

Running Head: EVALUATION OF AN ENTERPRISE LEARNING MANAGEMENT
SYSTEM

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EVALUATION OF AN ENTERPRISE LEARNING MANAGEMENT SYSTEM

ABSTRACT

A program evaluation method adopted from Maher (2012) was used to evaluate an enterprise learning management system (LMS) and its content (e-learning modules and instructor-led training (ILT) workshop registrations) of a large international company. This formative evaluation focused on the overall company uptake and usage, perceived value of such resources to the company, and areas of future improvements for the system and its content. The results of this formative evaluation were used to guide immediate and future enhancements or changes so that the learning and development needs of the company's employees were better met through the system. Data from several different sources were used to examine the perceptions and opinions of the employees at the company. Targeted focus groups, followed by a company-wide electronic survey, were conducted. Archival data from three different sources were analyzed for themes: the most recent employee engagement survey section focusing on training and development, system reports from the LMS, and the results of an initial pulse survey during the pilot period of the LMS. The literature review addresses organizational learning, knowledge management and relevant case studies and articles on e-learning and learning management system implementation and evaluation. Lessons learned from this LMS implementation are shared and recommendations for other organizations looking to implement an enterprise learning management system and e-learning culture are included.

Keywords: learning management system, LMS, learning organization, organizational learning, program evaluation, learning and development, e-learning, computer-based training, CBT, web-based training, WBT, corporate learning.

EVALUATION OF AN ENTERPRISE LEARNING MANAGEMENT SYSTEM

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EVALUATION OF AN ENTERPRISE LEARNING MANAGEMENT SYSTEM

TABLE OF CONTENTS

ABSTRACT	ii
ACKNOWLEDGEMENTS.....	iii
LIST OF TABLES.....	vii
LIST OF FIGURES.....	ix
CHAPTER	
I. INTRODUCTION AND OVERVIEW.....	1
Organizational Context.....	2
The Role of the Learning and Development Function and Technology.....	6
II. LITERATURE REVIEW.....	10
Learning and Training in Organizations.....	10
Knowledge Management.....	14
Organizational Learning and the Learning Organization.....	16
Linking Organizational Learning and Knowledge Management.....	34
Learning Technologies and E-Learning.....	35
The Learning Management System (LMS).....	44
Implementing a New Learning Management System.....	48
Measuring the Effectiveness of a Learning Management System.....	49
Establishing LMS Roles and a Governance Board.....	52
III. METHOD OF INVESTIGATION.....	56
A Framework for Program Evaluation.....	56
Research Design and Data Collection.....	61
IV. RESULTS.....	65
Training & Development Themes from the 2008 Engagement Survey.....	65
The 2009 LMS Pilot Survey Results.....	67
Global LMS Survey Results.....	71
Focus Group Analyses.....	93
Major Themes from the 2010 Survey and Focus Groups.....	94
Uptake and System Usage Reports.....	94

EVALUATION OF AN ENTERPRISE LEARNING MANAGEMENT SYSTEM

TABLE OF CONTENTS (CONTINUED)

Evaluation of the Program Evaluation and Limitations of the Study.....	96
V. DISCUSSION.....	99
Action Planning in <i>Company XYZ</i>	100
Recommendations for Managing Change and the First-time Adoption of the LMS.....	104
Conclusion/Summary.....	115
REFERENCES.....	117
APPENDICES	
A. <i>Company XYZ</i> 2008 Employee Engagement Survey.....	125
B. LMS Pilot Survey.....	136
C. Email Invitation for LMS Survey.....	137
D. Intranet Featuring Banner Advertising Survey.....	138
E. Focus Group Email Invitation.....	139
F. Interview / Focus Group Guide.....	140
G. Information Sheet for Interview or Focus Group.....	142
H. Global LMS Survey.....	143
I. Project Charter Based On Feedback from Survey/Focus Group.....	149

EVALUATION OF AN ENTERPRISE LEARNING MANAGEMENT SYSTEM

LIST OF TABLES

Table 1: Synchronous Electronic Learning Tools.....	39
Table 2: Asynchronous Electronic Learning Tools.....	39
Table 3: Program Evaluation (Maher, 2012).....	60
Table 4: Themes from the 2008 <i>Company XYZ</i> Employee Engagement Survey...	66
Table 5: 2009 Survey Q1. It was easy to navigate and look for courses in The Learning Center.....	68
Table 6: 2009 Survey Q2. The courses I viewed had high quality content.....	69
Table 7: 2009 Survey Q3. In what ways will The Learning Center add value to the business?	69
Table 8: 2009 Survey Q4. What additional areas or courses should be added to The Learning Center?	70
Table 9: 2009 Survey Q5. How would you rate your overall experience with The Learning Center?	70
Table 10: 2009 Survey Q6. Would you recommend The Learning Center to others?	71
Table 11: 2010 Survey Q1. What was the primary reason(s) for your most recent visit to The Learning Center?	73
Table 12: 2010 Survey Q2. How often do you visit The Learning Center?	74
Table 13: 2010 Survey Q3. How satisfied are you with The Learning Center in the following areas? If you have not used a function, please leave blank.....	76
Table 14: Themes from 2010 Survey Q3. Open-Ended Comments.....	77
Table 15: 2010 Survey Q4. Would you recommend The Learning Center to others?	77
Table 16: Themes from 2010 Survey Q4. Would you recommend The Learning Center to others? Open-Ended Comments.....	78

EVALUATION OF AN ENTERPRISE LEARNING MANAGEMENT SYSTEM

LIST OF TABLES (CONTINUED)

