

ANALYSIS OF LEARNING ORGANIZATIONS AND KNOWLEDGE MANAGEMENT PRINCIPLES

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Abstract

ZBS Company is currently undergoing major changes due to a shifting market economy. Consequently, it is trying to determine the best approach for it to take to manage the rapidly changing environment. The paper begins by reviewing the concepts of knowledge management and learning organizations. That information is then applied to the scenario created around ZBS Company. The scenario reviews other companies that have adopted knowledge management and learning organization philosophies and identifies (1) approaches taken by those organizations, (2) impacts or outcomes that resulted from implementing knowledge management and organizational learning principles, (3) assessment measures taken, (4) key success factors of the implementations reviewed, (5) lessons learned, and (6) recommendations for future implementations. Based on the research discussed in the paper, a recommendation for adopting the principles of a learning organization and knowledge management was given.

Question

Analyze the components needed to create a learning organization from a knowledge management perspective. Based on the research findings, develop an agenda to present to an organization that currently does not practice this philosophy.

When asked what is their most valuable asset, many corporate executives respond “knowledge” (Glasser, 1998/1999). *Knowledge* is being able to summon individual ideas, concepts, judgments, talents, perspectives, experiences, beliefs, and skills when needed to relate, resolve, and process information (Barth, 2001; Newman, 1996). Newman’s (1991) article states that “knowledge is more relevant to sustained business than capital, labor, or land” because it provides individuals with an opportunity to “respond to novel situations” (p. 3). In the emerging knowledge economy of the twenty-first century, how a company manages the skills, competencies, ideas, contributions, experiences, and motivation of its staff will ultimately determine corporate success or failure (Nickols, 2000).

This paper begins by reviewing the key components of knowledge management and learning organizations. Next, the abstract theories and principles of knowledge management and learning organizations are applied to a scenario that is built around a fictitious company referred to as ZBS. The purpose of the scenario is to provide practitioners with practical applications to complex issues found during the transition to a knowledge-based, learner-focused environment. Finally, lessons learned through the research are summarized.

Knowledge Management

“Knowledge Management is the collection of processes that govern the creation, dissemination, and utilization of knowledge” (Newman, 1996, p. 1). Organizations can create knowledge management structures that facilitate the dissemination of knowledge throughout the organization using technology and teamwork; thereby limiting the amount of valuable experience and information lost (Barth, 2001; Delio, 1998; Knowledge, 1999; Petch, 1998; Roberts-Witt, 2001). “Knowledge management caters to the critical issues of organizational adaption, survival, and competence in the face of increasingly discontinuous environmental change. Essentially, it embodies organizational processes that seek synergistic combinations of data and information processing capacity of information technologies, and the creative and innovative capacity of human beings” (Malhotra, 1997, p. 1).

According to Grey (1996), “knowledge management is an audit of ‘intellectual assets’ that highlights unique sources, critical functions, and potential bottlenecks that hinder knowledge flows to the point of use. It protects intellectual assets from decay, seeks opportunities to enhance decisions, services, and products through adding intelligence, increasing value, and providing flexibility” (p. 4). In many ways, knowledge management acts as a powerful tool to help organizations adopt and manage change. The culmination of resources serves as a valuable asset to all members of the organization, by building skill, and providing tacit knowledge to many who often would have no other way to obtain it (Barth, 2001; Knowledge, 1999; Malhotra, 2001; Roberts-Witt, 2001; Robin, 2000; Sisakhti, 1998; VNU Business Media, 2001).

Depending on the perspective, managing knowledge can strengthen either physical or intellectual assets. If physical assets are the primary concern, then knowledge management can help to optimize returns by increasing product life cycles. If intellectual assets are more important, then knowledge management can help build and apply knowledge. As a result,

product life cycles can continue indefinitely because staff members are constantly aware of problems, customer needs, and future marketability of the products. Making proactive changes can ensure that customers always get what they desire or need when they want it (Glasser, 1998/1999; Roberts-Witt, 2001).

The concept and need for knowledge management is nothing new. From the late 1960s to the mid-1990s, information management was the buzzword. Then, as society moved closer to the twenty-first century, the need to combine information management and technology became more apparent. Corporations began looking for ways to improve, organize, and distribute all of the information they had collected over the years. Consequently, change initiatives such as Total Quality Management, business process reengineering, and self-managed work teams emerged. Although these initiatives involved systemic thinking, teamwork, decentralization of decision-making, and continuous learning, the ability to provide and process information quickly was limited (Watkins & Marsick, 1996). Attempting to improve the speed in which information was processed, knowledge management and organizational learning concepts were introduced (Senge, 1990; Pedler, Burgoyne, & Boydell, 1991).

Knowledge Management Systems

To remain competitive in this new era, companies need to provide customers with fast responses, competitive prices, and accurate information (Glasser, 1998/1999; Roberts-Witt, 2000). Management therefore began focusing on “determining, organizing, directing, facilitating, and monitoring knowledge-related practices and activities required to achieve the desired business strategies and objectives” (Newman, 1996, p. 5). Questions such as “why, where, and to what extent should management invest in or exploit knowledge?” and “what strategies, products, services, alliances, acquisitions, or divestments should be considered from knowledge-related points of view?” were beginning to be answered.

Effective knowledge management strategies marry technology, organizational structures, and cognitive based strategies to raise the yield of existing knowledge and produce new knowledge” (Newman, 1996, p.9). Wenig (1996) considers organizations, humans, computers, and joint human-computer systems critical to “acquiring, storing, and utilizing knowledge for learning, problem solving, and decision-making” (p. 7). Malhotra (2001) stresses that knowledge management focuses on ‘doing the right thing’ instead of ‘doing things right.’ Consequently, organizations should view all processes as knowledge processes within the framework of doing things right. To accomplish this, each process requires the creation, dissemination, renewal, and application of knowledge toward organizational sustenance and survival (Glasser, 1998/1999; VNU Business Media, 2001).

