A Practical Approach To Implementing Knowledge Management

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ABSTRACT:

To successfully leverage corporate knowledge organizations should implement knowledge management (KM) strategies that enable them to capture, share, and integrate knowledge within their environments. As markets shift, uncertainty often occurs, technologies may proliferate, competition may increase, and products and services often become obsolete. Companies need to create and capture corporate knowledge, quickly disseminate it, and integrate it with new products and services. This paper provides an easy step-by-step process to implement knowledge management with the following key elements: knowledge management team, knowledge management strategy and business case, knowledge assessment and audit, information technology (IT) assessment, and project plan and measurement systems. This paper provides some best practices, common pitfalls, lessons learned and key success factors throughout the implementation process.

Keywords: Knowledge strategy, Knowledge assessment, Best practices, Success factors, Lessons learned

Introduction

Knowledge management (KM) can provide opportunities for achieving substantial savings, significant improvements in human performance, and other competitive advantages. Some companies that have already embarked on a KM program have benefited in a number of ways including: enhanced collaboration, improved communication, improved employee skills, better decision making, and increased innovation (Jennex, 2007). Buckman Labs is an example of a success story that significantly increased sales of products that are less than five years old from 14% in 1987 to 34.5% in 1996 through its global KM effort (Buckman, 1998). Another success story is Schlumberger who reported a first year savings of $75 million through its KM initiative by connecting technology centers and field workers (Roa, 2003).

Even though there have been many successful KM programs, there have been others that have failed in the process (Stankowsky, 2005). Some corporations have failed because of their approach used in implementing knowledge management. A number of articles and books have provided some guidance in implementation. Examples can be found in Levett & Guenov (2000), Tiwana (2002), Chua (2003), Knight & Howes (2003), Dalkir (2005), Gillingham & Roberts (2006), Chang & Li (2007), and Ricardo & Reyes (2008).   However these references have not provided an appropriate step-by-step process that can ease the transition when starting a KM program. Albers (2003)

paper provides a framework for implementing KM. An application of this specific framework is delineated in Whitmore & Albers (2006) and in Fenton & Albers (2007).

This paper seeks to improve upon the Albers (2003) paper based on the author's experience gained from an additional six years of teaching, consulting, and research in KM and it modifies the approach used in Albers (2003) paper. It includes some pitfalls and lessons learned, and provides some recommended best practices and key success factors for implementing KM.

Overall Approach

The decision to implement knowledge management can be a daunting task for companies that have no background or experience in KM. It is essential to have strong leadership support for KM to be successful. One first needs to understand KM is a systematic process for creating, maintaining and nurturing an organization for making the best use of knowledge to achieve a sustainable competitive advantage and/or high performance. From a simplified perspective, KM integrates people, processes, and technology. KM results in changing how the business operates and requires organizational mechanisms (incentives and policies) to change employee's attitudes and operation processes. Information technology (IT) is often used as an enabler for capturing, sharing, and integrating knowledge. The following guidelines based on best practices are useful in getting started and to increase chances of program success:

- ♦ Involve upper management to emphasize the systems importance

- ♦ Foster a cooperative environment for sharing knowledge

- ♦ Initiate polices that reward those who share knowledge

- ♦ Appoint someone to manage and update the system

- ♦ Make sure your employees get something from it

- ♦ Develop an information system that is easy to use

Other practices that companies have used to help them be successful are: knowledge sharing as a criterion in performance evaluations, promote a culture that is open to change, and encourage employees to communicate across functional boundaries (Daghfous, 2004).

A challenge in establishing a practical approach for KM is to develop some clear and definitive steps that are well explained and easily understood by someone with limited applicable training or experience. After working within the Albers (2003) framework for a number of years and doing additional research, the author of this paper recommends the following five step approach for implementation:

- ♦ Select knowledge management team

- ♦ Establish knowledge management strategy and business case

- ♦ Perform knowledge assessment and audit

- ♦ Perform information technology (IT) assessment

- ♦ Develop project plan and measurement systems

One of the first steps is to determine the key players in the organization who will lead the KM activity. This team then establishes the KM strategy and business case. The KM assessment, audit, and IT assessment is closely coupled to the knowledge strategy. The team will use these assessment results to develop a project plan and measurement system. After the initial project is completed the organization can capture lessons learned and prepare for the next steps in the KM activity.

