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16 March 2008

Online at <https://mpra.ub.uni-muenchen.de/7794/>
MPRA Paper No. 7794, posted 16 Mar 2008 17:15 UTC

The Need of Knowledge Management Strategy for the Successfully Implementation of Reengineering Projects

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Abstract

This paper want to shown that current knowledge management approaches do not emphasise enough on knowledge sharing from reengineering project perspective.

To achieve success with reengineering project, an organisation must possess and share knowledge about many different facets of this process. While many reengineering projects have resulted in improve performance, we believe that higher levels of performance improvement are possible by coupling IT capabilities with KM strategy. To explain these results it was assumed that the key to implementing with success reengineering project is having a wide knowledge management strategy.

Our objective for the paper reported here was to understand the factors that motivate to share knowledge before implementing any knowledge management strategy to sustain the successfully implementation of reengineering projects.

Keywords: IT, knowledge, knowledge management, strategy, reengineering, project

1. Introduction

Reengineering is a management tool that became popular in the late 1990s and still go on.. Like many such tools, it aims to cut costs while at the same time increasing productivity and providing higher levels of service. And while all this is true, reengineering still offers companies much more. The concept that is at the heart of all reengineering projects is the need to stay competitive in today's business world, and this broad concept involves costs, quality, productivity, and a host of other business elements. All of this is achieved by taking drastic steps to radically change an organization in areas like staffing, technology, and office culture.

When a business decides to reengineer, it often does so as a last resort because previous efforts to change have failed. The situation has become serious enough that drastic measures must be taken. When this decision is made, the company must first determine what the problems within the company are and what needs to be done about them. When this is determined, a basic

reengineering model is developed. Next, the company's core processes are discussed and redesigned. The final stage is to adopt the new design.

While this seems like a simple plan, recent studies suggest that between 50 and 70 percent of reengineering projects ultimately fail within their first five years. This is usually the result of a faulty new design or the inability to implement one once it is created. Lack of support from management and employees also contribute to this surprisingly large rate of failure.

With such a high rate of failure, it is curious why reengineering still exists as a management tool. Before totally condemning it, the main reasons for reengineering failures should be examined further.

Most reengineering projects fail because of a lack of support from upper management. While they are usually the ones who initiate the reengineering effort, they often fail to back it up because the changes are so great. Without proper management support, the necessary tools for a successful reengineering project (including money, leadership, and resources) may not be available.

Once the support from management becomes evident, the managers should keep the lines of communication open and honest so the necessary changes can successfully take effect.

A lack of strategy is another reason why reengineering fails. Before the project is undertaken, a lot of soul searching must be done within the organisation. This most often requires that a simple, concise, business case study of the organisation be written that identifies the problems, the goals of the reengineering effort, possible solutions, and how much time, money, resources, and people are needed for the project. This is a very important step in an reengineering project and if it is not done properly the results will almost certainly point to failure.

2. Knowledge as a part of management and development.

Because reengineering of an organisation it's a real challenge, many organisation are now looking to knowledge management (KM). Such initiatives are often started with the development of a knowledge management strategy.

The first and perhaps most difficult of launching a knowledge management strategy is to put in place a program for understanding and sharing knowledge.

1.1. The role of knowledge

Knowledge is the capability of choosing the rational action for a certain purpose [4], and it has become an important component of competitiveness and a nation's economic development. Organisations are becoming aware and are capitalising on knowledge in form of patents, processes, management skills, technologies, information about customers and suppliers and core competency experience. Valued knowledge is an organisation can be used to create differential advantage and affect an organisation's ability to remain in the new marketplace economy. This suggests that information sharing and knowledge management both within the organisation and across external

entities are prerequisites for achieving agility. An agile organization uses knowledge about its internal and external environment to alter its routines, processes, and resource configurations.

Internal knowledge of the firm refers to product and process specifications and capabilities, technology capabilities, inter-operability, reconfigurations, organisational culture, employee skill sets and leadership. The external knowledge refers to the knowledge of markets, competitors, technological trends, changing consumer preferences and others. It also refers to the knowledge present in other players in the marketplace and other collaboration mode acquires the knowledge for its own use.