In order for the knowledge management process to work, tools such as groupware, contact management software, intranets, databases, data warehouses, and document management systems should be acquired. *Groupware tools* provide team members opportunities to discuss ideas, track changes, and communicate freely with communities of practice regardless of geographical location. *Contact management software* records and organizes relationships and transactions between customers and suppliers. *Intranets* and *Internets* allow an unlimited number of people access to information such as best practices, key resources, and general information quickly and simultaneously. *Databases* provide users with excellent ways to organize mass quantities of information. *Data warehouses* store the collected information and offer features that make it easy for users to extract or mine information. And, *document management systems*

provide ways to electronically store documents so that they can be retrieved as needed anytime in the future (Barth, 2000; Davis, 2001; Delio, 1998; Fitter, 1999; Knowledge, 1999; O'Driscoll, 1999; Roberts-Witt, 2000; San Diego State University, 1999; Sveiby, 1996; VNU Business Media, 2001).

Computer enhancements enable businesses to incorporate inclusive delivery systems to the desktop computer of every staff member. *Electronic Performance Support Systems (EPSS)* allow all employees to access information, tools, and assistance online (O'Driscoll, 1999). For example, a customer service representative can complete a questionnaire, find the answers to a multitude of questions, and calculate the total amount of money a client needs to contribute to an account instantaneously while conferring with the customer. *Learning Management Systems (LMS)* provide a centralized location for administrative and personnel records. Trainers can access and input registration, attendance, and performance information into a centralized source. This system can also serve as a database from which staff members can request historical information regarding the training they have previously received (Fitter, 1999; Glasser, 1998/1999; Sveiby, 1996; VNU Business Media, 2001).

Learning Organizations

Although Knowledge Management can effectively handle knowledge resources, it does not provide individuals with the tools they need to decipher, apply, and learn the housed information. Consequently, organizations face the challenge of creating environments based around learning. To address this concept, Peter Senge published *The Fifth Discipline* in 1990, which introduced the theory of *Learning Organizations*. This section reviews the concepts identified by Senge, and other theorist, by looking at development from an individual, leader, team, organizational, and global level.

Senge defined learning organizations as businesses “where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free and where people are continually learning how to learn together” (Santosus, 1996, p. 1). Malhotra (1996) defines learning organizations as “organizations with an ingrained philosophy for anticipating, reacting, and responding to change, complexity, and uncertainty (p.1). Pedler, Burgoyne, & Boydell (1991) define a learning organization as “an organization that facilitates the learning of all of its members and continuously transforms itself in order to meet its strategic goals” (p. 1).

Leaders of true learning organizations ensure that staff members have accurate perceptions of reality by clearly communicating a shared vision. They also create an environment that proactively seeks out and masters change. “A learning organization must capture, share, and use knowledge so its members can work together to change the way the organization responds to challenges. People must question the old socially constructed and maintained ways of thinking. Learning must take place and be supported in teams and larger groups, where individuals can mutually create new knowledge. And the process must be continuous because becoming a learning organization is a never-ending journey” (Phillips, Watkins, & Marsick, 1996, p. 4).

Structure of Learning Organization

“Individuals learn first as individuals, but as they join together in organizational change, they learn as clusters, teams, networks, and increasingly larger units. In addition, while individuals can initiate some changes on their own as a result of their learning, the organization must create facilitative structures, policies, and cultures to support learning in larger groups and throughout the organization” (Phillips, Watkins, & Marsick, 1996, p. 4). Development occurs at several levels within a learning organization: (1) individual, (2) team, (3) organizational, and (4) global (Pedler, Burgoyne, & Boydell, 1991; Phillips, Watkins, & Marsick, 1996). The learning organization model developed by Driscoll and Preskill (1996) identifies (1) individual, (2) leader, (3) team, and (4) organizational levels. Senge (1990) proposes five disciplines for learning organizations that correlate with the other models. The disciplines are (1) personal mastery, (2) shared vision, (3) team learning, (4) systems thinking, and (5) mental models. The following section will review the first structural level of an organization – individual.

Individual Level Development

The infrastructure for individual level development supports learning by creating continuous opportunities (i.e., skills assessment, desktop learning programs, personal development programs, informal learning, on-the-job training programs, and tuition reimbursement plans) and promoting dialogue and inquiry (i.e., create a culture of questioning, feedback, and experimentation including dialogue circles and action learning) (Marsick, & Watkins, 1996). Driscoll and Preskill (1996) discuss how job function can improve personal and interpersonal development. Opportunities such as completing special assignments or rotating jobs allow individuals to take charge of their environment, improve change management skills, and build a technical learning foundation revolving around quality.

Senge’s (1990) principle, *personal mastery*, requires individuals to be creative and look at problems from unique perspectives. Individuals who have achieved personal mastery have attained a high level of proficiency in every aspect of their personal and professional life. They generally have a sense of purpose, look at changes as opportunities, are inquisitive because they want to understand their environment better, and appreciate life and the chances it affords them. Individuals with high personal mastery realize that they never truly arrive and as a result, they continuously seek learning opportunities because they “are acutely aware of their ignorance, their incompetence, [and] their growth areas” (Senge, 1990, p. 142). These self-confident individuals feel a great sense of commitment and responsibility toward their work. Individuals striving toward personal mastery are strongly committed to their own personal vision and goals. They feel anxious when situations conflict with their values and beliefs and continuously struggle to reach their ideal state. They are constantly seeking the truth from themselves and others. From a system perspective, personal mastery is “integrating reason and intuition; continually seeing more of our connectedness to the world; compassion; and commitment to the whole” (Senge, 1990, p. 167).

The collective organization cannot learn if the individuals employed by it do not learn. Therefore, it is important that management within an organization encourages personal growth and development, provides environments where learning is encouraged and rewarded, praises experimentation, values diversity and uniqueness, and discourages the status quo (Delio, 1998).

Learning organizations use processes such as experimentation, analysis, and observation to gain knowledge. However, learning new information does not guarantee increased productivity or improved practices; it only ensures that individuals have been exposed to information. Knowledge acquisition, information distribution, information interpretation, and organizational memory are four constructs integrally linked to organizational learning. "Learning need not be conscious or intentional. Further, learning does not always increase the learner's effectiveness, or even potential effectiveness. Moreover, learning need not result in observable changes in behavior. Taking a behavioral perspective, an entity learns if, through its processing of information, the range of its potential behaviors is changed" (Malhotra, 1996, p. 1).