Table 17: 2010 Survey Q5. What are three most important benefits of The Learning Center for you as a user?	78
Table 18: Themes from 2010 Survey Q6. What are the three areas of improvement we should on for The Learning Center?	80
Table 19: 2010 Survey Q7. What business organization do you identify with? ...	81
Table 20: 2010 Survey Q8. Which best describes your job level?	82
Table 21: 2010 Survey Q9. Which of the following best describes your profession or area of expertise in your current role?	83
Table 22: 2010 Survey Q10. How long have you worked with the company?	84
Table 23: 2010 Survey Q11. Which age group do you belong to?	85
Table 24: 2010 Survey Q12. Where is your current work location?	86
Table 25: 2010 Survey Q13. You selected the United States as your work location. Please specify.	87
Table 26: 2010 Survey Q14. You selected Northwest Europe/Eurasia as your work location. Please specify.	89
Table 27: 2010 Survey Q15. You selected Africa as your work location. Please specify.	90
Table 28: 2010 Survey Q16. You selected Asia/Asia Pacific as your work location. Please specify.	90
Table 29: 2010 Survey Q17. Please share any other comments or suggestions below.	91
Table 30: 2010 Survey Q18. You may choose to participate further in this or other related research/feedback collection, or to receive periodic updates. You may select more than one.	92

EVALUATION OF AN ENTERPRISE LEARNING MANAGEMENT SYSTEM

LIST OF FIGURES

Figure 1	The Learning Center usage by month, 2008 – 2010.....	95
Figure 2	Four broad areas of improvement, with action items.....	103

Chapter I

Introduction and Overview

In this dissertation, a program evaluation method adopted from Maher (2012) was used to evaluate a newly implemented enterprise learning management system (LMS) and its content (e-learning modules and instructor led workshop registrations). The evaluation focused on the overall company uptake and usage of the LMS, the perceived value of such resources to the employees of the company, and the desired improvements for the system and its content. The results of this formative evaluation served to guide both immediate and future enhancements so that the learning and development needs of the company were better met. The main program evaluation questions to be answered were:

- What is the perceived value of The Learning Center (the branded LMS) and e-learning at *Company XYZ*?
- What are the key areas of improvement to focus on (system and content)?
- Was there successful adoption of The Learning Center and e-learning?

Data from several different sources were used to examine the perceptions and opinions of the employees at the company. An electronic survey was implemented to a global audience, and focus groups and interviews were conducted with targeted audience members that had additional roles or an invested interest in the LMS (i.e., human resources, training managers and administrators). Archival data from several sources were analyzed for themes and referenced, including the most recent employee engagement survey section focusing on training and development, system reports from the LMS, and the results of an initial pulse survey during the pilot period of the LMS.

Consequently, the literature review will address organizational learning, knowledge management and relevant case studies on e-learning and learning management system implementation and evaluation.

Organizational Context

At the time of the study, *Company XYZ* was a global integrated energy company with three major divisions: an upstream exploration and production organization (E&P), a downstream marketing and refining organization (M&R), and a number of global corporate support functions (CORP), such as Finance, Human Resources, Information Technology and Legal. A variety of professions and jobs existed across these divisions – from geoscientists and engineers to gas pump operators and sales associates at retail sites. The 2008 *Company XYZ* employee engagement survey covered the perceptions of all of these groups, and one of the main themes that emerged indicated that training and career development were one of the top areas for improvement. As part of the action planning following the survey and the strategy of a growing learning and development (L&D) department, *Company XYZ* implemented an organization-wide learning management system with a library of e-learning courses. Another impetus for a global LMS was the increasing business unit demands to have a central system capable of supporting and tracking e-learning and instructor-led training (ILT), so that global populations could be reached efficiently and effectively when it came to targeted training, including for compliance reasons.

Learning management systems primarily serve two major functions: (1) as an access point for learners to participate in the company's training opportunities (e-learning and course registration) and (2) to provide administrative features such as

tracking and reporting. Organizations can internally build and manage their own LMS, or more commonly, rely on external vendor solutions that provide software as a service (SaaS) solutions. Either way, an internal role or team is usually still involved with managing the system and building adoption by corralling learning and development initiatives and events into the system and maintaining system functionality.

At the time of this research, *Company XYZ* did not have a strong e-learning culture in place nor did it have a central system to manage training. The global learning and development function itself was only a few years old and consisted of three professionals to support an organization with approximately 14,000 employees. As the need to track and disperse training across the globe increased, different business units began to look into individually purchasing a system to fulfill this need. To prevent multiple and redundant systems, a core project team composed of cross-functional and cross-business members was quickly formed to address this dilemma.

After an analysis of the existing options, the team proceeded to support the expansion of one LMS that was being utilized by the retail business. This business unit had unique needs – it was part of the M&R organization with retail site operations in over 1,350 locations – most with limited internet bandwidth. The retail division had opted to use a vendor in 2006 that offered an offline course player solution; one where a software application stored and played e-learning courses and collected individual course progress offline, thus solving the bandwidth issue. The locally recorded results on the site computer would then be uploaded or synched up with the LMS during low internet traffic times (i.e., late evening hours over the weekends). The retail division needed to address workplace compliance training for managers and required a consistent

curriculum for its high turnover hourly population. They created a set of customized e-learning courses specific for their operations and deployed it using this innovative method.

Based on the success of the system in this business unit, the project team decided, as an interim solution, to adopt this particular LMS for global purposes. In 2007, the project charter was to expand and implement the company's first global learning management system – rebranding it to be called The Learning Center. The offline player solution was desirable since there were other business units where internet bandwidth was low or non-existent (i.e., offshore drilling platforms), and remote laptop users would also benefit from downloading courses to play in areas where internet connection might be restricted (i.e., on an airplane). Since the majority of the locations outside of retail operations did not have bandwidth restrictions, the solution could also leverage the main web-based part of the LMS, offering more flexibility to its users.

The expansion of this system involved collaboration between multiple departments: human resources (primarily L&D), information technology (IT), and the various functional or operational training program managers across the business units. Once the system was globally “live,” the project team disbanded and the L&D team led the responsibility to increase system-wide adoption and to establish an on-going governance structure and community of practice. The system launched during a period of reorganization efforts and organizational goal reprioritization, driven by the economical atmosphere of a recession. The strategy, in light of the economic environment, was a “soft launch.” The Learning Center was tied with existing communications processes and company initiatives rather than announced as a

standalone initiative. For instance, during performance objectives-setting time at the beginning of the year, communications posters and memos referenced resources in The Learning Center to help employees craft their objectives. Other factors, such as the decentralized and ‘matrixed’ organizational culture of *Company XYZ*, and the relatively new corporate L&D team also held implications. In this study, L&D, will be used to refer to a function within Human Resources that is responsible for the company’s philosophy and processes around career development planning, leadership development programs, professional development programs, coaching and mentoring, team and organizational development, and traditional training design and delivery. The primary researcher at the time of this study was part of the L&D team, as well as the LMS implementation project, and became the manager of The Learning Center and its processes.