In section 1.2, we investigate how knowledge and IT enabled knowledge management can help achieve reengineering projects.

1.2. IT capabilities of managing knowledge and implement of reengineering project

The importance of the role of IT in knowledge management has been widely recognised [1], [5]. The knowledge by itself is of little use unless it can be identified, acquired, manipulated, applied and stored for later use. Technology can accelerate the path to implementing reengineering projects by making available digitised knowledge to executives through the use of technologies such as intranets, databases, knowledge repositories, virtual video conferencing systems and collaborative tools [2] for knowledge sharing. Also information technologies provide functions for knowledge acquisition, retention, retrieval and application. The functions of information systems, such as providing electronic repositories to store knowledge, offering effective information retrieval mechanism and facilitating collaboration and communications between knowledge producers (experts) and knowledge seekers play important roles in improving absorptive capacity of an organisation.

Researches in the knowledge management [3], [8], identify four major capabilities of IT that positively contribute to the absorptive capacity of an organisation:

- knowledge acquisition capability - *capability of IT that can quickly identify, acquire and maintain useful knowledge from multiple sources;*
- knowledge distribution capability - *refers to the fact that IT can distribute knowledge to knowledge consumers;*
- knowledge identification capability - *describes the function of IT that can effectively retrieve knowledge stored in knowledge repositories or identify the source of expertise;*
- Knowledge upgrade capability - *refers to how effectively IT can upgrade knowledge and drop irrelevant knowledge.*

These IT capabilities of managing knowledge are crucial in obtaining and maintaining high quality knowledge. IT that is well-designed for managing knowledge can facilitate capturing

diverse knowledge needed by the organisation, remove irrelevant knowledge from knowledge repositories, and make knowledge more accessible and usable to knowledge users. Therefore, IT capabilities of managing knowledge also affect knowledge quality within the organisation.

To successfully implementation of reengineering projects we need before of all, knowledge tools that help anticipate changing market dynamics, adapt to these dynamics, and accelerate organization change faster than the rate of change in the market place [12]. Various IT tools are available to help improve knowledge quality and effectively acquire, distribute, apply and upgrade knowledge. Table 1 illustrate IT technology that can improve knowledge quality.

Table 1 – IT for Knowledge Quality

Knowledge Quality	KM Technology	Sample Knowledge Management Tools
Knowledge Diversity	Community of Practice	Knowledge Repository Forums/Networks
Knowledge Reusability	Knowledge Base	SharePoint (MS) Goldfile Lotus Notes/Domino

Knowledge reuse focuses on using old knowledge to solve new problems. A knowledge base containing existing (internal and external) knowledge is the most desirable end-product of computing [9]. It is also one of the most difficult challenges. Table 2 provide IT tools that can support the four dimension of knowledge management.

Table 2 - Mapping IT capabilities to Knowledge

IT Capabilities	Knowledge Management Technology	Sample Tools
Knowledge Acquisition Capability	Knowledge Capture (elicitation + representation) Business Intelligence	Natural Language Computer Vision Human Computer Interface Database Data Warehouse Document Management Enterprise Resource Planning
Knowledge Distribution Capability	Sharing Knowledge (communication/collaboration) Network	WWW e-mail/ voice-mail BLOG/WIKI/Workflow Notes/SharePoint Business Portals Mobile Computing
Knowledge Identification Capability	Case-Based Reasoning Knowledge Discovery Data Mining Knowledge Based Systems	Help Desk Customer Relationship Management Expert Systems Reuse of Libraries Search (Goggle, MSN, Lycos) Benchmarking
Knowledge Upgrade Capability	Business Intelligence Intellectual Property Alliance and Partnering	Patents, Licenses Concept Mapping

The first column depicts the four dimensions, while the second column offers the type of technology that supports each dimension and the last column provides same sample tools available in the market for each type of technology.

For example, knowledge acquisition can be supported by any type of technology that allows elicitation and representation of business intelligence. An IT scenario allows users to exchange documents and information across technical system boundaries. Knowledge Management contains the tools to integrate different data sources and to create, administer, and distribute information. It allows consolidation and integration of intranet platforms and makes available integrated search technology that takes into account all data stores in company.