Step 1 - Select Knowledge Management Team

An executive sponsor and/or a "knowledge champion" are key players needed on the KM team to advocate the program to management. A "knowledge champion" is the initial advocate of the program and works with the executive sponsor. In addition, a project leader (KM manager) needs to be identified, and is responsible for developing a knowledge strategy and business case. It is highly recommended that these individuals have some KM training and/or experience. Many larger organizations have appointed a "Chief Knowledge Officer" who builds a base of support at all levels of management and guides strategies and polices for the activity.

The team members should have a good mix of business knowledge, technical competence and social competence. Specific skills should include communication, leadership, negotiation skills, strategic planning, knowledge of KM methodologies and information technologies, and expertise in internal business processes. Team membership could include an interface design lead, training lead, technical architect, organizational lead, and the "super-user" (Robb, 2003). A "super-user" is a visionary who can influence the user community. Other KM roles that may be needed as the program develops include content editors, web developers, mentors, coaches, HR roles, knowledge navigator, and publishers.

Step 2 - Establish Knowledge Management Strategy and Business Case

The primary objective of any corporate KM program is to support the achievement of strategic business objectives (Hariharan, 2002). Therefore, the starting point for KM is to understand the organization's business strategies. The traditional strengths, weaknesses, opportunities, threats (SWOT) framework, provide a basis for a knowledge strategy (Zack, 1999). Firms need to perform a knowledge-based SWOT analysis to better understand their points of advantage and weakness. After mapping the firm's competitive position, an organization can perform a gap analysis. The gap between what a firm must do to compete and what the firm is doing represents a strategic gap. The gap between what a firm must know and what the firm does know is the knowledge gap.

The organization needs to identify the extent to which its existing knowledge is in alignment with its strategic requirements. From this analysis an organization can determine knowledge that should be developed or acquired. The knowledge requirements will define where to focus KM. The paper of AlAmmary & Fung (2008) indicates that the alignment between knowledge strategy and business strategy clearly influences organizational performance. KM activity should be directed at areas of strategic importance to the organization i.e. greatest value and solve business issues. Another way to identify where to start is to examine improvement initiatives underway or planned (Seeley & Dietrick, 2000). Some of these initiatives may be accelerated or improved through KM.

Another task needed before an organization undertakes a KM initiative is to establish a business case. A set of guidelines aimed at assisting knowledge champions in their efforts to successfully justify a KM program are given in Yelden & Albers (2004). Once knowledge opportunities have been identified, a cost benefit analysis needs to be performed. Skyrme (2001) pointed out that there are only three main areas on which to justify KM 1) asset value, 2) potential benefits and 3) cost effectiveness. When considering asset value, Skyrme recommends looking at market value, cost, replacement cost, and liability cost. When addressing benefits, it is important to look at both hard and soft benefits. Hard benefits are directly related to financial performance suchs as reduced costs, ROI, IRR, and profit. Soft benefits may include, but not limited to, any of the following: enhanced synergies among departments, accelerated innovation, increased teamwork, increased speed and responsiveness, increase problem solving, and process improvement.

Step 3 - Perform Knowledge Assessment And Audit

Many organizations use knowledge assessment and knowledge audit interchangeably. Most references in this area do not make a distinction between them. However, they have distinct differences. A KM assessment is an examination of the organizations health and effectiveness in using knowledge.

A knowledge audit determines and examines organizational knowledge assets including location, source, and utilization. An overview of KM assessment approaches is given in Grossman, (2006). A diagnostic tool for knowledge audits is given in Sharma & Chowdhury, (2007).

A good place to start a knowledge assessment is to determine the strengths and weaknesses in the organizations ability to leverage knowledge. One can examine the current situation in areas that "are working well" and areas that "are not working well" which corresponds to the enablers and obstacles to KM.

