An Integrated Approach to Business Process Reengineering Management

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Abstract—**Business Process Reengineering (BPR) or simply reengineering is an initiative undertaken by organisations that seek to fundamentally redesign their existing business processes. In the current business landscape, the only constant is change; hence organisations should always strive to conduct their businesses effectively and efficiently. However reengineering has not always yielded fruitful results, as indicated by the 70% of the initiatives that have failed. The failure rate of the reengineered initiatives partly results from neglecting the "human element" involved when revising processes. Literature has not dealt extensively with how stakeholders react towards dramatic change brought about by reengineering, and the current paper is primarily concerned with this issue, through the proposal of the Business Process Reengineering Management (BPRM) concept.**

Index Terms—**Change Management, Contemporary Measures of Performance Process; Reengineering**

I. INTRODUCTION

ADAM Smith introduced the concept of breaking down work to its simplest specialized entities during the 1700s at the commencement of the industrial age [1]. However in the 21st century businesses are forced to do more with less, and the current contemporary measures of performance have hanged. A concept introduced around the 1990s was developed to change the manner in which organisations conduct their businesses and the concept of Business Process Reengineering (BPR) or simply reengineering was developed [2]. Reengineering is defined as follows:

"The fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance such as cost, quality, service, and speed [3]"

From the aforementioned definition it can be seen that reengineering does not only make the assumption that the existing processes are inadequate, but it overlooks how stakeholders that might be affected by the by the change introduced through reengineering will react. It has been said that humans are creatures of habit [4], and it is ill-advised of organisations to make the assumption that humans will accept all of the changes proposed by management; hence the concept of Business Process Reengineering Management (BPRM) has been developed to ensure a smooth and seamless transition during a reengineering endeavor.

A. Problem Statement

A business consultant company once stated that "Culture eats strategy for breakfast" [5], implying that even though an organization could have a sound strategy for re-viewing As-Is/current processes, if the culture in the organization does not encourage the proposed changes, the strategy is bound to fail. Thus there is a need for improving the current reengineering concept to ensure that it is managed better, so that it caters for one of its major drivers i.e. people.

B. Objectives

The paper was aimed at achieving the objectives stated below:
- Review BPR techniques,
- Review factors that cause people to resist change, and identify gaps that reengineering possess in terms of including all parties that will be affected by the reengineered processes,
- Analyse reengineering case studies with the major emphasis on why they failed or why they became successful?
- Review existing literature on current techniques used to manage change,
- Develop the Business Process Reengineering Management (BPRM) concept form the identified gaps in reengineering;
- Provide prospective benefits that could be derived from the implementation of Business Process Reengineering Management.

C. Methodology

The following methodology was followed in the development of the paper:
1) Investigation of why reengineering is important, and how it came into existence,
2) Different reengineering techniques utilized in industry were analysed,
3) Analysis of successful and failed initiatives were carried out, with a special note on why they were successful or not,
4) The development of the concept of Business Process Reengineering Management;
5) Concluded investigation, and proposed further possible investigations in the subject.

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II. LITERATURE REVIEW

The different techniques that are widely utilized in academia as well as in the business environment for reengineering endeavors were reviewed. Resistance to change factors were also reviewed, and how these factors ultimately hinder the effective implementation of reengineering endeavors.
Final Stage

A. Reengineering Techniques

There are two techniques that have been widely used in industry, and they are [3] [6]:

1) Davenport's Methodology Approach;
2) Hammer and Champy's Intuitive Approach.

Methodologists are of the view that it can be a daunting task to commence a reengineering endeavor without a system to follow [6], while intuitivists believe that following a certain structure in reengineering initiatives will hinder creativity, and they are also of the view that every organisation is unique and operate under different dynamics, hence they rely more on intuition and experience [3]. The success of one approach relative to the other cannot be measured accurately as most case studies were initiated before the development of the methodical approach. With that being said, Business Process Reengineering Management (BPRM) is applicable to both approaches, because it focuses on the management of the technique irrespective of the approach. Both of the aforementioned approaches agree that the four organisational domains need to be in existence for a successful reengineering endeavor, and the four organisational domains are as follows [7]:

1) Structure Domain,
2) Task Domain,
3) Technology Domain;
4) People Domain.

It can be seen that people play a crucial part in the successful implementation of a reengineering initiative, more so people's input is also inherent in the technology and task domain as indicated by Equation 1:

EQUATION 1:
BUSINESS PROCESS [8]

$$BP = P + WF + T$$

Where BP is he business process, P the people affected, WF the workflow, and T is the technology utilised. When relating Equation 1 to the organisational domain, it can be seen that when people are neglected in an engineering endeavor, tasks (which drive the workflow) as well as the technology used thereof cannot yield positive returns on their own. It is due to this reason that resistance to change as well as techniques to manage change should be properly understood, and effectively managed.