Mental models are "deeply held internal images of how the world works, images that limit us to familiar ways of thinking and acting" (Senge, 1990, p. 175). Mental models dictate the way individuals see things and how they react to situations encountered on a daily basis. Although people do not always do what they say, they do behave according to what they believe (their mental models). Ignoring the existence and power of mental models can cause management's attempts toward systems thinking and organizational learning to fail.

Mental models are also part of how individuals learn. When bombarded with a lot of information at one time, humans have a tendency to categorize it. These categories represent generalizations of the information presented. Within personal mental models, individuals also generalize. Senge (1990) refers to the process of going from concrete data to general observations as *leaps of abstractions*. "Leaps of abstraction impede learning because they become axiomatic. What was once an assumption becomes treated as a fact" (Senge, 1990, p. 193). These leaps often lead individuals to incorrect assumptions (O'Driscoll, 1999). To avoid these misassumptions, it is important to question one's belief system and determine what information is fact and what is a generalization. One tool Senge uses to help in the process is a left-handed column. Here individuals write what they are thinking on the left-hand side and the actual conversation on the right-hand side. Generally, the differences between the two columns are significant. By using this process, individuals can see when actual differences or miscommunications occur and how success was undermined.

Another avenue used to explore mental models is inquiry and advocacy. The *inquiry* process is self-explanatory. Generally, individuals ask questions for two reasons: to find an answer or to hide the promotion of their beliefs. *Advocacy*, on the other hand is openly sharing individual beliefs by logically explaining one's position while encouraging others to share theirs and then challenging both, much like a debate. It is important to share assumptions initially, identify data supporting the assumptions, and ask questions only if there is genuine interest in the response (O'Driscoll, 1999; Senge, 1990).

Santosus (1996) believes that companies desiring to become learning organizations need to gain buy-in from all levels of staff. Without employee buy-in, organizations cannot achieve success because becoming a learning organization is a slow process. Everyone in the organization should be able to clearly see the vision, believe in it, and strive to achieve it. This desire for success leads employees to seek personal mastery and proactively find solutions to potential problems. It also promotes communication and sharing of both positive and negative experiences. This openness encourages staff members to participate in problem-solving activities, flag potential issues before they become large problems, and learn from each other. However, in order for this concept to work, beliefs and values about learning need to permeate the entire organization and learning initiatives should preempt all decisions; otherwise,

employees may discredit management and become cynical of the organization (Delio, 1998; Glasser, 1998/1999; Santosus, 1996).

The second structural level of an organization is leadership. Leadership is very important in a learning organization because the direction and support provided from the leaders directly affects the behaviors and beliefs of the other individuals within the organization.

Leader Level Development

A key to successful learning environment is not the plan that is in place but the way information is processed. From a leadership perspective, leader learning involves sharing the quality philosophy, leading a change effort, mentoring, and strategic focus (Driscoll, & Preskill, 1996). Strong leadership and management skills are requirements of learning organizations because, in true learning environments, existing knowledge is not valued as much as creativity, drive, effectiveness, openness, and strategic thinking (Learning, n/d; Santosus, 1996). For example, Senge (1990) believes that leaders should be responsible for helping individuals learn by serving as teachers and coaches who constantly encourage innovation and challenge existing beliefs and knowledge. Consequently, modeling behavior is an important aspect of leadership. Senge also believes that learning should be generative (experimental and continuous), not adaptive (unquestioning and limited). Therefore, individuals need to be able to experiment and challenge the system, not simply accept underlying assumptions and resolve only the problematic symptoms (O'Driscoll, 1999).

Senge's (1990) *shared vision* is not an idea but a deeply embedded belief shared by many that provides focus and is a vital part of generative learning. Visions create excitement and enthusiasm. A shared vision creates a common identity, sense of purpose, and common values all of which are essential for a learning organization. Shared vision allows for greatness because it creates a freedom that fosters new ideas and concepts while encouraging risk taking and experimentation. "In the presence of greatness, pettiness disappears" likewise, "in the absence of a great dream, pettiness prevails" (Senge, 1990, p. 209).

Managers that do not encourage their employees to develop personal vision cannot expect the organization's vision to succeed because the two should mesh. Senge (1990) explains this concept using a metaphor of a hologram; just as a hologram creates separate whole views when divided, organizational vision is a culmination of each person's unique perspective of the same vision. For the vision to truly be valued, all who share it need to have input toward the outcome. Inability to contribute leads to a diminished commitment. Without commitment, the collective organization has only compliance.

Senge (1990) claims that the shared vision is only a piece of the system. It is a fundamental part of *governing ideas* that incorporate the organization's vision, mission, and core values. When these governing ideas appear to no longer work, it may be because individuals do not see how they can contribute toward the ideas and shape the future that they describe. Unfortunately, many individuals feel any efforts toward change would only be acts of futility because they are bound by existing policies and procedures. True shared vision dispels frustrations by providing purpose and unity.

Pfeffer and Sutton (2000), discuss creating an organizational learning environment with a shared vision in a case study based on Saturn. Wanting to take a new approach to automobile manufacturing, a group of General Motors (GM) executives decided to break away from the traditional automobile production process and create a new worker-friendly environment. The

majority of Saturn employees hired were considered rebels and risk takers in the traditional auto manufacturing environment. These staff members sought and embraced systemic change just as many employees did during the Total Quality Management movement in the latter half of the twentieth century (Phillips, Watkins, & Marsick, 1996). By welcoming change, Saturn was able to develop into a successful car company in large part due to a shared, consistent philosophy ingrained in the staff.

Team Level Development

The third structural level of an organization deals with teams. “Team level development requires team learning where there is mutual construction of new knowledge and the capacity for concerted, collaborative action” (Phillips, Watkins, & Marsick, 1996, p. 6). At this level, Driscoll and Preskill (1996) emphasize the importance of variation, statistics, quality tools, problem solving, and process improvement. They also encourage this level to create cross-functional teams so individuals can practice facilitation and management skills while building a strong team concept.

Team learning occurs when there is a common purpose, shared vision, and alignment of conditions resulting in a desired outcome. Team members need to be disciplined, talented, and know how to work together effectively. In order to succeed, teams should (1) think “insightfully about complex issues”; (2) create an atmosphere that supports the concept that several minds are better than one; (3) build *operational trust* which requires individuals to perform at their best while complimenting the actions of others; and, (4) foster learning of other teams by “inculcating the practices and skills of team learning” (Senge, 1990, pp. 236-237). However, in order to do this successfully the team needs practice (Delio, 1998).

