Knowledge Management Applied To Business Process Reengineering

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Abstract. The purpose of this paper is to highlight the role of knowledge management (KM) as a critical factor for the business process reengineering (BPR) success. It supports the theory that the knowledge management can supply the dynamic necessary to stimulate successful reengineering and minimize the failure rate and its sources. Implementing KM strategy in reengineering projects will lead to better outcomes, building the support for long-term success into the design of business systems and processes.

Keywords: lean, manufacturing, reengineering, knowledge management

1 Introduction

Dynamic technologies development and shorter product life cycles are a fact of business. Companies' competitiveness depends on customer oriented transformations, embedded in operational processes and business systems. The need for constant change requires innovative strategies and tools.

BPR is a management tool which became popular together with the generic process management philosophy of lean manufacturing. They represent a vehicle to develop company efficiency and customer satisfaction. Lean processes and BPR both stand for doing more with less and eliminating wastes. Things that are not of value to the customer are considered wasteful and eliminated where possible.

The significant rate of failure of BPR projects is a source of concern. Recent research posits that the ongoing strategic development of reengineering requires a new dynamic impetus [1]. Implementing KM strategy is believed to make the needed impact.

2 The Concept of Lean

Lean Manufacturing is essentially a repackaging of the Toyota Production System (TPS) [2]. Most of the philosophy and tenets, as well as the methods, techniques, and tools of Lean are all found within TPS.

Lean thinking is lean because it provides a way to do more with less –

less human effort, less equipment, less time, and less space – while coming closer to providing customers with exactly what they want [3]. In terms of lean manufacturing, anything that does not directly add value to the product is inefficient [4] (waste). To make it more clear what is considered as wasteful, we have to explain what the term value means. Valuable work is the work that the customer really thinks is worth paying for (the product). In every particular operation there is an element which is value-creating. Actually, only this element we can call work, and everything else is called motion. In its nature, motion is considered to be wasteful. Every part that is not being worked on is a sign of inefficiency [4]. Toyota has basically split the waste into seven types: overproduction, operators waiting, excess transport, overprocessing parts, unnecessary inventory, unnecessary operator motions and defects.

The concept of lean brings up new needs. In order to achieve these needs, a company has to establish new strategy. In order to improve current performance it usually has to redesign elements of its production system. Lean manufacturing approach offers tools for reduction of waste of resources.

3 Reengineering as a Tool

Business process reengineering has become a viable way of implementing lean structures. The concept at the core of the BPR is the need to stay competitive. This is achieved by a systematic, disciplined improvement approach.

Business process reengineering is formally defined as the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements [5].

In order for a BPR project to be successful, a few shifts of concept have to be made. Thanks to decades of custom and practice, most people are predisposed to task-based thinking. Business process reengineering establishes the premise that none of the individual tasks matters if the overall process is not working. Rather than defining problems, people should possess the ability to recognise opportunities and powerful solutions. This requires the shift from deductive to inductive thinking.

It is important that a BPR team does not take anything for granted. Part of understanding a process is not to accept the existing output as a given, or "known good". This is sometimes referred to as the shift from an analytical to a synthetic way of thinking.

4 The Power of Knowledge

Business process reengineering is complex and challenging. Many organizations are trying to switch over to knowledge management and develop a knowledge management strategy, often alongside ongoing BPR. Knowledge is the capability of choosing the rational action for a certain purpose [6], and it is a major asset to a company if managed properly. The purpose of this paper is not to promote the advantages of knowledge management strategy, but to map the use of it *within* the business process reengineering.

4.1 The Nature of Knowledge

Knowledge by itself is of little use. It can be manipulated to become valuable asset. Knowledge has to be capable of being identified, acquired, applied and stored for later use in order to be considered a competitive advantage. It is often sub-categorised into two forms, explicit knowledge and tacit knowledge. Explicit knowledge can be easily articulated and transferred to others. Tacit knowledge, is personal knowledge residing in individuals' heads or built into the working practices of the business over time. It is relatively difficult to articulate, codify and communicate [7].

4.2 Knowledge Management Strategy

Successful reengineering project can benefit from a knowledge management strategy. Such a strategy can outline goals, identify and clarify change needs, and provide a suitable way to respond to them. Organisations typically pursue five different knowledge management strategies: KM as business strategy, intellectual asset business strategy, personal knowledge asset responsibility strategy, knowledge creation strategy and knowledge transfer strategy [8].

4.3 Knowledge Management versus Business Process Reengineering

According to Bergeron [9] knowledge management is best applied in times of stable processes and as a follow-on to a reengineering effort, not as a parallel process, because a KM initiatives typically involve documenting and sharing information about what is, whereas process reengineering is about designing what should be.