B. Resistance to Change

Resistance to change can be defined as the refusal to accept or comply with something that has to be carried out differently [9]. Therefore resistance to change in organisations is set to be the refusal by stakeholders to accept a different approach in conducting business. There exist a number of techniques in literature which are aimed at providing possible alternatives on ways to effectively manage change. The techniques which were investigated and the combination thereof were incorporated to the concept of Business Process Reengineering Management (BPRM).

Resistance to change issues exhibit a transition curve profile as discussed by A. Young and T. Lockhart [10], and the different techniques are focused on accelerating the rate at which the curve morphs.

There are four sources of resistance to change, and all of the investigated techniques derived their solutions based on these four sources [11]:

1) Cognitive resistance: Results from individuals believes, based on experience,
2) Ideological resistance: The believe that the suggested change violates the individuals fundamental values, which they perceive to be projected in the organisation
3) Psychological resistance: Avoidance of attempting new things, thus resulting in the acceptance of low levels of tolerance for uncertainty, discomfort and ambiguity by individuals;
4) Power-Driven resistance: The morphosis of psychological resistance, which results in perception of loss of power.

Goldratt indicated four drivers which people draw conclusions upon based on the perceived consequences of change and they were coined the following terms: Pot of Gold, Crutches, Mermaid, and Alligator as explaind below [12]:

1) Pot of Gold:
   • The pot of gold depicts the perceived accomplishments that resistors stand to gain by changing;
   • People have varying perception about what the pot of gold is; hence change managers should ensure that they communicate clearly and that their message is not subject to misinterpretation.
2) Crutches:
   • Indicate possible risks resulting from change;
   • Reengineers should communicate the potential risks to mitigate the distribution of incorrect information through the "grapevine".
3) Mermaid:
   • Current benefits that resistors are enjoying with the status quo, and resistors are often scared to change in order to save their mermaids. It should be stated that resistor might not even necessarily possess mermaids, however they could be suffering from learning anxiety, where they think that learning new things will make them incompetent.
4) Alligator:
   • Indicates the dangers of maintaining the status quo;
   • Reengineers must ensure that the potential risks associated with continuing with "As-Is" processes are exploited to reveal the

importance of the proposed changes.

Goldratt's technique is user friendly to junior level reengineers as they might not have sufficient experience in identifying behavioral traits of multiple individuals in a given short period of time. Hence the technique provides a guideline to identify the type of resistance that the reengineer might be faced with.

III. CASE STUDIES AND FINDINGS

Data used in the current paper is based on case studies. Positive and negative outcomes of the cases where utilised to develop BPRM. Four business cases dealing with reengineering across different industries where investigated, where 50% of the cases analysed were reengineering successes. The selection of the cases was based on the utilisation of reengineering aspects that the organisations took into consideration when implementing the initiatives.

A number of successful reengineering initiatives result from the absence of resistance during the implementation of the initiatives. This is particularly evident in the Accounts Payable Case Study, where the automotive company Ford conducted a reengineering exercise. The lack of resistance in this case resulted from the fact that only a single department was being reviewed, and the changes were implemented using a power-coercive strategy, which was suitable for the initiative. However in most instances than not, reengineering initiatives have an impact on a number of departments, if not all of the in the organisation. It is in these circumstances that resistance to change from a number of stakeholders manifest itself.

Table 1 indicates both successful and unsuccessful reengineering findings deducted from the case studies:

I. TABLE 1:
Case Study Findings [13] [14] [15] [16]

Successful Initiatives	Unsuccessful Initiatives
Kept stakeholders informed through constant feedback	Lack of due diligence when reviewing processes and technology
Stakeholders were involved in decision making	Focused more on tasks as opposed to processes
Intense training to ensure smooth transition from "As-Is" to "To-Be" processes	Lack or absence of radical redesign in "To-Be" processes
Monitoring of the different phases of the transition curve	Automation of "As-Is" processes, as opposed to automation of reengineered processes
Effective communication through the entire process to minimise circulation of incorrect information through the grapevine	Organisational headcount not reduced, and no dramatic improvements exhibited

IV. CONCLUSIONS

Recommendations based on the case studies analysed as well as potential further studies are discussed in the current section.

A. Recommendations

Organisations partake in reengineering for a number of reasons as indicated below:

- Organisations seeking to be at the forefront of in their industries,
- Organisations seeking alternatives of conducting business;
- Organisations in need of radical transformation or they will go out of business.

It is advised that organisations should be proactive and initiate reengineering instead of being forced to change by market conditions, because reengineering requires due diligence as it have a number of risks such as the loss of time and money.

A common trend arises from the analysis of literature and cases with respect to successful reengineering endeavors and that is, planning and communication. Below are nine steps proposed for effective reengineering, and they form the core of Business process Reengineering Management (BPRM):

1) Conduct a RACI [18]:

Ensure that the roles of individual in management are clearly understood. This is important as some redesigned processes could potential impact senior management negatively but making their functions obsolete. Once the roles have been clearly defined and understood, ensure that you know who is accountable for delivering what, and this is particularly important for external reengineering consultants, because the roles and responsibilities could possibly prove to be problematic in the future. In whatever is being done during this process, one cannot make assumptions; hence consultation is emphasized in order to develop a concrete database. Finally inform all relevant stakeholders of the investigated roles and responsibilities, accountability terms, and ensure that you've consulted all relevant stakeholders.