An organization which cannot assimilate the new technologies of the processes and activities done on the inside cannot pass to reengineering. Depending on the reengineering project stages and on purpose, a wide range of informational technologies can be used (*see Table3*).

Table3 – IT for Reengineering Project

Reengineering Project Stages	Objectives of the Reengineering Project Stages	Recommended Informational Technologies
1. Identification of the problems	-diagnosis of problems through the statistics analysis method of the data bases; - Reflection upon the organisation's economical - financial situation.	Oracle E-Business Suite, Enterprise Resource Planning, Executive Support Systems, Customer Relationship Management, Total Quality Management
2. Reverse Reengineering	-studying the processes and the activities that function in an organisation	Functional-oriented modelling methods: ARIS Toolset, Business Engineer (SAP), Dynamic Organisation Modeler (BAAN).
3. Direct Reengineering	-making the models of modern organisation of processes and activities	Business Process Outsourcing, Extended +BPR, BPSimulator, ProcessModel
4. Accomplishing the reengineering project	-establishing the processes and/or the activities which need to be redesigned according to the criteria of disfunctionality, importance and feasibility; -establishing the order of modification.	CASE, RAD, Oracle Designer, ARENA (Process Analyser), Supply Chain Builder, Planning Workbench, programming languages: Visual C++, SIMAN, Visual Basic, LISP, etc.
5. Project Implementation	-stage-project implementation of the project depending on the priorities established; -analysis of accomplishing the pre-established criteria.	Instrumental modalities for monitoring: FileNet systems (for e-documents, images and workflow), Performance Process Management

To apply the informal technologies in reengineering requires inductive thinking, that is, the manager's ability to realise, firstly, that there is a solution which a radical impact and then, to look for the problems which could be solved. The real power of the technology isn't given by the fact that it can make the old processes work better, but by the fact that, it allows the organisation to surpass the old rules and create new working ways – that is passing to reengineering [11].

3. Developing a KM strategy

To be successful, a reengineering project needs a KM strategy. This strategy must do more than just outline high-level goals such as 'become a knowledge-enabled organisation. Instead, the strategy must identify the key needs and issues within the organisation, and provide a framework for addressing these.

A full reengineering project might start with an audit, followed by the evolution of a knowledge management strategy leading on to the development of a complete architecture and the ultimate implementation of a complete programme supported by a tailored technological solution.

Hansen, Nohria and Tierney [6] argued that you need to start by identifying what kind of organisation you have and what your information needs are, and then primarily focus either on a "personalisation" strategy (putting up infrastructure such as Communities of Practice to help people find each other and tap rich contextual information from other people) or a "codification" strategy, where information is identified, codified, and stored for later retrieval in some kind of effective information store. So, how do you start developing a KM strategy?

- Start with the business problem and the business value to be delivered first.
- Identify what kind of strategy (codification or personalisation) to pursue to deliver this value and address the KM problem
- Think about the systems required from a people and process point of view
- Finally, think about what kinds of technical infrastructure (e.g. IT systems) are required to support the people and processes identified above
- Implement the systems and processes with appropriate change management and an iterative staged release.

This section provides an approach for developing a KM strategy that focuses strongly on an initial needs analysis.

There are a number of common situations that are widely recognised as benefiting from knowledge management approaches. While they are not the only issues that can be tackled with KM techniques, it is useful to explore a number of these situations in order to provide a context for the development of a KM strategy. Beyond these typical situations, each organisation has a unique environment, defined by factors such as:

- purpose and activities of the organisation
- overall strategic direction
- organisational culture
- size of the organisation
- staff skills and experience
- organisational history
- available resources
- marketplace factors

For this reason, each organisation has a unique set of needs and issues to be addressed by knowledge management. It is easy to jump into 'solutions mode', recommending approaches such as communities of practice, storytelling, content management systems, and much more. While these approaches may have widespread success in other organisations, they will only succeed in the current environment if they meet actual staff needs.

When developing a KM strategy it sure helps to have a checklist of key issues.