Knowledge assessment examines the organizational factors that influence KM which include culture, leadership, organizational intent, knowledge processes, organizational structure and technology infrastructure. The six organizational factors can help or hinder the knowledge management environment and are discussed in Albers & Jerke (2004) and illustrated in figure 1. The spider diagram in figure 1 is used to evaluate the

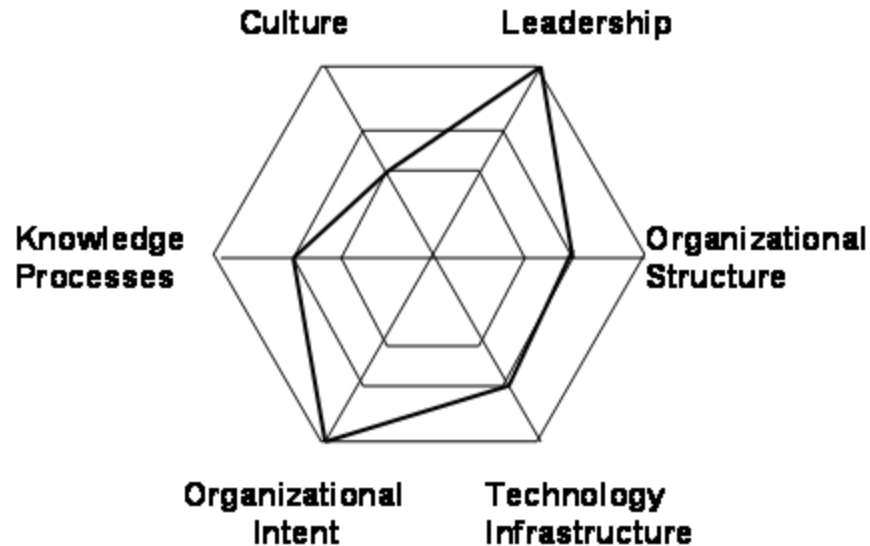health of each of the organizational factors. The farther out on the spider the more the factor supports KM.

Figure 1: Organization Factors That Influence Knowledge Management

Culture is one of the most critical elements in implementing KM. An ideal KM culture is characterized by trust, openness, teamwork, collaboration, risk taking, tolerance for mistakes, autonomy, common language, courage, and time for learning. Implications of culture in implementing KM are given in Albers & Barnowe (2003).

Strong leadership is essential for success in a KM program. Leaders need to define a clear direction for the organization and set the tone for creating an environment for knowledge sharing. Idea leaders serve as knowledge champions and change agents for the firm's KM program. Having a clear strategic direction and intent for the organization is fundamental for good KM. Organizational structures that have fewer hierarchical layers and have facilities or spaces for employees to informally share knowledge improve the environment for KM. Technology infrastructure needs to have the appropriate capabilities to support business processes with knowledge dissemination.

Knowledge processes include socialization, internalization, externalization and combination (Nonaka & Takeuchi, 1995). On-the-job training and conversations with other employees are examples of socialization. Writing is an example of externalization. Learning is an example of internalization. Sorting, adding, or combining explicit knowledge is an example of combination. Examination of knowledge processes will help determine the balance between tacit and explicit knowledge. Tacit knowledge is personal knowledge in people's heads. Explicit

knowledge is knowledge that can be codified and easily distributed. The knowledge assessment shows the shortfalls and gaps in knowledge needed to support organizational goals.

The knowledge audit identifies what, where, and how existing intangible assets and resources are used. Examples include employee expertise and skills, patents, trade secrets, reputation, and proprietary technology. The audit establishes an inventory of current assets, how you use assets, and what you will need down the road. The audit examines the following cycle processes (knowledge flows): acquisition, capture, creation, codification, sharing, access, application, and re-use. It examines content and addresses the following questions:

♦   What information/content is there?

♦   How is it currently stored/used /coded?

♦   Who is responsible for the different types of content and their coordination?

♦   What criteria are used to value/select content?

♦   How is value added to content?

♦   How is content proactively managed for organizational viability?

Some best practices in knowledge audits (Tong, 2005) include:

♦   Being smart about how you introduce audits

♦   Be clear about the purpose

♦   Determine your approach and get alignment before you start

♦   Make sure the assessment design and the culture are consistent

♦   Pick the right partners such as HR or the process owner

The knowledge audit should focus on what the business needs, gaps and challenges are, and knowledge needed to fill those gaps (Greenes et al, 2004).

