A BUSINESS PROCESS ENGINEERING FRAMEWORK

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ABSTRACT

Organisations across the world are currently faced with enormous changes brought about by new technologies and the quest for global competitiveness - resulting in a rapid change in the way organisations manage themselves. Business process engineering is an approach that is used to enable organisations to become change agile, although with a low rate of success. The aim of this paper is to present a holistic engineering approach to business process engineering, aiming to increase the success rate of business process engineering projects.

1. INTRODUCTION

Organisations across the world are currently faced with enormous changes brought about by new technologies and the quest for global competitiveness. In the old paradigm work is managed and executed in isolation. In the new paradigm Information Technology (IT) becomes one of the main business process drivers, fusing and integrating work and technology across traditional organisational boundaries, industry boundaries and even international boundaries. This forces the organisation to look at a variety of management and engineering techniques to use as enablers to make the organisation more change agile. This includes approaches and techniques such *as business process reengineering*, *total quality management*, *activity-based management*, *enterprise engineering*, *knowledge management*, *learning organisations* [7], *value chain analysis* [4], etc. However the one common element in these approaches, is the business process. Although business processes are simply defined as a series of interrelated activities linked together to produce customer value they form the integrative component of the organisation. As such, business processes need to be viewed in a holistic manner in relationship with all organisational elements such as jobs, competencies, measures, policies, technologies, resources, etc. [7]. The Business Process Engineering (BPE) approach formally deals with the engineering of business process and covers the cycle of identification, re-thinking and engineering of the business process to achieve fundamental improvements in business outcomes.

2. THE BPE FRAMEWORK

BPE projects have not been very successful in the past with failure rates of up to seventy-five percent being recorded. The aim of this research is to propose a BPE framework which differs from the traditional business process reengineering thinking by focusing on a holistic approach to BPE, based upon system thinking principles. Traditional methodologies or approaches to business process engineering deals with the business process and usually one or more business

components such as information, strategy or organisational design. The BPE framework requires business process engineering to take in account *all* components of the organisation, that is *business processes*, *management systems*, *people*, *customers*, *culture*, *vendors*, *shareholders* and *resources* (information, assets, technology, information). Furthermore, the order in which these components are addressed will be that a) strategy follows the customers, b) strategy aligns business processes, c) the business process is the central focal point of the organisation, d) people enable the business process, e) resources support the process execution, and f) values and culture ensure alignment between people, process, strategy and customers [1]. The following system thinking principles are important in the application of the BPE framework (note system and business process used interchangeably):

- A *top-down approach* is used to view the system as a whole.
- A *life-cycle* orientation defines the framework addressing the phases of analysis, design, development, production and/or construction, distribution, operation, maintenance, support, retirement, phase out and disposal.
- Better and more complete effort to the initial definition of *system requirements*.
- An *interdisciplinary* or *team approach* throughout the system design and development process to ensure that all project objectives are addressed in an effective and efficient manner [7].

It has been shown from practical experience that the business process engineering project needs to be well-understood and communicated to all stakeholders involved as the purpose and manner of business process engineering implementations go against traditional management practices and believes. Adding to the complexity and confusion that goes hand in hand with these projects are the number of tools and techniques available to the team during the project lifecycle. In order to minimise risk of failure, emphasis is placed on three critical areas, *BPE principles*, *tool* and *technique applications*, and the formulation of a business process *strategy*.

3. THE BPE CHANGE PLAN

The BPE framework approaches the business process engineering exercise as a project and as such divides the project into three major phases, the *innovation phase*, the *implementation phase*, and the *improvement phase*. The logic of the three phases is to minimise risk during the project by containing changes in manageable chunks through milestones and deliverables.

During the innovation phase executive support is gathered in order to develop change initiatives to implement new business processes in the organisation. Upon approval, solutions will be develop and implemented (the implementation phase), and subsequently improved on a continuous basis (the improvement phase) [7].

4. INNOVATION PHASE

The innovation phase of the BPE project aims to develop leadership in the organisation in order to establish a business process strategy. The contextual and conceptual level of the organisation plays a major role during this phase, as the phase results in a proposal (business case) to

implement a number of initiatives to achieve the strategy. The phased milestones are the *project scope*, *case for action*, *AS-IS business model*, *TO-BE business model*, and the *business case* [7].

4.1. Project Scope

The *project scope* ensures an understanding between team members and the organisation of the business process context to be engineered, covering all inclusions and exclusions. To achieve this the BPE team will do a preliminary investigation of the organisation on a contextual level. Critical during this step is to identify all possible stakeholders who may influence or impact the business process under study.

4.2. Case for Action

The *case for action* serves two purposes in the BPE project, first to identify the *reasons* for engineering the business processes, and secondly to define the principles, vision and strategy for the new business process. The BPE team will conduct focus groups with stakeholders to develop engineering reasons (needs, wants, opportunities, threats), as well as conducting workshops in a joint application development (JAD) manner to establish the vision and strategy for the process.

