point the need for an organization to keep up its responses to changing business environment becomes a continuous process. This is what a truly agile organization is – and it provides another reason for formal transformation processes.

Following are the specific aims of an electronically transformed agile business:

(a) Extend its reach globally and provide wide coverage for the organization's products and services with the use of communications technologies and web services,
(b) Change the business processes of the organization to quickly and effectively responding to changing needs of the customer in a location and time independent manner,
(c) Enhance customer experience through personalized services and additional services,
(d) Reduce internal costs and improve the quality and efficiency of its procurement, inventories and development activities ,
(e) Improve corporate accountability and regulatory compliance through timely, accurate and detailed reporting on business performance and
(f) Manage environmental and socio-cultural responsibilities with efficient business processes.

These advantages of business transformation and globalization have also been studied by Lan and Unhelkar(Lan and Unhelkar, 2005) under Global Enterprise Transitions, and separately outlined as seven principles of electronic transformation (e-Transformation) by Arunatileka et al (Arunatileka and Ginige, 2003b, Arunatileka and Ginige, 2003a). While earlier attempts to undertake business transformations were radical (such as reported by Hammer and Champy (Hammer and Champy, 2001) in re-engineering the corporation and also electronic transformations roadmaps discussed by Kalakota and Robinson (Kalakota and Robinson, 2001), our experiences – especially in the context of SMEs – were that such radical transformations did not succeed and that their stated business benefits did not accrue.
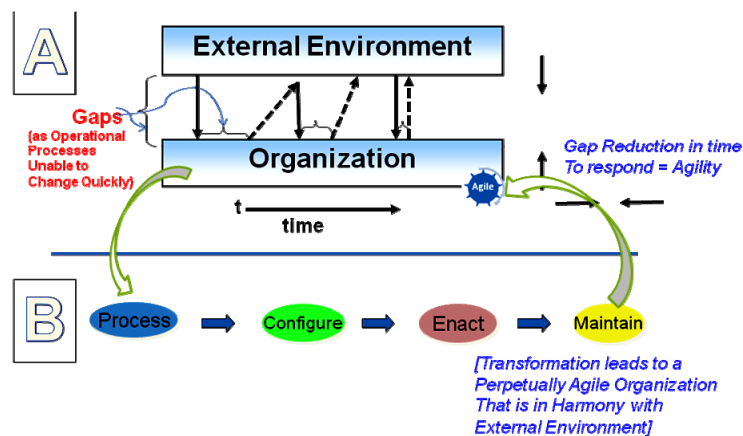
Figure 1: Goals of Business Transformations is to produce an Agile Organization that has minimal time gap between action from the external environment and response of the organization.

Our experiences and further investigations suggest that transformation of business requires careful handling of the operational processes of the organization. This focus on operational business processes in transformations is further ratified by the work of Arunatileka D.(Arunathilaka, 2006) who investigated an in-depth approach to transformation of mobile business processes. In a recent global survey of practitioners, Unhelkar (Unhelkar, 2009) also discovered that business perceive "business processes" as a major area of value as well as risk. Hence a transformation process needs to pay particular attention to the operational business processes.

Based on our literature review, understanding and experiences with SMEs, we find that the success of business transformation depends on the following factors:

- The purpose of transformation and business goals need to be clearly spelled out. These goals, as mentioned earlier, can range from cost reduction to enhancing customer experience. More importantly, these goals can change depending on the type, size and strategic direction of the organization.
- Understanding of a well formulated business transformation process. Deriving a transformation process formally from an existing framework is a vital part of successful transformation. Not having such a process is a risk to the business wanting to change. The value of a transformation process is its ability to configure itself.
- Enterprise Architecture frameworks help in modeling the existing and targeted organization. Such EA frameworks provide, in measurable

terms, what gets transformed and what value it provides to the business. They also provide the basis for deliverables used in mapping the existing and future organization.
- Modeling of the operational processes of the organization is critical in undertaking successful transformation. As mentioned earlier, operational business processes provide the single most critical aspect of a business and they need to be modeled, transformed and validated for the success of the new business.
- IT systems and applications need to be studied and their migration needs to be planned out in a phased manner. The organization continues to function while it undergoes transformation. Therefore there is a need to support the organization while it operates and, at the same time, transform its applications.
- Content Management systems – especially dealing with rapidly changing multimedia contents – need to be modeled and a road map for their transformation outlined. Business transformation will require sourcing of new contents, correlation of existing contents with each other, and cohesive display of location-specific contents to users.
- Communications and networks also undergo change – especially for large and global organizations. Transformation of communications and networks is a specialist technical dimension of the transformation and needs to be factored in the overall transformation.
- Quality assurance of the new enterprise including verification and validation of the operational processes that have been transformed.