After the project team disbanded, system administration and process ownership resided in the L&D function. Working with the various functional training managers across the company, content was identified, created or purchased, and then uploaded into the system to be shared with the relevant audience and tracked for usage. In the beginning, content in The Learning Center was limited, as well as the budget to expand the offerings. Initial work to integrate existing e-learning courses was conducted, and included a set of management-level courses and some business-specific custom content. To engage more participation from the businesses to adopt e-learning, a pilot of fifty ‘off-the-shelf’ courses from a variety of topics was secured. These were courses predesigned by a vendor without any customization. The intent was to get feedback and gain traction with the various business groups. Several off-the-shelf e-learning courses

were identified as resources for the broader employee population, such as Microsoft Office training and general leadership development courses.

Following the needs assessment phase (data collection through an electronic survey and focus groups), a project was initiated with the goal to resolve some of the limitations that were identified through the assessment data. The objective was to resolve system, content and process issues, and to re-launch the new and improved version of The Learning Center, with a target of communicating to the broader organization in the first quarter of 2012. More resources were allotted to the effort, and a formal business champion at the senior vice president level was identified to sponsor the initiative. The system administration was formally handed over to a specialist in the HR information systems team, and the author continued as the business lead and process owner through the official launch.

The Role of the Learning and Development Function and Technology

Over the past decade, there has been a shift in focus from training to performance support in organizations. Performance support is the term used to describe anything that enables individuals to efficiently accomplish tasks or jobs with minimal reliance from other people, and training departments evolving into learning and development departments are increasingly integrating the concept of performance support into their tools and processes. Traditional training departments are also continuously being asked to be accountable for how training programs and processes add business value. Learning and development functions, with the goal to provide performance support, are leveraging technological advances and tools to deliver content and evaluate learning in more effective ways for both the learner and the organization.

Chief Learning Officers (CLO) are becoming more prevalent and prominent in the executive circles in organizations, and are expanding the L&D function to more than just delivering training courses; they are linking investment dollars in learning and development to the performance and success of the overall business strategy.

Spirgi and Gebavi (2007) expressed that it is rare to have the learning and development function fully centralized in one department. Most organizations have a corporate L&D group responsible for enterprise-wide training (such as leadership development, on-boarding), and technical or functional training specialists or departments that are embedded within the business. This kind of decentralized model is common and efficient. The corporate L&D function also typically resides in a human resources structure and is traditionally viewed to be responsible for the design, implementation and evaluation of formal training programs (i.e., leadership development, presentation skills and other “soft skills” type of training). Most of these are instructor-led and classroom-based. However, over the last decade there has been an increasing role for L&D to leverage technology so that “training” or learning can occur through different delivery methods and in much less formal environments than a classroom.

Computer-based training (CBT) has been around since the 1960s, but it was not the most engaging format and was limited by connection speed and unfriendly graphical user interfaces (GUIs). The advances in internet technology, coupled with advanced graphic design and animation applications, have brought in e-learning (also known as web-based training, or WBT) as a corporate solution to disseminate training to the masses in an engaging but yet in a cost-effective and efficient manner, when the

conditions are right. Factors such as the company's technical infrastructure, organizational culture and readiness, rate of adoption of technology, executive sponsorship and others all determine the success of e-learning in an organization. The role of the learning and development function is increasingly focused on how to harness e-learning and continuously advancing technologies in a way that brings meaningful learning experiences to the individual, team and organization. Information technology departments are responsible for keeping up-to-date with technology trends and making new tools and systems available to the organization. The uptake and application of these new tools, however, depends on different functions within the organization. It is the learning and development function's responsibility not to only understand what these new tools are, but also to apply them and build them into the design and delivery of training content. The L&D department takes an active role to model the desired behavior and engages others in learning that behavior to enhance performance. Traditional classroom training is no longer the only area that L&D is responsible for, and the shift from formal traditional methods of training to blended approaches using technology and collaborative frameworks has placed learning and development functions in a new arena.

Despite the value that L&D brings, during times of organizational hardship, companies look at short-term cost cutting efforts and often eliminate or slow down learning and development programs. The challenge then becomes how to retain knowledge and preserve organizational learning in these contexts, and how to bring people up-to-speed with limited resources and time. Many organizations then rely on or turn to e-learning and learning management systems to provide the answer as an

efficient and effective solution. However, while the technology and tools may be available, the adoption and integration into the organization's culture is a process that requires an organizational learning curve if it is not familiar with this form of learning. For organizations that do not have a deeply embedded organizational culture of learning and development, these challenges are elevated, and clear objectives and methods of evaluation need to highlight the impact and value that such initiatives have in the organization.

Chapter II

Literature Review

This chapter will include an overview of the literature on learning, with a special emphasis on organizational learning and knowledge management theories and practice. Different modalities or delivery systems used in the learning process will be discussed, including the use of technology and a brief review of the history of e-learning. This chapter will also define what learning management systems are, how they are used and different case studies of how they were implemented. The program planning and evaluation methodology used in this research will also be discussed. Published case examples and "best practices" on e-learning and learning management system implementation and evaluation will also be referenced.

Learning and Training in Organizations

A number of disciplines study how people learn, including psychology, education, philosophy, marketing and human resources. Learning, in the context of an organization, is "the process by which people acquire new skills or knowledge for the purpose of enhancing their performance" (Rosenberg, 2001, p. 4). In turn, enhanced workforce performance positively impacts the organization's performance (e.g., more innovation, better products and services, more production and cost efficiencies, increased market shares). Holman, Pavlica and Thorpe (1997) affirm that learning does not have to be cyclical, but results from the interactive and parallel processes of thinking, reflecting, experiencing and acting. This is a perspective that focuses on the internal processes of the individual.