An important aspect of a team’s performance is open dialogue. *Dialogue* provides a common meaning to groups because it provides teams with tools to interact with each other and explore possibilities through existing experiences (Delio, 1998; Shand, 1999). “Dialogue is a way of helping people ‘see the representative and participatory nature of thought [and]...to become more sensitive to and make it safe to acknowledge the incoherence in our thought.’ In dialogue, people become observers of their own thinking” (Senge, 1990, pp. 241-242). “Dialogue is needed to maintain a learning edge” (Pedler & Aspinwall, 1996, p. 146). According to Pascale (1990), “an organization’s ability to cope with competition and turbulence outside is a direct consequence of the ability to generate, manage, and learn from an appropriate level of conflict on the inside. This is especially true when what is needed is something transformational rather than incremental. If a company is going to change habitual ways of acting, it cannot start unless someone finds the courage to challenge or disagree” (Pedler & Aspinwall, 1996, p. 146). Consequently, for dialogue to work, individuals need to be willing to question their assumptions, respect all participants and their contributions, and involve a facilitator who moderates and leads the dialogue session (O’Driscoll, 1999; Shand, 1999).

Teams often experience conflict. Conflict can be productive and incorporated into dialogue sessions often leading to effective brainstorming and problem solving sessions. Unfortunately, mediocre teams are often unable to develop conflict into a productive tool; instead, the conflict causes them to inflict blame and become defensive. In fact, defensive routines are often used when individuals do not want to even consider the ideas of others. Teams, just as individuals, use defensive tactics to hide problems and reduce perceived risks. Unfortunately, in doing so, teams often create more problems in the long-term. When a shared

vision is an integral part of the team, defensive tactics are recognized and analyzed. This introspection often leads to positive learning experiences once the team understands the reasoning behind their defensiveness (Delio, 1998).

As with any other skill, teams need to practice the art of dialogue and learning as a team. One way to accomplish this is to establish a learning environment that allows experimentation and mistakes without fear of reprisal. Setting expectations and allotting sufficient time may achieve successful dialogue (Delio, 1998)

Organizational Level Development

Organizational level development, the fourth level of structural development, empowers individuals by providing standard operating procedures, policies, culture, work processes, and the information systems that create common links and experiences for everyone to share (Marsick, & Watkins, 1996). Organizational learning involves continuous improvement, systems thinking, profound knowledge, reengineering, creativity innovation, customer focus, critical thinking, and lifelong learning (Driscoll, & Preskill, 1996).

Systems thinking is a way to get everyone in an organization on the same page. To do this requires “metanoia – a fundamental shift or change of mind” (Senge, 1990, p. 13). Since society expects immediate gratification, short-term solutions are preferable to visible problems. Rather than taking time up front to determine the best way of handling a situation, results are hurried, making it impossible to consider all the options. More often than not, symptoms are addressed rather than the actual problem. This is because individuals often mistake the time and space relationship between the cause (“the interaction of the underlying system that is most responsible for generating the symptoms”) and the effect (“the obvious symptoms that indicate that there are problems”) (Senge, 1990, p. 63). As a result, poor or ineffective behaviors are too often reinforced and processes repeated, validating Senge’s belief that current problems are a result of solutions that were applied in the past. Although the initial intentions were good, focusing on short-term rather than long-term benefits may ultimately lead to a temporary cure that is worse than the original problem.

Systems thinking requires company management to consider the impact decisions have on other areas of the organization as well as relationships that exist with both internal and external customers. By looking at processes and implementing minor changes, significant contributions to the overall quality and productivity of the organization may occur. Systems thinking is not an easy task to accomplish. It requires a great deal of constant vigilance, planning, and consideration. In addition, systems thinking takes time. As with any change implementation, weeks, months, or years, may be required before actual results are realized. However, when successfully implemented, it can provide a wide range of benefits to companies and improve overall achievement (Delio, 1998; Glasser, 1998/1999, Knowledge, 1999).

Global Level Development

The final phase of organizational learning focuses on global level development, which requires individuals to think globally; “crossing boundaries of environmental or societal impacts, including those that affect the quality of life afforded organizational members by the organization” (Marsick, & Watkins, 1996, p. 7). Monitoring the staff’s quality of life, conducting employee opinion surveys, teaching customer service classes, encouraging action learning, and

benchmarking are all ways of connecting the organization to its environment and encourage global level development.

Employees should become critically reflective constantly reviewing and questioning the hierarchical structure of the organization. True learning organizations (1) strive to achieve common values, visions, and goals; (2) seek the truth according to the environment in which they exist; (3) empower their employees through training; and, (4) value honesty, openness, and leadership by example. It is the leaders' job to encourage individual growth and development by allowing individuals to (1) determine the best way to do their jobs, (2) make decisions on their own, (3) take ownership over the work they do, (4) encourage diversity of opinion, and (5) develop effective processes. Teams have to study both positive and negative impacts of decisions. Organizations need to create positive environments that encourage and develop staff. (Delio, 1998; Glasser, 1998/1999; Senge, 1990; Santosus, 1996; Shand, 1999).

Application of knowledge management principles is also need to change the effectiveness and culture of an organization. Providing staff members with the information they need when it is needed empowers employees and encourages ownership. Knowledge management systems not only track development but also provide a foundation from which organizations can grow and learn together.

Scenario

Limited understanding of how to apply knowledge management and learning organization principles lead Senge to write a follow-up fieldbook to *The Fifth Disciple* for practitioners. Along the same vein, the following scenario should serve as a model to practitioners attempting to create a learner-centered, knowledge-based work environment. The scenario revolves around an organization (referred to as ZBS) that currently has not incorporated knowledge management or learning organization principles. Consequently, this section reviews knowledge management and learning organization philosophies and practices that other companies have adopted by identifying (1) approaches taken by other organizations, (2) impacts or outcomes that resulted from implementing knowledge management and organizational learning principles, (3) assessment measures taken, (4) key success factors of the implementations reviewed, (5) lessons learned, and (6) recommendations for future implementations.