- Do we support dialog and encourage conversations or capture & organise explicit content?
- Should we focus on knowledge *areas or refining process and embedding practices*?
- Will we be *technology* push vs. *culture* led?
- Is our core driver *process or practice*?
- Should we be driven by questions (exploration) or by sharing what and who we know?
- Do we believe in *personalisation or codification*?
- Should we attend to *explicit or tacit* knowledge?
- Can ignore knowledge assets and intellectual capital and focus on innovation and knowledge creation?
- Is our focus *external* (customers and competition) vs. *internal* (communities and processes)
- Do we start with data mining *existing information* or create *new knowledge*?

Each approach for developing a knowledge management strategy is supported by a holistic model of KM processes and can be classified into two main approaches:

- Top-down - the overall strategic direction of the organisation is used to identify the focus of the knowledge management initiative. This is reflected in a series of activities designed to meet this broad goal.
- Bottom-up - research is conducted into the activities of staff involved in key business processes. The findings of this research highlights key staff needs and issues, which are then tackled through a range of knowledge management initiatives.

Each of these approaches has its strengths, and in practice, a success KM programme must encompass both [13].

This paper does not view knowledge as a technology issue alone. Therefore, there are important elements of a knowledge management strategy which are about:

- connecting people with people
- connecting people with information
- Enabling conversion of information into knowledge.

Technology does play a role in assisting with important elements, but it is not the sole driver of a knowledge management strategy for implement a successful reengineering project.

The development of approaches for capturing, sharing and effectively using knowledge requires an appreciation of how tacit and explicit knowledge is created, captured, shared and used in an organisation.

Based on these assumptions, we have developed the main components of the knowledge management strategy. We believe the methodology allows for a streamlined approach to ensuring that the knowledge management strategy will meet our reengineering project required outcomes and importantly:

- provide the means by which the right knowledge is deployed at the right location, at the right time, and is effectively used to provide winning, value added and solution to the reengineering project;
- deliver on R&D manager to implement a success reengineering project;

For developing a knowledge management strategy we think it is necessary to have a people plan and a technology plan, each of them with own key tasks and deliverables.