Mocker and Spear (1982) further identified four types of learning: formal, non-formal, informal and self-directed. The difference between the types of learning is the

learner's control over what to learn and how to learn it. In formal learning, the learner does not control the content or the method. Examples of formal learning are instructor-led workshops and traditional classroom-style courses. In non-formal learning, the learner controls the objectives but not the process. The learner selects the topic, but not how the content is delivered. Informal learning is when the learner controls the process but not the objectives. In self-directed learning, the learner controls and selects what to learn and the process of how that content is delivered. Self-directed learning tends to occur in environments supportive of organizational learning. A topic of research could be looking at the effectiveness of these four types of learning in comparison to each other based on the type of content and individual learning styles. At *Company XYZ*, all four types of learning occurred. Training programs were formal avenues of learning, and resources on the intranet, shared computer drives and on The Learning Center provided non-formal and self-directed learning. On-the-job training, whether formal or informal, occurred as a result of peer and manager-subordinate interactions. The culture of *Company XYZ* was also one that encouraged autonomy and information sharing through people rather than formal documented or structured methods of knowledge-sharing.

The facilitation of learning in an organization can be enhanced through different methods and by using a variety of tools and processes. Instructor-led training is the most recognized and traditional method of learning. Learning through relationships using formal processes such as coaching, mentoring and communities of practice is another common way to encourage knowledge sharing. E-learning uses technology and the internet to push learning content to end-users. E-learning can range from webinars

to computer-based modules to online message boards. The effectiveness of each type of learning depends on the content that is being learned, the intended outcome, the learner's preference or learning style, and other variables.

Since individuals have different learning styles, many organizations have adopted a blended approach to learning delivery. This approach has the goal of combining the best of multiple worlds, and includes components of face-to-face workshops, learning through interaction with others and e-learning. Garrison and Vaughan (2008, p. 148) define blended learning as "the organic integration of thoughtfully selected and complementary face-to-face and online approaches and technologies." Some studies have shown that learning retention is increased with blended approaches (Boyle, et al, 2003; Singh & Reed, 2001). Depending on the learning objectives and the situation, e-learning may be supplemental to the classroom (such as pre-work or post-work), or it can be the dominant form of learning delivery, with face-to-face sessions focused on the actual hands-on application of the learning. The synchronicity of the particular learning program also defines what tools and methods are used. Synchronous learning environments occur in real-time, such as classroom training and live webinars. Asynchronous learning environments, in contrast, do not weigh heavily on time as a factor. Learners interact over the course of a communications medium (e.g., email, online message board) to convey responses and communication to others. Asynchronous learning began at the end of the 19th century, when formalized correspondence education, or distance learning, used the postal system as a means to connect remote learners to instruction.

Organizations have long recognized the importance of a "trained" employee workforce. Training specialists or functions in organizations provide targeted programs and services to support the acquisition or development of new skills or the utilization of new knowledge. Rosenberg (2001) described four main elements of the process of training: intent, design, means and media, and assessment. With training, there is an explicit *intent* to enhance performance, based on results of a needs assessment and reflected in learning goals and instructional objectives. The training has a *design* that is part of a broader learning and measurement strategy that takes into account the specific learning requirements and the attributes of its targeted learners. The *means and media* of how the training is delivered can include traditional classroom workshops, electronic delivery through a variety of technologies, independent study, or through a blended or combination of approaches. *Assessment* or certification capability is also important to determine standards of learning and to evaluate or measure learning transfer.

Rosenberg (2001) also made a distinction between instruction and information. Instruction is focused on specific learning outcomes and purposely designed through a set of criteria for optimum memory retention. It is based on the needs and characteristics of its intended audience and contains presentation, practice, feedback and assessment components. Information, on the other hand, is focused on the specific organization of content, of which its purpose is defined by the users. It is based on the characteristics of the particular knowledge discipline, is intended for optimum reference rather than retention, and is more about effective presentation.

Knowledge Management

Knowledge management is an area that deals with information organization and distribution. Learning is enabled through the delivery system, but the prime purpose and focus of knowledge management systems are the content and its categorization.

Rosenberg (2001, p. 61) described knowledge management as "the creation, archiving, and sharing of valued information, expertise, and insight within and across communities of people and organizations with similar interests and needs."

Knowledge, the accumulation of what is known, can be viewed from both an individual and organizational perspective and it can be explicit or tacit. Explicit knowledge can be codified and documented easily. Tacit knowledge is less concrete and harder to capture; these are heuristics, or one's "rules of thumb," that are often gained through experiences and on-the-job. The purpose of training is to instruct, and it is the optimal method for transferring explicit skills at an individual level. Knowledge management processes, on the other hand, focus on the group or organizational level, and on how to capture and retain tacit knowledge at these levels.

The purpose of knowledge management is to inform and provide resources to its users. It can be described as having three levels, with each level increasingly integrated with the organization and work: 1) document management, 2) information creation, sharing and management; and 3) enterprise intelligence. Organizations generally have "level one" knowledge management tools, or sophisticated online document platforms that allow the retrieval and distribution of information fairly easily. Most organizations have also achieved the second level of knowledge management, a state where the organization is able to effectively create, share and manage new or update existing

documented knowledge sources. At level three, knowledge management processes are so embedded within the organization that the business operation depends on the expertise of the system, and experiences are captured in a way that enables the collective intelligence of the organization. *Company XYZ* had varying levels of knowledge management tools in place and was at “level two” knowledge management. Certain departments exercised the discipline of knowledge management more effectively than others, using complex databases that capture project plans and lessons learned. This was more common in the upstream division, where large-scale engineering projects required specialized knowledge expertise and collaboration. As a whole organization, however, knowledge management processes were not well embedded across the company. This was also due to the nature of the company since there were very different business models within the organization.

Knowledge management is a systematic approach to help information and knowledge emerge and flow to the right people, at the right time, to create value. Life cycle models are commonly used in knowledge management, such as the 3-stage model by Davenport and Prusak (2000): generate, codify/coordinate and transfer; and the 7-stage model by Ward and Aurum (2004): create, acquire, identify, adapt, organize, distribute and apply. Knowledge creation or acquisition is usually the first step in knowledge management, followed by a refinement to make the information relevant. These refined knowledge assets are stored in some capacity until they are transferred or shared for utilization. Knowledge management can be seen as a mechanical and static step-by-step process.