Background

Currently ZBS Company is undergoing major changes due to a shifting market economy. Research shows in order to maintain a profit, the company has to consolidate several operations and create standard operating procedures for the scores of branch offices across the country. This process involves a large information technology (IT) initiative requiring thousands of man-hours, not to mention an unprecedented amount of coordination, teamwork, cooperation, and training.

At present, each office within the organization administers separate Human Resource (HR) policies recording attendance, performance, and salary administration. However, some basic guidelines regarding discipline, confidentiality, and other legal aspects are the same. The organization follows a hierarchical structure and each location currently has its own president, vice president, and upper level managers. Bureaucracy, at times, seems insurmountable.

Although all of the budgets ultimately roll into one, each office manages its finances separately with little to no consideration of how other offices are performing.

Depending upon the management philosophy of the office, educational and training opportunities for the employees range from non-existent to comprehensive training and development centers that offer topics including computer skills, operational training, and personal as well as management development. Some offices also provide extensive employee educational reimbursement packages.

The turnover rate at the offices with little to no educational or training opportunities is significantly higher than at those that do offer training. Many employees that travel to other offices have complained that the conflicting policies are unfair and biased. Common complaints in exit interviews are there is no centralized place to find information and other staff members hoard information.

A conversion task force has been formed to link research findings regarding knowledge management and organizational learning to a plan that will assist ZBS move closer to a more effective, streamlined environment. The paragraphs below list some representative action items and questions to consider during the initial implementation of this new approach highlighting knowledge management in a learning organization from the following perspectives (1) sharing knowledge, (2) controlling resources, (3) managing human, intellectual, and knowledge capital, (4) developing individuals and organizations, and (5) managing change.

Approach

“*Hierarchy* serves to separate planning and control from actual work performance, which limits the amount of problem solving that front-line employees are required to do” (Broere & De Jong, 1996, p. 121). “*Specialization* implies assigning individuals a limited number of tasks to be performed and limits their scope of concern with total work process” (i.e., traditionally structured organizations limit the amount of thinking and learning the staff do) (Broere & De Jong, 1996, p. 121).

The task force recommends implementing a learning organization approach that minimizes hierarchical structures and specialization. By changing the culture to emphasize the knowledge and role that front-line employees play, ZBS will be able to customize its products and services to meet customers’ needs while making optimal use of the company’s materials and human resources. Currently, ZBS has a top-down, limited-scope process structure for training its employees based on specific job responsibilities. By implementing organizational learning principles, ZBS will create a learning environment that takes a team-based, bottom-up, broad-scope process approach that encourages employees to implement innovative and creative approaches to issues or problems that arise (Broere & De Jong, 1996).

To accomplish this approach, ZBS needs to assess current training to identify the kind, quantity, and quality of information currently available to the staff along with the technology and tools it uses to disseminate the information. Then, ZBS needs to assess the knowledge base of its existing employees to identify any gaps (Benz, 2001; Cohen & Backer, 1999; Sisakhti, 1998).

By identifying and collecting key information; determining the best method for housing (storing) it; and, making it accessible to everyone, the concept of sharing knowledge will be promoted. However, this approach will only be successful if management is knowledgeable and supportive of these actions. After determining the process to use to share knowledge, ZBS should implement an accessible, consistent, and reliable communication strategy to disseminate

information. Since the volume of information available will be immense, it will be important to edit it for accuracy and relevancy. Information owners should also be identified so that when questions occur, they can be contacted directly and discourage them, and others, from hoarding knowledge (Benz, 2001; Davenport, 1998; Delio, 1998; Fitter, 1999; Pfeffer & Sutton, 2000; Sisakhti, 1998).

To control the information and resources collected, ZBS should develop a comprehensive infrastructure that supports creating, tracking, storing, and sharing information to ensure nothing is missed (Driscoll, & Preskill, 1996). Safety measures to protect the information's integrity should also be implemented (Roberts-Witt, 2000). By taking steps to ensure that information remains in the organization, less will be lost when there is turnover. ZBS also needs to update all procedures and maintain documentation of software and other systems it currently uses. By outlining the process necessary to standardize these methods, any similarities or differences can be determined. This process will clarify the most effective format to use to incorporate information into the new environment (Fitter, 1998; Sisakhti, 1998).

Effective use of ZBS's resources relies heavily on everyone knowing how to use them properly. This can be accomplished by (1) developing standard procedures and documentation to ensure consistency, (2) developing and delivering training to guarantee that everyone using the tools can do so efficiently and effectively, and, (3) establishing an independent entity to monitor and audit the usage of the systems. This entity would be responsible for identifying misuse and offering solutions to resolve any problems that may occur. Concurrently, ZBS should launch a major communication effort that includes bulletins, newsletters, emails, formal and informal meetings, and any other method deemed appropriate (Sisakhti, 1998; VNU Business Media, 2001).

When reviewing the current mission statement, values, and objectives of the company, ZBS should collect all supporting intellectual capital (Cohen & Backer, 1999; Fitter, 1999; Gordon, 1999). Leaders and project managers should ask, do the mission statement, values, and objectives support the concepts of knowledge management and learning organizations? To ensure that ZBS is maximizing the knowledge it has, it should outline the steps necessary to promote shared vision throughout the organization as a whole. ZBS management needs to spend time considering how it can guide individuals to a shared vision. This task force recommends that managers should observe the employees to determine if there are any performance issues, underlying concerns, or issues that need to be addressed collectively (Sisakhti, 1998). Although the employees may be capable of doing their job, they may be oblivious to how their performance directly affects the overall performance of the company. Some employees are only concerned with getting a paycheck at the end of the week. By creating a more worker-centered environment, this mindset should begin to change (Broere & De Jong, 1996).

This observation period will also provide ZBS with opportunities to analyze and research future needs and responsibilities that could ultimately lead to the development of new products and services after merging existing knowledge (Stuart, 1996). Recruitment of outside resources to assist in the continuation of the knowledge management process may be necessary based on these observations as well. If so, this task force recommends that ZBS incorporate these outside relationships and acquired knowledge into the company's knowledge assets (Nasseri, 1996).