Current methods for conducting assessment/audit include questionnaires, surveys, interviews, workshops, and knowledge cafés. Questionnaires can be structured, semi structured or unstructured. A clear set of questions with yes or no or multiple choice can be used for structured questions. Specific answers and opinions can be used for semi-structured questions. Open ended questions are unstructured.

The assessment and audit together provide the initial foundation to develop an effective knowledge management program.

Step 4 - Perform Information Technology (IT) Assessment

The information technology assessment has the following three diagnostic areas: IT assets, IT management processes, and IT investment performance. The IT assets include applications, technology infrastructure, and the IT organization. For example you can consider the following questions:

♦ Do you have the right applications and functionality to support business processes?

♦ Is the technology infrastructure flexible enough to handle organizational changes and growth?

♦ Do the business and IT staffs have a good working relationship and understand each other?

The assessment of IT management processes examines the IT project management skills which include: strategic and technical direction setting, funding, execution and review of IT projects. The assessment of IT investment performance examines spending profiles and the impacts of spending on the business. For example, it addresses the question, are you spending the right amount at the right time and supporting the right business activities?

When assessing the IT infrastructure, one needs to examine KM tools such as content management, collaborative tools, business intelligence, and knowledge repositories. An overview of various KM tools is given in Dalkir (2005) and Roa (2005). Examples of content management tools include: authoring tools, expertise profiling, knowledge maps, metadata tagging, and personalization of content. Examples of collaborative tools include: networking technologies, chat rooms, videoconferencing, discussion forums, Wikis, and groupware. Examples of business intelligence tools include: e-learning technologies, expert systems, decision support systems, and intelligent agents. The IT assessment determines any gaps in the existing IT capability and whether changes are needed in the IT area.

Although IT is an enabler in creation, capture, sharing and integration of knowledge, it does not bring about behavior, cultural or organizational change, make people share or search for knowledge, or create a learning organization.

Step 5 - Develop Project Plan And Measurement Systems

The KM project plan lays out execution of the program based on the results of the knowledge assessment and audit, and technology assessment. It answers the questions of what, why, where, when and how. The plan should include the following:

♦ Define specific objectives

♦ Determine deliverables

- ♦ Define roles and responsibilities

- ♦ Define resource requirements

- ♦ Lay out schedules with milestones

- ♦ Develop a communication plan

- ♦ Determine metrics

- ♦ Describe organizational and/or technology changes

- ♦ Capture lessons learned

A pilot project is an important first step in helping companies to evaluate KM and to see how it creates value to the business. It is important to get a quick win with measurable benefits to get continued support. It is best to start small in one area where it is likely to have an impact and make a difference. It is suggested to avoid trivial projects and to stay away from your company's lifeblood. One could answer the following questions (Seeley & Dietrick, 2000) when considering the initial project:

- ♦ Where is the greatest need or pain?

- ♦ Where does the strongest executive sponsorship and commitment lie?

- ♦ Where do you have the greatest community acceptance and eagerness?

- ♦ Which is the most strategically important process, community, or product to focus on?

- ♦ Where is the greatest sense of urgency?

- ♦ Where do you have the most vocal supporters?

A results driven incremental methodology is recommended for deployment of KM projects (Fichman & Moses, 1999). This approach uses targeted business results and end objectives to drive decision making at each point throughout the process.

It would be helpful to prioritize the specific objectives. Describe what you are going to deliver. Explain benefits to the group participating in the pilot program and to the entire organization. Clearly define roles and responsibilities which will help ensure you have adequate members on the KM team. Consider all resources including training, IT support, funding, and people. Be realistic in establishing timelines for the project.

Successful implementation is very much dependent on the promotion of KM awareness within the organization. Your communication plan should be directed to the user community where the KM project is initiated. The project should describe organizational changes such as the following:

- Organizational policies and standards

- Reward and recognition systems for sharing knowledge

- Learning by doing and learning by observation

- Changes in business processes

- Mentoring, on-the-job training and face to face meetings

- Cooperative projects across departments and possible employee rotation

- Establishing communities of practice

A community of practice is a group of individuals informally bound together by shared expertise and passion in a joint activity. Principles for cultivating communities of practice are given in Wenger et al (2002). The community of practice provides an opportunity for learning and a platform for innovation among its members.