The literature surrounding knowledge management, which aims to systematically manage information, tends to focus on organizational knowledge as an asset or resource that can be created, acquired, captured, categorized and shared; the attention is given to developing systems and processes to use and deploy these knowledge assets effectively across the organization. Knowledge management systems, learning management systems, databases and other systems all aim to capture and categorize information and knowledge in a way that can be applied effectively to the problem at hand. There is scarce literature that directly makes the connection between knowledge management and learning management processes.

Organizational Learning and the Learning Organization

The literature on the topics of organizational learning and the learning organization is prolific, and finds its basis on research focused on individual learning. For instance, Argyris and Schön (1978) applied their single-loop and double-loop theory of learning at the organizational level, and in the context of when an organization detects an error, or a situation that defies the current state. Single-loop learning in organizations occurs when the error that is detected is corrected without any change to its present policies or objectives. Double-loop learning is when the detected error is corrected, but in a way that changes the organization's way of doing things. That is, the organization's underlying norms, policies and objectives are modified as a result of the error. Argyris (1977) argued that most of the learning that occurs is single loop since existing behaviors and conditions are not questioned, and there is a tendency to identify and correct errors so that the current status quo is maintained. This blocks double-loop

learning from occurring, since it is much harder to address discrepancies that conflict with the present-day way of doing things.

In another example where organizational learning theory lends itself from individual learning theories is Kolb's (1984) proposed experiential learning model, where individual learning occurs through immediate concrete experiences and subsequent observation and reflection. Observations from an experience generate a theory, which then guide future actions and new experiences. Organizational learning at a cognitive level occurs when individuals build cognitive maps of their work contexts and modify them in light of subsequent experiences. Collective meaning structures are then built from these individual maps (Dixon, 1994; Easterby-Smith, 1997).

The distinction between organizational learning and the learning organization is still not crystallized, but there have been a number of researchers who have put forth some definitions and differences. Senge (2006) defines learning organizations as “organizations 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.” The learning organization is an environment in which organizational learning is structured so that teamwork, collaboration, creativity and knowledge processes have a collective meaning and value. Senge (1994) also described a Ladder of Inference Model, whereby learning takes place through the following steps: observing data in terms of one's own experience, selecting suitable data, adding meanings, making assumptions, drawing conclusions, adapting beliefs and finally taking actions on these beliefs. Senge (2006) characterizes the learning organization in holistic terms, stressing

that all individuals within the organization work together across boundaries to solve problems and create innovative solutions. He identified five disciplines that must exist as the foundation of the learning organization: (1) systems thinking, (2) personal mastery, (3) mental models, (4) a shared vision, and (5) team learning acquisition or knowledge. *Mental models* are the assumptions that are imprinted in our minds about how the world functions and which guide the actions we make. A *shared vision* is created when the individual views of the leaders of an organization are communicated into ways that all members of that organization can relate to. *Personal mastery* is described as a commitment to continuous learning and challenging oneself throughout one's life. *Team learning* occurs when individual views and insights are maximally integrated through dialogue and awareness of group dynamics that may impact learning. *Systems thinking* is the element that integrates all of these pieces; it is the process of viewing things in light of the context or system they are in.

In relation to *Company XYZ*, Senge's five disciplines exist, again at varying degrees. Mental models are strong, especially for departments that have long tenured employees. Many employees began their careers at *Company XYZ* and the family legacy of the organization is prevalent. Personal mastery is encouraged broadly; individual development plans (IDPs) and career discussions are expected and reviewed on an annual basis. The employee is expected to drive their own development but the manager and organization supports the employee through opportunities, processes and tools. Although *Company XYZ* was one organization, it really operated as three different divisions. A strong vision was not evident until the leadership team actually convened for the first time in the history of the company to share collective feedback towards

where the company was headed (demonstrating that they were capable of team learning acquisition or knowledge). This team worked on and unveiled its 10 year plan (shared vision) in 2010 to the rest of the organization. Even so, the announcement of a “one company” vision is just the beginning. Although there was evidence of systems thinking, much work had yet to be done to support changing the culture of the organization in order for all to recognize this vision. Additional work was needed to transform employees at all levels so that they understand their role in supporting the broader vision. Even though a strong vision exists in writing, it may not entirely be supported in behavior yet. Likewise, team learning is evident more so at the department and division levels rather than across the board. However, this is slowly changing, where it makes sense, as more and more cross-departmental projects were occurring and was buttressed by the organization’s commitment to become a high-performing and learning organization.

Garvin, Edmondson and Gino (2008) defined the learning organization as one where its employees excel at creating, acquiring and transferring knowledge. They also indicate that there are three building blocks of the learning organization: (1) a supportive learning environment, (2) concrete learning processes and practices and (3) leadership behaviors that reinforce learning. Characteristics of a supportive learning environment include psychological safety, appreciation of differences, openness to new ideas and time for reflection. Concrete learning processes and practices include experimentation, information collection, analysis, education and training, and information transfer. The sharing of knowledge can be among individuals, groups or the whole organization. The direction of that knowledge sharing can be lateral or vertical, internally-focused or

externally-oriented. Lastly, leadership needs to reinforce a learning environment.

Leaders must actively question and listen to their employees and role model the behaviors of continuous learning themselves. At *Company XYZ*, a supportive learning environment was dependent upon the particular leader and business unit. Appreciation of differences and openness to new ideas were tolerated at some fronts, but it was a strong “top down” hierarchy, dominated by middle-aged Caucasian men. Since the company was very execution focused, there was rarely time for reflection. Projects were planned and executed, but there were rarely any formal processes for debriefing or reflecting on the successes or learning from areas of improvement. Concrete learning processes and practices were evident on a global scale, as the company was invested in leadership programs and technical training. As noted earlier, leadership varied, and some displayed behaviors that modeled that of a learning organization while others did not.

Confessore & Kops (1998) describe a learning organization as one that generates an environment where self-directed learning is the norm. They also try to make a distinction between the learning organization and organizational learning.