2) Develop the SMART Criteria [18]:

Ensure that the intended changes are clearly specified, as the identification of processes will partly depend on the changes specifications. The specified changes should be measurable, because the progress of the initiative will be measured against these specified measurable changes. All relevant senior management's buy-in should be received at this point, in order to avoid resistance to change by senior management in the latter stages of the initiative. Management's objectives should be realist for a given timeframe, and if either the objective or the timeframe is not plausible, then it is imperative that such issues be addressed at this stage.

3) Develop a Process Mapping Methodology:

Based on the organisation's strategy, which is supported by the organisation's vision, conduct a process visualization exercise, and identify the organisation's core processes. Upon the selection of "As-Is" processes to be analysed, have a number of sessions with all affected stakeholders, and analyse the root causes of the existing processes. It is at this step that BPRM separates itself from BPR. BPR assumes that "As-Is" are fundamentally wrong, and they need to be redesigned, but this assumption is not universal and can be incorrect. However BPRM proposes that during this step intensive sessions with affected stakeholders should be conducted, not only to identify problematic core processes

and redesign them, but rather to improve on core processes where considerable results could be achieved, while also redesigning processes which need to be redesigned. A feedback mechanism plan for process mapping is important, in order to reevaluate processes that have been improved, while also gauging the progress of "To-Be" processes. It is also during this step that Information Technology (IT) personnel should be brought on board, as they could shed some light on possible limitations, as well as IT features that could be exploited during the initiative. However constant communication is necessary to ensure that (IT) should support "To-Be" processes, and not force "To-Be" processes to conform to IT packages.

4) *Fail Safing (where applicable)* [14]:

The fail safing method is not applicable to all industries, because some industries do not deal with defective items/components e.g. contact center industry. However where applicable the method can be adopted, as this methodology has been tested across a number of industries, and still found to be viable. The fail safing steps are [14]:

    i. Identify defect,
    ii. Identify root cause of the defect,
    iii.   Develop alternatives,
    iv.   Select most feasible alternative;
    v. Create a plan for fail safing.

5) *Identify Resistors:*

It is important to understand the type of people that the change is being imposed upon, as different people have different resistance to change attributes.

When dealing with organisation's, Goldratts's change matrix can be adopted, as it enables one to identify each individual's likes and dislikes about the change, and that in turn will provide the organisation with some indication of the type of resistors are being addressed.

6) *Adopt a Change Management Strategy:*

Once the type of resistors have been identified make use of the Pareto (80/20) principle [19] to weigh the amount of resistors you are dealing with versus the level of impact/severity that each group possibly has on the outcome of the initiative. Thereafter adopt a suitable change management strategy e.g. Empirical-Rational, Normative-Reeducative, etc [20]. However it should be noted that as organisations are contextual, one might need to use a meta-strategy, which is a combination of the primary strategies indicated above.

7) *Provide Constant Feedback:*

Communicate the progress of the initiative in order for the stakeholders to gauge the effectiveness of the initiative, as well as recognise the level of commitment that both management as well as employees have on the initiative. This will serve as a feedback mechanism to indicate whether the initiative is succeeding or not.

8) *Monitor the Transition Curve:*

When transition is taking longer than it should, refer back to the feedback mechanism in order to ensure that processes are doing what they should be doing, and also adjust where there might be problems.

9) *Notify Relevant Stakeholder upon Completion:*

A reengineering initiative can be viewed as a project, thus should terminate at some point. It is important to notify

relevant stakeholders of the termination of the initiative for the following reasons: (i). People tend to drag projects once they get attached to them, and that in turn could lead to capital waste. (ii) Gives the organisation an indication of whether it has achieved its objectives. (iii) Allows Business Process improvement (BPI) to be implemented, and refine BPR.

B. *Further Studies*

Although case studies provide fertile ground for data analysis, one major barrier that they have is, they are highly contextualized. Hence some organisations in other industries or within different companies in the same industry might not necessarily experience the advantages and disadvantages of the organisations that reengineered their processes. Thus a point of further investigation could be to identify common traits for both successful and unsuccessful BPR initiatives in a single industry and then devise a generic strategy where the BPRM could yield optimum results.

The Private and Public Sectors are urged to adopt BPRM for pilot projects, and further case studies could be analysed to test BPRM.

One final note is that other scholars argue that BPRM initiatives cannot be implemented in the Public Sector, as it will potentially reduce the organisation's headcount, which in turn could be used by opposition political parties to recruit supporters. BPRM on the other hand caters for such circumstances and encourages constant feedback, incremental process improvements during the reengineering initiative, and promoting human development which can be viewed as equipping employees with more skills, thus making them more marketable. It is due to these potential BPRM advantages that further studies could be carried out to investigate the plausibility of implementing (BPRM) in the Public Sector.

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