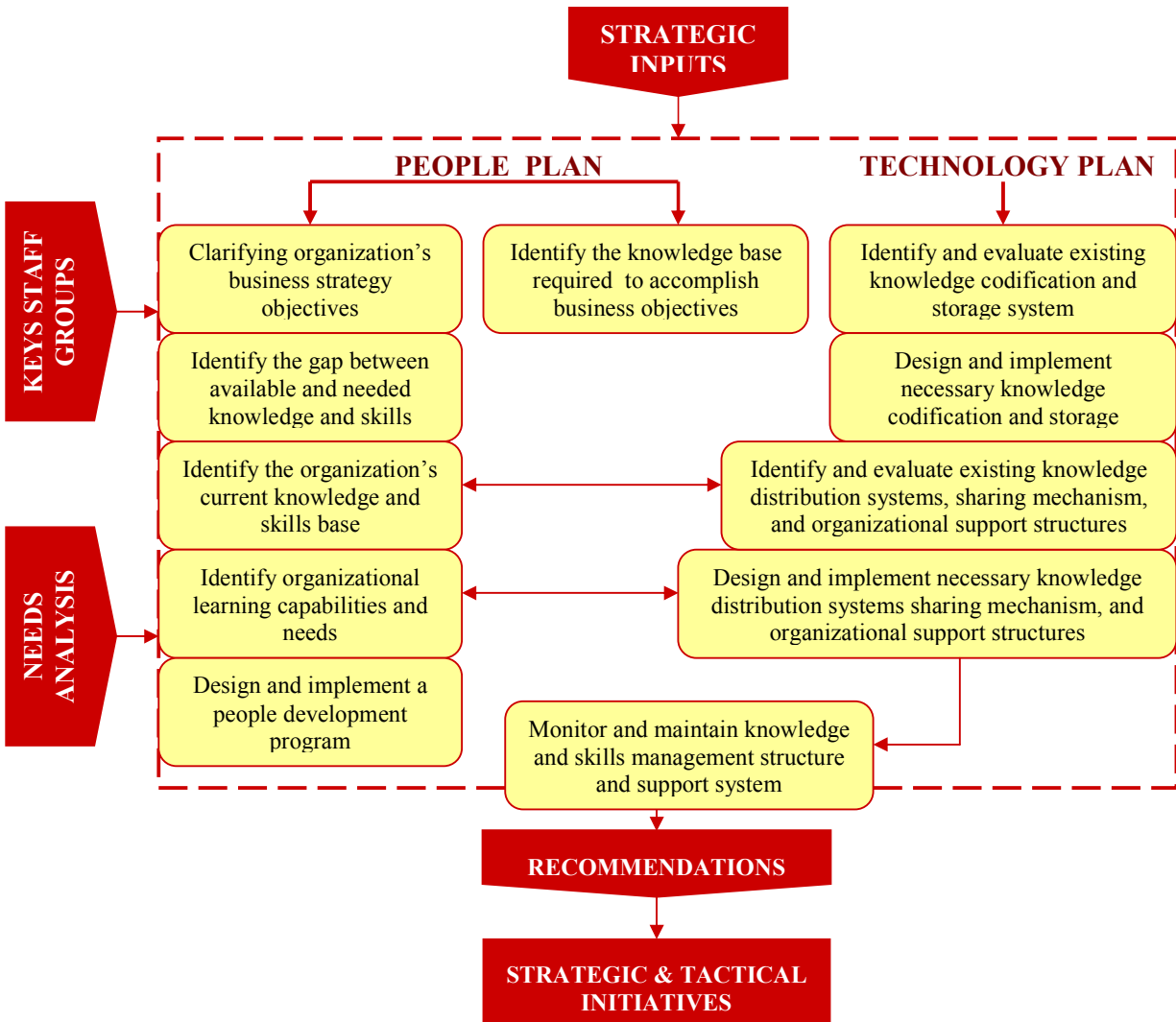


Figure 1 – Methodology for developing a knowledge management strategy

The approach to developing a KM strategy outlined in this section provides a number of major benefits:

- Holistic - The focus on needs analysis will identify a wide range of issues and requirements. Some will be organisation-wide, while others will be specific to individual business units or job roles. The use of a range of needs analysis techniques will identify: cultural issues, key business needs, duplication of effort, inconsistencies in practices, inefficiencies in business processes, opportunities for improved policies or procedures, major business risks, and much more;
- Solution-independent - The approach used to develop the knowledge management strategy makes no assumptions about the solutions that might be implemented. As such, the approach is independent of any technologies implemented, or knowledge management techniques applied. Instead, the approach is to identify the need, and then determine the solution.

Not even an organisation can submit all its processes to reengineering, on a high level and simultaneously. Once the management through KM strategy, had identified the processes and the activities subject to the reengineering, these are being represented on a process map. The next step is represented by the decision upon those which require reengineering and the order in which these must be approached. Generally, the firms use three criteria which should help them in the foundation of the reengineering decision:

- The disfunctionality criteria: Which processes are in the most difficulty?
- The importance criteria: Which processes have the greatest impact upon the firm's clients?
- The feasibility criteria: Which of the organisation's project are ready for a successful redesign?

5. Conclusions

To achieve success with reengineering project, an organisation must possess and share knowledge about many different facets of this process. While many reengineering projects have resulted in improve performance [7], [10], we believe that higher levels of performance improvement are possible by coupling IT capabilities with KM strategy. To explain these results it was assumed that the key to implementing with success reengineering project is having an wide knowledge management strategy. The paper's contribution includes its method for exploring the ways in which a good methodology for developing a knowledge management strategy can contribute to successful implementation of reengineering project.

Respecting the role of knowledge and learning may be the most effective approach to building a solid and enduring competitive foundation for business organisations. Firms can derive significant benefits from consciously, proactively and aggressively managing their explicit and explicable

knowledge. Doing this in a coherent manner requires aligning the firm's organisational and technical resources and capabilities with its knowledge strategy. It requires mapping the firm's organisational and technical capabilities and constraints to its knowledge processing requirements. It may require significant organisational and technical interventions.

To summarise these findings, organisations that managed knowledge for implementing reengineering project, effectively:

- understood their strategic knowledge requirements
- devised a knowledge strategy appropriate to the firm's business strategy;
- implemented an organisational and technical architecture appropriate to the knowledge processing needs of the organisation; enabling them to
- apply maximum effort and commitment to creating, explicating, sharing, applying, and improving their knowledge.

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