Organizational learning is the process by which new information, determined by the collective as meaningful is communicated by and throughout the collective (Dixon, 1994). Individual knowledge is transformed into organizational learning. There is a body of corporate knowledge that builds within each company, and this determines the organization’s norms, values and culture. In the context of *Company XYZ*, knowledge resided in its tenured employees, who were sought for mentorship. Since the company retained many of its employees, it was not unusual that employees celebrated 10, 20 or

30 years with the company. The collective whole of these tenured employees shaped the familial and relationship-based culture of the organization, and as long as these valued employees were still with the company, the organizational learning through the years remained intact. The company was known for its employment stability, and many employees began their careers and retired with the company. Like many companies, however, the transfer of knowledge to newer generations was an area that was of concern, and programs (including mentoring and documentation through video) were set up so that there was retention of the knowledge, even after these employees retired.

Pedler, Bourgoyne and Boydell (1991, p. 1) see the learning organization as "an organization that facilitates the learning of all its members and continuously transforms itself." Garvin (1993, pp. 80) defines a learning organization as 'an organization skilled at creating, acquiring and transferring knowledge and at modifying its behavior to reflect new knowledge and insights.' He described five main activities of the learning organization: problem-solving, experimentation, learning from experiences and history, learning from best practices of others, and efficient transferring of knowledge and skills within the organization. *Company XYZ* displayed some of these five elements of the learning organization. For example, problem-solving and experimentation were strong characteristics of the retail and marketing division since it was the largest consumer-facing part of the company. In order to effectively compete with other retailers, this division had to constantly innovate through its brand marketing efforts in order to differentiate itself. The other business unit, exploration and production, on the other hand, also has a strong desire to problem solve and experiment; they have the daunting task of identifying oil and gas reserves deep in the ocean bedrock or earth, and need

cutting edge technology to do so efficiently and effectively. Learning from both experiences and history as well as learning from the best practices of others were fostered within the company in order to remain competitive on all sides of the business. However, there was very little transfer of knowledge, best practices, skills and learning across the different units in *Company XYZ* since its particular divisions were highly specialized. The company was in the process of developing these five activities on a global basis.

Easterby-Smith (1997) indicated that learning organizations are built by empowering employees in the development of their working context and, therefore getting employees committed to continuous personal development is crucial. *Company XYZ* emphasized individual development plans for every employee on a global level and provided references and tools, but the leaders and particular culture of the business units defined the enforcement of such beliefs. Pockets of excellence in these practices existed in various places across the company, but as a whole, there were still areas of opportunities.

Organizational learning, on the other hand, is a concept that first emerged in the 1960s, stemming from work done in single and double-loop learning. It is an elusive concept that has been defined in multiple ways, and often used in conjunction with term "the learning organization." Argyris (1977) defined organizational learning as a process of detecting and correcting error. The goal of organizational learning is to become a learning organization, one that is "skilled at creating, acquiring and transferring knowledge and at modifying its behavior to reflect new knowledge and insights" (Garvin, 1993). When one speaks of a learning organization, it refers to a more of a

pragmatic approach of identifying the characteristics of an organization that successfully learns.

Organizational learning is the ‘activity and the process by which organizations eventually reach the ideal of a learning organization’ (Finger & Brand 1999, p. 136). Stata (1996) described organizational learning as a collage of individual learning processes; the joint learning of its members resulting in shared insights, knowledge and mental models. This collective learning builds upon existing knowledge and experiences, which are then stored in the organization’s memory. The organization’s institutional mechanisms (i.e., policies, strategies, explicit models) enable the knowledge to be retained. The retention of knowledge can be through those processes and systems traditional to the knowledge management discipline. However, it is not entirely clear what the transformation point looks like from individuals to the collective in Stata’s model. At which point does individual learning collate to become the collective organizational phenomenon?

Lahteenmak, Toivaonen and Mattila (2001) pointed out that the most common theories of organizational learning focus on the individual and do not describe how individual learning is actually translated into organizational learning. They indicate that these models point to the role of the leader as the driver behind the learning process, and that the concept of organizational learning has not been fully flushed out, making measurement hard. They also ask three questions:

- Who is learning – the individual or the organization?
- What factors affect learning – what are the elements of a learning organization?

- How does learning happen – what is known about the learning process?

The measurement of organizational learning has also turned out to be difficult. Measurement is problematic since the construct itself has multiple definitions. Research by Collis (1996) points to the notion that the process of organizational learning is complicated, and its existence and effectiveness cannot be measured directly but only through business results in the long run. Scales have been developed in attempts to quantify the measurement of learning at an organizational level. For instance, Tannenbaum (1997) studied 500 people in seven companies and identified the 9-Factor measure for learning conditions. These include: (1) changes in routines, (2) the organization of work processes, (3) feedback and reward systems, (4) climate and culture, (5) management support, (6) information flow, (7) the openness of communication, (8) participation in decision-making, and (9) teamwork. However, this scale as well as others, is still based on individual perceptions of organizational learning.

More concrete measurement can be made at a programmatic level. Kirkpatrick and Kirkpatrick (2007) proposed four levels of evaluating training programs:

- Level 1: Reaction. Did the learner like it? This measure is often captured through course evaluation sheets.
- Level 2: Learning. What did the learner take away and apply? Was the learning content used on the job?
- Level 3: Behavior. Has the application of the skill been effective in facilitating better and faster performance? As a result of applying what was learned on the job, was there a change or improvement in behavior?

- Level 4: Results. What was the impact to the business, or the return on investment (ROI)?

The Kirkpatrick model is popularly used in corporate settings, but often does not go beyond level 1 or 2 in practice. *Company XYZ* did not have a standard approach across all of its training programs, but when there was program evaluation, it was generally done at level one. Level one measures often asked how the participant would rate the program, but different scales were used and there were no consistent way to measure or collect evaluation data across programs.