Process reengineering is concerned with benchmarking and best practices, implementing alternative business models and process optimization. The goal is to increase corporate competitiveness by eliminating non-value-added steps, copying the methods of successful companies, and reducing unnecessary employees through intelligent downsizing.

KM, in contrast, is about documenting and sharing practice through activities such as: knowledge audits (determining exactly what intellectual capital exists in the company at a given point in time), collaboration, communities of practice, knowledge mapping, mentoring, etc. This is commonly existing practice, but can include development of new knowledge through the constructive interactions that come from knowledge sharing and communities of practice

Bergeron [9] also posits as a fact that many KM initiatives fail because KM is performed in parallel with BPR initiative. The purpose of this article does not contradict this opinion as such. KM should not be applied as a parallel process. The greater opportunity arises where KM is implemented within the BPR process.

4.4 Knowledge Management within Business Process Reengineering

To deliver successful reengineering projects, a company has to possess precise and deep knowledge about the processes it wants to change. To submit all of

the high-level processes to reengineering simultaneously is not possible for even the most radical of organisations. The business, after all, has to sustain itself as a going concern whilst change is implemented. Aspects of knowledge management strategy offers a good way to identify which processes should be prioritised in reengineering. If the objective of BPR is elimination of value-added steps, a clear idea of where value arises within the business is a precursor for effective implementation and eventual success. The ability to produce high value change in even end-to-end process development is questionnable when the manager does not understand how value is implemented. All too often, the value chain depends on knowledge rather than the overt physical processes or infrastructure. These typically attract first attention, as they are the easiest targets in BPR. A fully effective project will start with a knowledge audit (of which there are various forms, often sourcing information from informal interviews across the company hierarchy) to determine both the intellectual capital that exists in the company, the knowledge value nexii, and the processes which drive the value chain. This may be followed by evolution of the KM strategy.

There is another example of the way KM benefits BPR. It can make a contribution to reengineering development by enabling the move from solely analytic to synthetic thinking and understanding [1]. It is known that knowledge consists of both scientific and social constructs. Applied to the business, this point of view legitimises the acceptance of a wider variety of factors in analysis of business processes and promotes holism rather than simply "fact" based thinking [10].

KM includes a set of tools, such as social network analysis, gatekeeper theory, knowledge audit, process mapping and optimisation, knowledge asset deployment, knowledge sharing improvement, informal network planning, communications design, development of networks of excellence and communities of practice, and succession planning. A number of these are shared with conventional BPR. The ability to tailor knowledge processes as part of business change offers real opportunities to improve the outcomes of BPR.

Understanding how tacit knowledge has shaped and is embedded in the baseline position prevents the fundamental mistake of reorganising out experience, expertise and essential evolved processes. It allows the organisation to plan staffing changes, developing the human resource base for the best exploitation of established tacit knowledge value. Succession planning, staff development and training can ensure good practice is retained, and, with care, help also to eliminate waste built into routines and established rituals of behaviour.

4.5 Social Network Analysis

Conventional BPR will involve the physical reorganisation of staff offices. This is usually on the basis of functional analysis, organising the workspace to situate individuals whose process inputs and outputs align within the process map physically close together. The concept is that of minimising unecessary transit time between colleagues, whether in personal consultation or of objects (forms, paperwork, etc.) This is less relevant than in the paper-driven offices of the 1960's. The growth of the paperless office, the increasing importance of document image processing, the development of virtual presence, and video

communications with collaborative software suites (of which Webex and Oracle Collaboration Suite are well-known, more or less integrated, examples), reduces the dependence on physical location.

Social network analysis is a knowledge management tool which has the objective of improving the growth of tacit knowledge within the company. This is achieved by looking at the broader relationships and interactions between individuals and their perception of who they work with most importantly in the delivery of their role. There will be a close correlation between functional and social network analysis outcomes in hierarchic, rules-driven businesses. There will be major variations in organisations working on the modern project-orientated model. Used properly, the approach can provide indications of suitable interventions and activities to improve communications as a whole within the organisation, and particularly in specific areas where the business perceives difficulties in operation [11].

5 Conclusions

KM and BPR are complex research areas. There are inevitable overlaps in the tools used, notably process mapping and the various methodologies used with the process map. Whilst it is quite possible to use the tools of knowledge management within a BPR approach, there are merits in the broader understanding KM techniques (even KM strategy) can offer: the social nature of work; the need to ensure the fruitful development of tacit knowledge; identification of where value lies in the business to prioritise business development; and the acceptance of the importance of implicit knowledge in processes.

Built into business change, implementation of KM strategies in the BPR domain can help to minimise the failure sources.

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