The project should describe any changes proposed in IT as the result of the IT assessment. Often times no changes are needed in technology for the initial project. Keep in mind that you want a small win to start and it may only involve an organizational change which could be minimal cost compared to implementing a new technology. Once the technology area is identified to support the KM activity, the specific software can be selected by using the methodology discussed in Albers & Trinidad (2004).

It is vital that the measurement process starts from day one. The measurement of KM must be tied to the performance of the business and show its impact on the business. The benefits of measuring KM progress and results should be continued support and funding for the program. The project should determine the process for collecting the measures, assign people to monitor and support the measures, analyze the impact of the measures and report the results to management. Examples of KM metrics are the following: degree of access to important information, quality of content, effectiveness of knowledge flow, and efficiency of information management. Various approaches for measuring intellectual capital are given in Albers & Dimitrijevic (2005). Some of the popular measurement methods currently being used include: Skandia Navigator (Edvinsson & Malone, 1997), Intellectual Capital Index (Ross et al, 1997), The Intangible Assets Monitor (Sveiby, 1997), and the Balanced Scorecard (Kaplan & Norton, 2005).

The last step in the process is to capture lessons learned before beginning the cycle for the next project. Some of the lessons learned from previous projects are:

- High level sponsorship is critical

- Culture is key, not technology

♦ A relaxed atmosphere will foster knowledge sharing

♦ Don't expand too quickly without a good growth strategy

♦ KM system needs to be user friendly and simple to use

♦ KM includes easy access to experts

♦ Buy-in from employees is important

♦ KM must involve all levels, not just management

Pitfalls And Key Success Factors

One of the best ways for organizations to ensure success in their KM implementation is to be aware of common pitfalls and success factors that have been established from the experience of others. Some of these pitfalls (Anonymous, 2000) are:

♦ Lack of business purpose

♦ Poor planning and inadequate resources

♦ Lack of accountability

♦ Lack of customization

The project plan outlined in this paper addresses these four pitfalls and includes: a plan that provides KM objectives that support the business objectives, requires specifying needed resources, defines roles and responsibilities, and defines a program that is tailored to the needs of the users.

Another article that discusses some common errors in KM is given in Fahey & Prusak (1998). Several errors that stand out from this article are the following:

♦ Not developing a working definition of knowledge

♦ Paying little heed to the role and importance of tacit knowledge

♦ Focusing on the past and the present and not the future

Some training and/or discussion of what knowledge is during the initial KM assessment would be helpful. The KM assessment should address the need for tacit knowledge, and the KM strategy should be directed at the needs for the future.

Weber (2007) discusses failure factors in KM and offers countermeasures to address these failures. Suggestions in his article that have a direct bearing on the implementation process are: KM approaches should be designed in collaboration with different stakeholders, and KM should demonstrate how contributors can benefit from

KM. The users in affected areas should be directly involved in the formation of the project plan. For example, the project plan could be discussed with a focus group of users before implementation. The benefits of the KM program should be spelled out in the business case and presented to management and employees. The project plan should include incentives and rewards for those that contribute to the project.

Several other failure factors (Akhavan et al, 2005) that stand out include: 1) lack of familiarity of top management with the dimensions of KM and its requirements and 2) improper selection of knowledge team members. Education or training for executives through an institution or a consultant on what is KM and its potential value to the organization would be very helpful. Sometimes mid-level managers that have been trained in KM can provide adequate dialogue to upper management. It is critical that the KM project manager and other team members are carefully selected from the organization.

Areas that are critical to the success of KM implementation (Chong & Choi, 2005) are the following:

- ♦ Visible top management leadership

- ♦ Employee training, involvement, and empowerment

- ♦ Information systems infrastructure

- ♦ Performance measurement

- ♦ Knowledge friendly culture

- ♦ Benchmarking and knowledge structure

- ♦ Elimination of organizational constraints

Concluding Remarks

Companies are continuing to update their employees on the leading edge management techniques such as knowledge management that offer significant potential for improving organizational performance. Companies are looking for practical, easy to follow steps that are built on best practices, pitfalls, and successes of companies that have gone before them. It is the hope of this author that the guidelines proposed in this paper should help companies along the journey of KM implementation.

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