Next, set up a series of recommendations in training classes to help individuals and management see the value of learning and start to change the culture. This task force recommends that ZBS begin by shifting training goals from delivering quality materials in a classroom environment to offering those materials to anyone who is interested throughout the

company at any given moment in time. ZBS leaders should encourage trainers to continue building and nurturing relationships by providing opportunities for individuals to discuss concepts or ideas identified using alternative learning methods. Trainers should design a process that outlines the steps necessary to contribute to the knowledge database. Management should create an incentive program that encourages both learning and contributing information (Delio, 1998; Fitter, 1999; Glasser, 1998/1999, Knowledge, 1999; Sisakhti, 1998).

ZBS should also create a comprehensive management-training curriculum that develops managers into effective leaders and coaches to address any emerging learning problems (Shand, 1999). The training department at ZBS needs to accomplish two things. First, trainers should obtain buy-in by asking management for input by actively involving managers in the research and development of the project. Second, trainers should emphasize advantages of management involvement and find tangible rewards to show your appreciation for participation. In addition, highlight intangible rewards such as improved motivation, increased respect from staff members and peers, and enhanced relationships with others. Lastly, the training department needs to determine how to get management to participate in this activity even though their schedules are full (Delio, 1998, Knowledge, 1999).

Authors like Watkins and Marsick (1996) suggest that ZBS should ascertain how active learning affects productivity. To do this, management should evaluate the training and development programs available throughout the organization and determine how ZBS promotes the concept of education. Then, managers should identify any individuals who appear to be striving for personal mastery (Senge, 1990). By asking question about the different beliefs and behaviors of these individuals, management may be able to glean valuable input from their experiences and commitment. Management may also be able to identify skills or competencies that these individuals have that make them feel comfortable taking risks (Davis, 2001).

Management should review some of the decisions ZBS has made trying to determine ways to recognize mental models that honor and value personal beliefs. Find ways to meld conflicting mental models so that differing views become assets to ZBS rather than liabilities. Then, evaluate the percentage of decisions based on mental models and review if logical processes were followed when making decisions or solving problems. Consider what the motivation was behind the processes (Glasser, 1998/1999; Senge, 1990).

Everyone in ZBS should look at current processes, problem-solving strategies, and action plans currently followed to identify any trends regarding management decisions and success or failure rates. Project managers should conduct studies that review major decisions made over the past five years and determine how many of the decisions were implemented and, if decisions were not implemented, what happened? Management should assess employee support or resistance levels to the changes at ZBS by determining the consensus of how ZBS manages change. The results of this research will determine if ZBS is encouraging its employees to learn and solve problems together and determine if it is committed to creating a learning organization (Glasser, 1998/1999, Knowledge, 1999; Santosus, 1996; Sisakhti, 1998).

Realistically, ZBS should not expect change to be instantaneous. Most projects of this magnitude take five to ten years to implement completely. After all, resistance to change may impede progress or cause organizations to completely change the direction in which they are headed. Financial barriers may also create problems. Adaptation and implementation of new technology is expensive. Strategic planning may change due to unexpected problems or shifting markets. These and a multitude of other issues can cause frustration and delay project completion with little to no warning.

Impacts and Outcomes

Based on research studies (Boydell, 1996; Broere, & De Jong, 1996; Nickols, 2000; O'Neil, Arnell, & Turner, 1996; Senge, 1990; Stuart, 1996) reviewed by this task force, the following impacts and outcomes were reported when other organizations implemented on-the-job training, reorganization, and new management practices based on principles of learning organizations.

Broere and De Jong (1996) reported that employees in their study, which looked at the implementation of on-the-job training for line managers in the insurance field, became more flexible, increased their overall qualifications, and were more involved. Consequently, job satisfaction increased. New-hire assimilation and job proficiency was quicker in part because knowledge was available and immediately used. Higher retention rates, employee satisfaction, and knowledgeable employees also are benefits realized in large part because staff members feel empowered and take ownership of their work and control over their careers (Nickols, 2000). Senge (1990) referred to this phenomenon as personal mastery. "People with high levels of personal mastery are more committed. They take more initiative. They have a broader and deeper sense of responsibility in their work. They [also] learn faster" (Senge, 1990, p. 143).

Soon after implementation, employees began making fewer errors thereby improving quality resulting in a reduced number of internal and external customer complaints. Stuart (1996) also claims that companies that implement knowledge management strategies benefit from "less redundancy, quicker problem-solving, better decision-making, reduced research and development costs, increased worker independence, enhanced customer relations, and improved products and services" (pp. 2-3).

Boydell's (1996) study of British Insulated Callender Cables found increases in employee productivity by 113 percent and absenteeism reduced by 58 percent after adopting learning organization principles. New procedures and processes helped decrease the amount of scrap by 50 percent, increase production, and improve the on-time delivery rate to 98 percent (the highest ever). Consequently, several new export contracts were awarded which saved more than 30 jobs, caused the market share to rise from 17 percent to 40 percent, and turned more than \$1 million dollar deficit into a \$1 million profit.

Visible changes in British Insulated Callender Cables identified by Boydell (1996) included increased staff flexibility and a renewed focus on the business imperative. The new environment encouraged teamwork and allowed staff members to freely express concerns, fears, hopes, expectations, and issues directly with senior management. Soon teams began running their own meetings, taking action, keeping records, supplying information, assisting each other, standing in for one another, and cooperating without management direction. Basic procedures were established for operational arrangements, teams initiated quality improvement projects, and results were measured, recorded, and disseminated. Teamwork and information sharing led to quicker and better implementation decision and suggestions for new ways of working new roles and moves toward self-managed team working structure. Eventually, intershift and production meetings were held to map customer and supplier needs resulting in increased followed through and improved customer relationships.

O'Neil, Arnell, and Turner (1996) studied Volvo Truck Corporation's implementation of an executive development program which recognized changes at individual, team, organizational, and global levels through the use of project-based action learning. At an individual level, staff members appeared to "have a more explicit understanding of themselves

and how their assumptions and beliefs influence how they view the world” (O’Neil, Arnell, & Turner, 1996, p. 161). They were more open to change and adopted a more proactive approach to communication. Staff members began valuing the perspectives of others more and took time to “listen, reflect, engage in dialogue, and integrate diverse perspectives into decision making and actions” (O’Neil, Arnell, & Turner, 1996, p. 161). Management skills also improved as did the amount of support and initiation of risk-taking activities.