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3 BUSINESS TRANSFORMATION FRAMEWORK

Figure 2 presents a generic meta-model of a process. This meta-model can be used to derive a specific process of transformation. Usually, this derivation is dictated by the goals of transformation and the subsequent deliverables. For example, a small transport company would undertake transformation of its operational processes only, whereas a large auto manufacturer would undertake transformation of all dimensions of its business. There is further need to segregate processes that relate directly to the operation of the business and the process that handles the business transformation. Unhelkar(Unhelkar, 2003) has argued for three core elements of a process that describes what gets transformed, who does it and how it is done – the deliverables, roles and activities respectively. Against the backdrop of these arguments, we propose core elements of the meta-model for the business transformation process (Figure 2). Successful electronic transformation needs to consider the activities and tasks that need to be undertaken for transformation, the people who will undertake the transformation and the deliverables that will be produced at the end of the exercise.

These core elements of a business transformation meta-model can be further described as follows:
A suite of deliverables; these are the templates that help describe the existing enterprise and also the transformed enterprise. The deliverables based on the templates reduce the risks in undertaking transformation and improve its quality. For example, mapping the organization as containing data, functions and people requires each of these elements to be described. Templates providing that description are a part of the transformation meta-model and can be used for this purpose. Our experience suggests that a practical transformation process is iteratively derived based on the required deliverables and business goals. For example, in case of Small and Medium Enterprises (SMEs), not all types of deliverables– such as user training or package implementation - are required. In case of large and global organizations, on the other hand, all elements of deliverables are required including their lifecycles and iterative updates.

A suite of activities and tasks; these are the step-by-step guidance provided by the process for transformation. For example, identification of the goals of transformation, documenting the operational functions/processes and applying verification and validation techniques to the deliverables are all listed as formal activities within the transformation process.

Roles that undertake transformation and those that get transformed; the people involved in transforming the business include the decision makers, business analysts, testers and regulators. The roles that undergo transformation include management, external parties and customers. A transformation meta-model contains all possible roles from which some are instantiated depending on the actual transformation taking place.

4 DERIVING A BUSINESS TRANSFORMATION PROCESS

There are many models to represent different aspects of an organisation. 7S is one such model. 7e in eTransformation model was derived based on 7S model (Arunatileka and Ginige, 2003b) Thus, eventually, as explained earlier in Figure 1 (B), through a transformation process we aim to create an agile organization that is "in sync" with its external environment. The model to understand an organization selected by us is the Zachman model. The overall process for deriving a business transformation is as follows:

- Note the type and size of the organization – small, medium and large organizations would transform differently
- Identify the status of the current organization using a known model, such as Zachman model
- Identify the goals of transformation of the organization in short and long term
- Identify and document strategies to respond to the changes in the business environment.
- Identify the affected processes and approach required to change these business processes.
- Use Zachman model to identify what should be in rows and columns to implement these new processes.
- Identify all cells in Zachman where there is a difference between existing elements and desired ones
- Use Process meta-model presented earlier to derive a Transformation processes for each pair of related cells that are different.
- Based on the difference formulate the deliverables for each aspect that needs to change.
- Based on the deliverables derived each of the components of Transformation process.
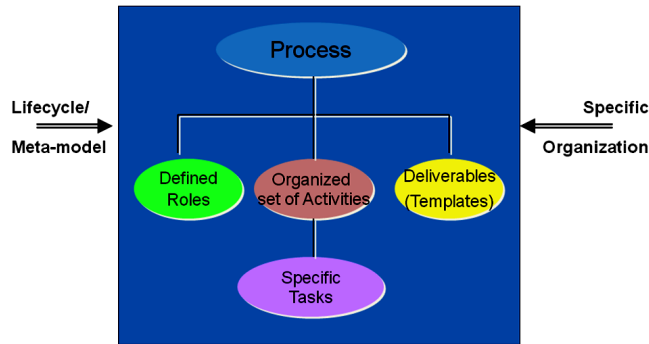- Work out the detail activities required.

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Figure 2: Core Elements of a Process Meta-model that can be used to Instantiate a Business Transformation Process for a Specific Organization.
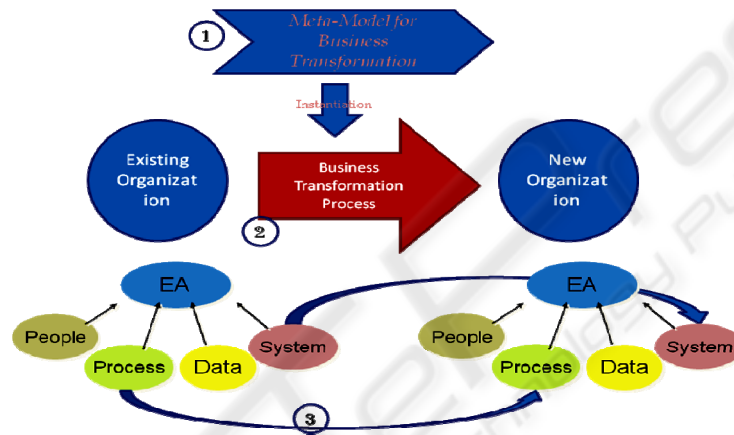

Figure 3: Correlating Business Transformation Process with Operational Business Processes undergoing transformation.