Efforts have been made to categorize the various definitions of organizational learning. Easterby-Smith (1997) reviewed the literature and grouped the theories into six academic perspectives, or disciplines: (1) psychology and organizational development (OD), (2) management science, (3) sociology and organizational theory, (4) strategy, (5) production management and (6) cultural anthropology. From the perspective of psychology and OD, human development is the central idea. There is a hierarchical nature in the learning process (Bateson, 1973), and individuals build cognitive maps based on context, which can be revised through experiences (Dixon, 1994). These individual cognitive maps can be explicitly shared with others (Kim, 1993), a process that Nonaka (1994) called the spiral of knowledge, where tacit knowledge converts into explicit knowledge, transferring from the individual to the group and then to the organization. Nonaka (1994) defined tacit knowledge as knowledge that cannot be easily codified or documented – it resides in people, is acquired through experiences and is informally communicated, whereas explicit knowledge is easily documented and can be explained instructionally. As an example of

tacit knowledge, in *Company XYZ*, there were many informal processes on getting approval on projects – it was not entirely straightforward on how some received approval whereas others did not – decision-making was done through a socialization process, but final approval by the CEO could be denied based on a number of factors, including who was presenting and how it was presented.

Kolb, Rubin and McIntyre (1973) described four stages of effective individual learning, from concrete experience to reflective observation to abstract conceptualization and then finally to active experimentation. Dixon (1994) transferred this to an organizational learning cycle – inferring that information is generated through individuals' experiences, which are collectively shared and interpreted, leading to action. The work on different learning styles of individuals (Kolb et al, 1973; Honey & Mumford, 1982) also transferred to the organizational level – organizations create their own style based on the collective preferences of the individuals within it or as a consequence of how they obtain and share information (Talbot & Harrow, 1993, as cited in Easterby-Smith, 1997). The disciplines of psychology and OD also encompass the work around the natural resistance of individuals and organizations to put the learning from experience into actionable behaviors. When there is a conflict between one's espoused theory and the actual theory-in-use, defensive behaviors can occur (Argyris, 1992), and this can also translate at the organizational level. Dialogue and communication is the key to improving organizational learning (Isaacs, 1993; Schein, 1993). The question remains, however, on whether there are any distinctions in learning at different levels: individual, group and organizational.

The management science perspective of organizational learning is characterized by the gathering and processing of information, and includes the systems thinking perspective. Huber (1991) indicated that learning occurs when an entity's repertoire of potential behaviors changes through the processing of new information, and an organization learns when it processes information or knowledge that is viewed as useful. His review of the literature recognized four processes that occur with organizational learning: knowledge acquisition, information distribution, information interpretation and organizational memory. An organization accumulates knowledge through existing or inherited knowledge of its employees, as well as through the knowledge that new employees bring. This knowledge is distributed and interpreted across the organization; an act in which itself can create new information (Huber, 1991). Huber (1991) also highlighted the difference between knowledge, a more complicated product of learning versus information, a data point that helps to reduce uncertainty. Nevis, DiBella and Gould (1995) built upon Huber's model and described organizational learning as containing the three elements of knowledge acquisition, knowledge sharing and knowledge utilization.

Easterby-Smith (1997) also included the systems thinking perspective as part of the management science discipline, which is characterized by the work of Senge (2006) and Zuboff (1988). Senge (2006) found that feedback loops can magnify events and ramifications at the local level to impact the whole system – both up and down and across organizational levels. Zuboff (1988) created the idea of informing, defined as using information technology to unleash individual potential or as a means of control. Organizational learning can be hindered or helped through informing. In *Company*

XYZ, the company's intranet, digital displays and email system were technologies that allowed the mass communication of ideas and news to the whole or parts of the organization.

Politics and non-rational behaviors can impact organizational learning, as well as constant conflicts between short-term needs and long-term desires. Huber (1991) identified political behavior as the culprit for blockage (information distortion and suppression) in organizational learning, and Senge (2006) offered commitment to open dialogue as a means to rise above politics. In *Company XYZ*, some major decisions were made behind closed doors, with the ability of employees to influence those choices if they had the right conversations with the right people at the right time, but once the decisions were made and announced, town halls were held to share the knowledge and encourage open dialogue. Questions could be asked publicly to leaders in the town hall setting, or emailed anonymously through an online system to be read and answered openly during the forum.

Many models do not address the phenomenon of change in organizational learning. Lahteenmaki, Toivonen and Mattila (2001, p. 122) indicated that 'learning and change are not only parallel and simultaneous, but are also interactive processes, as learning has a mediating role in the change process.' Many times an organization must unlearn existing behaviors and practices before it can absorb and integrate new learning. Unlearning, which is a healthy process in times of rapid change, can occur when an organization's old knowledge is buried under new knowledge, or when established organizational knowledge is questioned abruptly due to some event or series of events. Hedberg (1981) believed that organizational learning results in the development of new

norms, mental maps and behaviors, which creates more effective performance and organizational commitment. It is connected to an organization's culture, visions and values, and any changes to these require the process of unlearning. He also believed that the process of organizational unlearning is more difficult than the organizational acquisition of new knowledge since organizations tend to hold onto values, traditions and old ways of doing things. Argyris (1990) referred to this as change resistance, or a resistance to unlearn, in which the organization develops defensive routines in order to avoid unlearning. There is comfort with the familiar, and any move away from the established norm can be seen as a threat.

The sociological and organizational theory perspective of organizational learning focuses on the inevitable effects of social systems, power structures and organizational hierarchies, and organizations must work within these contexts rather than attempting to minimize them through information systems. Within this perspective are also several distinct views: functional, contingency, constructivist and critical. The functional view looks at the organization's structural challenges in the context of the environment and its reaction to changes. In contrast to the science management view, internal political and hierarchical conflicts are inevitable and necessary to further the organizational learning process. A contingency view posits that each organization is different in how it approaches organizational learning, and this is based on the nature of the organization itself. Shrivastava (1983) offered two types of typologies - a "bureaucratic" style where there are formal management systems in place to ensure good information, planning and control; and a "participative" style where informal interactions and ad hoc teams share information based on relevance. The constructivist view, on the other hand, emphasizes

informal learning and views formal training and information processes as ineffective if they do not take into account the informal practices where the real learning occurs, but it ignores hierarchical and group motivations. The critical view, however, takes into account hierarchical differences.

The question then arises in terms of who is or should be responsible for governing information and knowledge within an organization. Differing opinions call for top management (Garratt, 1987) while others call for a broader and more collaborative approach towards decision-making (Senge, 1990) or for middle management to be the responsible party for relaying strategic knowledge into operational procedures (Nonaka, 1988).