At a team level, Volvo Truck Corporation noticed increased teamwork and team building. Employees demonstrated their empowerment by delegating responsibilities, running their own meetings, and participating on more cross-functional teams.

At the organizational and global levels, Volvo Truck Corporation identified changes including expanding the global network by “creating a common communication platform through a culture of reflection and dialogue” (O’Neil, Arnell, & Turner, 1996, p. 161). As staff members began understanding the global business environment better, planning became more valued, processes were evaluated, performance evaluations were more open and honest, and there was an increased awareness and acceptance of other cultures (O’Neil, Arnell, & Turner, 1996).

Assessment

“Evaluation should serve as a catalyst for organizational learning” (Driscoll, & Preskill, 1996, p. 76). Since adapting to change and unlearning old habits is an integral part of learning, management must be keenly aware of how staff members are coping with their environment. One way to measure staff member adjustment is to incorporate individual learning plans into employee performance reviews (Bowerman & Ford, 1996).

Another evaluation method is to ask, “To what extent has the regular departmental employee been brought into the changes? Has the department succeeded in developing a committed workforce dedicated to achieving its vision?” (Bowerman & Ford, 1996, p. 216). “What can be done to help ease tensions and promote the kind of learning that is necessary for the new vision to succeed? How can consultants enhance learning?” (Bowerman & Ford, 1996, p. 218)

This task force would like to incorporate an evaluation structure into every aspect of a company. For example, Hite and D’Angelo (1996) encouraged companies to use the following assessment measure to determine implementation effectiveness (1) employee flexibility, (2) employee satisfaction survey, (3) individual capabilities of employees (building competencies), (4) reduced time to form teams (do employees feel empowered?), and (5) the number of internal qualified staff available.

Key Success Factors

Several research studies (Hite & D’Angelo, 1996; Honold, 1996; Kenyon & Kuner, 1996; O’Neil, Arnell, & Turner, 1996) reviewed by the task force indicated key success factors for creating a successful learning organization. To start with, organizations must have a common focus, vision, values, and goals that are accepted, supported, and practiced by everyone in the organization, especially top management. Once aligned, performance expectations, feedback mechanisms, and rewards should be tailor-made to support interaction among all staff members that includes reflection, dialogue, lectures, and interventions. Woolis and Galosy (1996), tout (1)

learning, (2) resistance, (3) communication, (4) sponsorship, and (5) change strategy as key success factors.

By constantly communicating with staff members before, during, and after change implementation, fear of the unknown should decrease. Open communication channels allow staff members to identify project work they may be interested in outside of their normal areas of expertise. These learning opportunities increase the marketability, skills, and competencies of individuals ultimately creating a more knowledgeable workforce. Successful companies eliminate barriers, provide asynchronous learning opportunities, and make training available to everyone.

Kenyon and Kuner (1996) suggest that companies striving to become learning organization first create an Internet or Intranet through a network to store company information that all staff members can access. Due to the large amount of information available, information discrimination skills should be taught to reduce information overload. Because this may be a new medium for disseminating information, it may be necessary to identify and assess how employees learn using this medium. To do this, (1) “initiate or facilitate on-line discussion about learning; (2) provide support for on-line learning by recruiting and identifying experts, by collecting and posting successful practices, and by disseminating knowledge of where to go for information; (3) identify and remove barriers to learning and to network use; and, (4) monitor network activity and encourage dialogue” (Kenyon & Kuner, 1996, p. 109). Management should also encourage staff members to learn as much as they can outside of the organization.

“Generative learning is the single most important variable that enables an organization to ‘catapult’ itself over the deep barriers to change. Reengineering and restructuring do not by themselves create generative learning. Neither does change in behavior and language alone. Generative learning must be built into each step through dialogue, feedback, iteration, reflection, and formal and informal learning opportunities” (Woolis & Galosy, 1996, p. 239).

Use the energy generated by resistance to advance change. Encourage staff members to communicate with each other and discuss the reasoning behind their resistance. Then ask the staff members to find creative methods for circumventing other encountered resistance.

Woolis and Galosy (1996) identify information as oxygen. They believe that when information is not available it is equivalent to the feeling of choking. Consequently, information “must be rapid, rich, and plentiful. A leader of change must talk to people, be accessible, and provide both formal and informal opportunities for dialogue” (Woolis & Galosy, 1996, p. 239). Information can also be disseminated through meetings, newsletters, broadcasts, memos, procedures, policies, and informal chats. In order to build a community of trust, communication must be open and effective.

Woolis and Galosy (1996) also promote clear, sustained, and unremitting sponsorship of organizational learning and knowledge management concepts. In other words, without complete backing by management, any change initiative will fail. Consequently, it is extremely important that a formal strategy identifying any restructuring, redesigning, or reengineering of the organization be identified.

Based on the scenario, ZBS is currently faced with adopting a corporate philosophy supporting knowledge management and organizational learning. It appears to be in ZBS’s best interest to do so. Table 1 identifies both needs and recommendations that the task force used to make its decision to become a learning organization that uses knowledge management principles. Businesses that are committed to creating a learning organization are dedicated to superior performance and competitive advantage (Phillips, Watkins, & Marsick, 1996; Santosus, 1996).

They are willing to take the time needed to understand risks and benefits more completely. In doing so, they energize and support their staff members by providing a fun, creative, and engaging environment for them to take risks and accept new challenges (Fitter, 2000; Karash, 1995).