- Appoint roles to perform the activities.

Figure 3 shows three separate types of processes: (1) an abstract meta-model for business transformation (2) derivation and configuration of the specific transformation process and (3) the actual operational processes of the business undergoing transformation. Figure 3 further shows how an enterprise can be understood and modeled using an Enterprise Architecture (EA) framework. From the meta-model presented in earlier Figure 2 it can be seen that we need transformation processes to transform people, operational processes, Data and Systems. However, there can be many more elements depending on the organization and EA framework being used. Having identified these four core elements of an enterprise in this case, the derived transformation process can then transform each of these elements providing a holistic approach. Note that the operational business processes, in particular, need extensive modeling and walk-through for their successful transformation.

5 APPLYING BUSINESS TRANSFORMATION IN PRACTICE

The best way to demonstrate the application of business transformation in practice is through an example. Consider an organisation that is losing customers to its competition. The management of this medium sized organization has decided to counter this loss by introducing a CRM. The goal of this CRM is to improve responses to customer concerns and enhance customer experience. The business transformation meta-model provides many elements of which we select few that help in undertaking transformation of this SME. The process of business transformation is derived, configured and then enacted (shown in Figure 1 (B)) in order to transform the business. The following Table 1 summarizes the EA framework that could be used to understand and model the transformation of the aforementioned SME.

Table 1: Instantiation of the Core Elements of a Business Transformation meta-model for a Specific SME.

Elements of Transformation	Existing Organization	Transformed (Electronic) Organization	Expected Improved Outcomes and Comments
People: *Customers* *Senior management* *middle management* *Users*	Many employees, some repeating tasks. Customers have multiple touch points. Frustrated customers.	Single touch point for customers globally.	Greater value for the customer and reduced effort for employees. Training / up skilling is required
Process *Internal* *External*	Hierarchical; dispersed across many small departments. Unacceptable response time to customer issues.	Customer-centric processes. Improved response time. Enhanced customer experience.	Streamlining of processes through re-engineering and modeling results in efficient processes. Reduced wastage. Modeling and optimization required.
Data *Multi-media*	In multiple Access spreadsheets.	Converted into a single SQLserver database. Accessible on Internet and mobile devices.	Reduced duplication of data and hence less errors. Also, better control for the management. QA and testing required.
System *In-house* *Packages*	Multiple systems developed on 'as needed' basis.	Merging/Integration of systems into cohesive suite that is Internet-enabled. Able to support the people goal of single touch-point.	Less IT maintenance work and hence less costs. Reduction in energy budget. Improved performance. QA and testing required.

The elements of transformation listed in Table 1 are derived from a repository of transformation elements that are grouped as people, process, data and system (see Figure 3). This table further lists how the organization looks now and how it should look after transformation. This list, based on our transformation meta-model, provides starting point for a comprehensive business transformation and change management program. In case of the aforementioned example of an organization losing customers, following are the major steps in this transformation program:

- The organization is identified as a medium sized, localized organization
- People, process, data and system of the existing organization is listed (with the background of Zachman model, as described in Figure 3 of our model)
- Improving customer experience and thereby retain customers is the goal of the organization
- Integration of data and systems at technical level – using Web Services / Service Oriented Architecture (SOA)
- Up skilling / training of staff at people level.
- Customer management processes undergo re-engineering using BPM techniques (for example, see Ginige and Ginige(Ginige and Ginige, 2007))

- New business process architecture includes single point of contact (SPOC) functionality (see the comments in the Table 1).
- Transformation takes place for each element (described in each of the rows in Table 1) – e.g. people are trained, processes are re-engineering, data is converted (and tested) and systems are integrated keeping quality assurance in mind.

Eventually, this table expands into a comprehensive project plan that is based on the existing and future goals of the organization. Set of activities and tasks corresponding to the elements of Table 1 are incorporated in that project plan.

6 CONCLUSIONS AND FUTURE DIRECTIONS

This paper presents a framework to derive a holistic business transformation process. The goals of such framework is for the organisation to become agile and continuously be harmonious with the changes in the external business environment. The framework includes a meta-model which provides a suite or repository of various transformation elements made up of people, processes and deliverables. An EA framework was used to map the existing organization and its future state. We also described

the three different types of processes that are involved in transformation – the meta-model of a transformation process, the actual instance of the transformation process derived using the meta-model and the operational processes that are undergoing transformation. These elements are used in different context depending on the type and size of the organization and also its transformation goals. We plan to apply this transformation model to many other organizations in the region to further validate it.

The work presented in this paper will be extremely valuable to these organisations as research has shown many organisations do not clearly identify all aspects of the organisation which can be modelled through an EA that needs to be changed when undergoing a business transformation(Hol and Ginige, 2009). However, the practical application of this research will benefit by further action-research in the application of existing EA models (e.g. Zachman, TOGAF) from a transformation perspective.

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