4.3. AS-IS Business Model

The *AS-IS business model* is about discovering the "truth-about-today" [1]. The objective is not to compile an exhaustive definition of current practices but rather to establish a cost and performance baseline for input into development of the business process vision and strategy. Emphasis is placed on the use of current organisation models such as the organigram, function trees and job descriptions. Formalising the current product and service offering enables the team to complete the AS-IS picture of who the process customers are, what they receive from the process, what process steps are followed, which resources are used, and how well the process performs against stated business objectives.

4.4. TO-BE Business Model

The purpose of developing a *TO-BE business model* is to create an understanding of what the future business processes should look like. The success of this design is based on how well the previous project deliverables have been completed as well as the level of team participation and understanding. The BPE team makes use of techniques such as brainstorming, simulation, costing, benchmarking and best practices to derive the TO-BE model. This model contains the same information as the AS-IS business model and explains which customers will be serviced, the product and service offering, and how these products and services will be manufactured and distributed.

4.5. Business Case

The *business case* is a proposal to executive management for the approval of required initiatives to implement and achieve the stated TO-BE Business Model. The business case puts forward a cost benefit analysis which shows the benefit (quantified in performance) and the cost required to implement initiatives. In combination with the cost benefit analysis, a number of alternatives are proposed to executive management to select the most appropriate implementation route. Supporting the business case is a release plan, which shows *how* initiatives can be implemented, that is, what the sequence of events can be and how long it will take to complete. It is critical that

the business case proposes an implementation plan that realises change. However, it is imperative that in the development of the business case, the BPE team keeps in mind that the proposed changes to the organisation needs to be a balance between the degree, speed, benefit and the organisation's ability to absorb this change.

5. IMPLEMENTATION

5.1. Implementation Phase

During the implementation phase the project team and targeted business areas implement physical solutions. Success of this phase depends on a clear business process strategy, realistic implementation plans, and a project team acting as change agents. The milestones to be achieved are *design*, *migration*, *build*, *lab*, *pilot* and *rollout*.

5.2. Design, Build and Migration

The design process is used to develop business process designs according to the required performance level and within the stated strategic framework. Addressed during the design specification are all organisational components - workflow steps, business process performance and measurement, roles and responsibilities, product & service specifications, information technology designs and human resource competency profiles. Following approval of the design specification the build activity commences to build the holistic business process. This means that policy and procedures are developed, information technology systems are developed, people are recruited and trained to perform the new business process.

As part of the migration strategy, the implementation team will decide in which manner the solution will be implemented. Three possible scenarios can be followed, full *rollout* after the business process is completed, *lab testing* of the business process, or a *pilot* implementation of the business process.

5.3. Lab

Depending on the implementation risk, the business process can be tested in a simulated environment, or lab environment [1]. This serves a number of uses, a) to minimise risk of implementation failure, b) test system under simulated conditions, and c) to allow users to experience the new system. The team will observe behaviour and performance of the business process under a number of situations which will trigger either enhancements or changes to the system.

5.4. Pilot Implementation

A pilot implementation represents a first field implementation. Depending on implementation criteria and risks involved, a pilot implementation provides the implementation team with a number of opportunities of how to refine the implementation as well as business process improvements.

5.5. Rollout

The rollout phase is the final stage in the implementation phase representing the physical implementation of the system across all targeted business areas. The rollout manner depends on

the particular business process and organisation, but in principle a number of events are executed - training, site preparation, polices, procedures, phase-out, phase in of systems, help-lines etc.

6. IMPROVEMENT PHASE

The improvement phase leads major change implementations into a continuous improvement mode whereby the implemented solutions are "tweaked" to business objectives and organisational performance requirements. Responsibility of this phase lies with the various process owners and process workers [2]. This means that process owners and process workers will check process performance against stated business objectives and if deviations occur, action initiatives to be carried out to ensure that process performance improves, or that a new engineering project gets initiated. Of importance for the success of this phase is that the continuous improvement program is well-established and supported, the performance management function supports the continuous improvement program and that individuals and teams are recognised and rewarded for their continual process support.

7. CONCLUSION

Engineering of business processes in the organisation is not a "nice-to-have" exercise. Given changing business conditions the change and engineering of business processes are imperative for organisations if they want to stay competitive. The BPE framework presented in this paper deals holistically with all organisational components, people, culture, process, strategy and resources. Applying the principles of business process engineering within a holistic framework it is believed that this approach will assist the organisation to sustain momentum through the implementation and establishment of new or changed business processes.

> "*What distinguishes engineering from alchemy is a structured methodology, grounded in observations and facts, guided by sound models and targeted toward realistic goals.*"
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> - Mayer and deWitte [3]

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