Table 1

Identified Needs and Recommendations for becoming a Learning Organization that uses Knowledge Management Principles

| Needs of Organization | Recommendations |
|-----------------------|--|
| Collect Information | <ul style="list-style-type: none"> • Assess current training to identify the kind, quantity, and quality of information currently available to the staff along with the technology and tools used to disseminate information. • Assess the knowledge base of existing employees to identify gaps. |
| Manage Information | <ul style="list-style-type: none"> • Determine the best method for housing (storing) information so that it is accessible to everyone. • Implement an accessible, consistent, and reliable communication strategy to disseminate information. • Identify information owners to edit information for accuracy and relevancy as well as field any questions about the content. • Develop a comprehensive infrastructure that supports creating, tracking, storing, and sharing information. • Implement safety measures to protect the integrity of the information. • Update all procedures and maintain documentation of software and other systems it currently uses. |
| Access Information | <ul style="list-style-type: none"> • Develop standard procedures and documentation to ensure consistency. • Develop and deliver training to guarantee that everyone using the tools can do so efficiently and effectively. • Establishing an independent entity to monitor and audit the usage of the systems. • Launch a major communication effort that includes bulletins, newsletters, emails, formal and informal meetings, and any other method deemed appropriate to increase employee awareness of available resources. |

Table 1, continued

| Needs of Organization | Recommendations |
|------------------------------|---|
| Assess Present Situation | <ul style="list-style-type: none"> • Ensure that the mission statement, values, and objectives support the concepts of knowledge management and learning organizations. • Observe employees to determine if there is any performance issues, underlying concerns, or issues that need to be addressed collectively. |
| Develop | <ul style="list-style-type: none"> • Analyze and research future needs and responsibilities that could lead to the development of new products and services. • Recruit outside resources to assist in the continuation of the knowledge management process as needed. |
| Train | <ul style="list-style-type: none"> • Shift training goals from delivering quality materials in class to offering those materials to anyone who is interested throughout the company at any given moment in time. • Encourage trainers to continue building and nurturing relationships by providing opportunities for individuals to discuss concepts or ideas identified using alternative learning methods. • Design a process that outlines the steps necessary to contribute to the knowledge database. • Create an incentive program that encourages both learning and contributing information. • Create a comprehensive management-training curriculum that develops managers into effective leaders and coaches to address any learning problems. • Focus on obtaining buy-in by asking management for input by actively involving managers in the research and development of the project. • Evaluate the training and development programs available throughout the organization and determine how the concept of education is promoted. |

Table 1, continued

| Needs of Organization | Recommendations |
|-----------------------|--|
| Assess Mental Models | <ul style="list-style-type: none"> • Review company decisions searching for mental models. • Meld conflicting mental models so that differing views become assets rather than liabilities. • Evaluate the percentage of decisions based on mental models and review if logical processes were followed when making decisions or solving problems. Consider what the motivation was behind the processes. |
| Make Decisions | <ul style="list-style-type: none"> • Review current processes, problem-solving strategies, and action plans currently followed to identify trends regarding management decisions and success or failure rates. • Review major decisions made over the past five years and determine how many of the decisions were implemented and, if decisions were not implemented, what happened? • Assess employee support or resistance levels to change. |
| Evaluate | <ul style="list-style-type: none"> • Incorporate individual learning plans into employee performance reviews. • Determine the extent in which regular departmental employees have been brought into the changes. |

Summary

This paper began by defining knowledge management and identifying some of the knowledge management systems available. Next, it defined and reviewed the concept and components of learning organizations including the importance of individual, leader, team, organization, and global levels of development. Senge's five disciplines for learning organizations (1) personal mastery, (2) shared vision, (3) team learning, (4) systems thinking, and (5) mental models were also reviewed. Then, since many practitioners have difficulty applying the abstract theories of knowledge management and learning organizations, a scenario was developed to assist readers better understand these complex concepts.

Despite the many positive aspects of becoming a learning organization that uses knowledge management principles, the process itself is difficult and time consuming. Organizations striving to achieve this status may encounter resistance to change from all levels of staff, unexpected delays as a result of poor planning or changing market environments, increased financial burdens due to necessary technological changes, and heightened stress levels of staff members who fear their jobs may be eliminated once a more effective and efficient process is in place.

Consequently, it is extremely important that organizations communicate decisions and changes to all staff members timely and honestly. Through effective communication, staff members should be more open to new roles and responsibilities. For example, the role of the training department in a learning and knowledge management environment will dramatically change. Often, training departments are criticized for their failure to deliver the classes needed (i.e., development takes too long and the class covers an issue that is no longer valid; or, a course was developed without conducting a needs analysis and is not appropriate for the current environment). Knowledge management may change the role of training units by forcing delivery of information just in time (individuals can go to a database, type in the key words, and instantaneously be provided with the information they need to do their job more effectively) (Fitter, 1999; Knowledge, 1999; Roberts-Witt, 2001; Rosenberg, 2000).

Involvement in formal and informal organizations, job sharing, and independent studies are all part of the sociocultural changes that are occurring in organizations today. Organizations that want to succeed in the future need to adapt to constant change and emphasize the importance of continuous learning to staff members (Knowledge, 1999). In doing so, stagnation of ideas should not occur because existing paradigms constantly shift to accommodate new ideas. Management needs to create positive work environments that encourage active learning by not disciplining individuals for making mistakes too harshly and rewarding those with both insight and innovation (Delio, 1998).

Watkins and Marsick (1996) surmise that companies striving to create a learning atmosphere must (1) embed a learning infrastructure that creates, captures, and disseminates knowledge; (2) “cultivate a learning habit in people and in the culture so that a spirit of inquiry, initiative, and experimental thinking predominates”; and, (3) “regularly audit the knowledge capital in the organization and progress toward eliminating barriers to learning” (p. 283). “It is not enough for individuals to learn; learning organizations must focus on organizational learning and transformation” (Pedler, Burgoyne, & Boydell, 1991, p. 10). Learning should be both adaptive and transformative. Learning organizations need to create structures and systems that ensure the correct knowledge is captured and shared and employees at all levels are involved in making decisions that impact the entire system by building learning into work structures, policies, and practices. This participation should be rewarded facilitating future learning of individuals, teams, and the organization. Benchmarking and other evaluative measures also need to be created to monitor the organization’s progress toward becoming a true learning organization (Pedler, Burgoyne, & Boydell, 1991).

“For organizations to survive in the 21st century, they really have to take a global view of how to move people from beginners to experts and how to move knowledge from the ones who have it to the ones who need it faster and cheaper” (Rossett & Sheldon, 2001, p. 260). By providing the why behind the job that employees perform will help them better understand the process and the overall objective, customers will reap the rewards of faster, better quality service due, in part to the systematic, consistent, and formal learning environment that has been developed (Glasser, 1998/1999; Roberts-Witt, 2000).

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