The fourth view that Easterby-Smith (1997) reviewed was that of the strategic perspective, which revolves around the notion of competition and having a competitive edge between organizations. Whittington (1993) distinguished between an "evolutionary" and a "processual" view of strategy. The main concern with the evolutionary view is the assumption that learning is integral to the survival of organization, with some views using a Darwinian approach in which the environment dictates which organizations survive, based on their existing criteria that happen to be favorable (Hannan & Freeman, 1988; Pennings, et al, 1994). Others point to strategic alliances (Parke, 1991) or the transfer of knowledge between organizations and collective learning (Miner & Haunschild, 1995) as the basis for why some organizations survive environmental changes. The processual view, in contrast, focuses on (1) the reciprocal relationship between strategy and learning, where the strategic frameworks

influence an organization's learning, and (2) how an organization's learning style will influence the strategic frameworks that are created (Fiol & Lyles, 1985).

Another related area of research that touches on the strategic perspective of organizational learning are those conducted on technology transfer. For instance, in the rapidly changing biotechnology industry, the relative success of a company is linked to its ability to learn quickly (Dodgson, 1991). Carr (2003, p. 43) indicated that a technology company creates a competitive edge when they have "superior insight into the use of a new technology." He distinguished between two types of technology: infrastructural (shared or open technology) and proprietary (owned by a single company). Infrastructural technology often initially begins as proprietary and this is where companies can gain a competitive advantage. The window to do so is relatively slim once that technology becomes more heavily invested in, commercialized and available more broadly.

Competitiveness between and within organizations also creates impediments to organizational learning, such as pressures to meet aggressive timelines and the need to produce results rapidly. This gives individuals and groups less or no time to reflect on current processes and communication methods that may actually be more effective (Elmes & Kassouf, 1995). Organizational learning then becomes a competitive advantage and the exchange of knowledge and information is crucial, especially among technology-focused industries.

In *Company XYZ*, marked distinctions between the upstream and downstream divisions existed. The company business strategy was built on the tenet that the profits from the downstream were used to fund the capital-intense projects of the upstream, so

this created hierarchical dynamics between the two divisions, and the downstream was perceived as the “cash cow.” The downstream business was very execution focused and competitive in nature due to this strategy and also in reaction to an oversaturated marketplace with many competitors. Marketing and sales incentives drove internal “friendly” competition and fostered a more opened approach to innovation.

The production management perspective of organizational learning is based in the view that individual or group learning impacts organizational productivity and/or effectiveness. This perspective introduces the concept of the "learning curve," defined as "the idea that the production costs of any product reduces in proportion to the cumulative number of units that have been produced (Buzzell & Gale, 1987, as cited in Easterby-Smith, 1997). The criticism to this view is that there is a sole focus on output, when other potentially more critical factors may impact organizational learning. In addition, the source of knowledge or learning, whether endogenous or exogenous (internal or external), has been shown to affect productivity - the mastery of one set of process may not necessarily improve productivity after a learning curve; rather the integration or blending of new knowledge from outside the internal environment may play a more significant factor in increased productivity or effectiveness.

This also leads to the literature which examines the cultural perspective of organizational learning, where the beliefs and values of a particular group are important in how learning occurs. Hofstede (1984, p. 21) defined culture as "the collective programming of the human mind which distinguishes the members of one human group from another." Who sets the culture? From an organizational perspective, the culture of a particular organization can be determined by its leaders (Deal & Kennedy, 1982).

Or, the values and identities of a culture can be seen as being determined by the constant struggles between two or more groups of organizational members (Carroll, 1995).

Since *Company XYZ* had a strong family legacy, with its current CEO the son of the founder, there was already a strong heritage that set the tone. The values of the company were grounded in how the leaders behaved, and the founder was known to negotiate and keep to deals based on a simple handshake. Long tenured employees with 30 to 40 years of service were not uncommon at *Company XYZ*. There was a strong desire to preserve traditions but yet innovate and stay competitive. The company integrated the new and old at varying degrees of success. The challenge with many companies that are based on strong figureheads is sustaining that heritage while modernizing and adapting to the changing environment.

Much of the literature on the cultural perspective was initially grounded in comparisons of communication and learning styles between the United States and Japan (Hedlund & Nonaka, 1993; Shibata et al, 1991; Sullivan & Nonaka, 1986), leading to the understanding that culture impacts organizational learning processes and that it may be difficult to transfer knowledge from one cultural setting to another. Under the cultural perspective, learning is a result of the community and not individuals. Learning itself may be different and varies in different settings. Garvin (1993) pushed the idea that systematic problem solving and ongoing experimentation are necessary for organizational learning.

Fiol and Lyles (1985) made a distinction between organizational learning from individual learning. They stated that 'organizational learning means the process of improving actions through better knowledge and understanding' (1985, p. 803). They

also believed that organizations develop and maintain learning systems that impact their immediate members. These are then transmitted to others through an organization's history and norms.

Cummings and Worley (1997) indicated that the individual members of an organization can learn while the organization does not, and that organizational learning can occur even though its individual members do not learn themselves. They felt that the function of organizational learning is to serve the organization's purposes, and it is embedded with the organization's structures. Therefore, organizational learning is retained with the organization independent of any individual change of membership. Like many other theories of organizational learning, however, there is not a clear process or understanding of how the organizational learning actually occurs, despite lack of individual progress, or how organizational learning can be obstructed, despite learning actually occurring at the individual level.

Linking Organizational Learning and Knowledge Management

The LMS is often utilized to centralize learning and development events and objects in a way that is easily accessible for employees, and this learning technology can also be a vehicle to promote knowledge management and organizational learning. The implementation of a learning management system with electronic content (and, in essence, an e-learning culture) involves acknowledging the level of organizational readiness and existing infrastructure. The implementation of any new system or technology into an organization involves managing change and is also an opportunity for organizational learning. Depending on the organizational culture and the implementation process, a technological system can be adopted or shunned. The

planning and design phase needs to address the different levels of support from stakeholders, craft the right communications plan and solicit the collaboration of multiple groups in order to successfully integrate an enterprise system.

The outcome of both frameworks (organizational learning and knowledge management) points to successful, more efficient and higher performing organizations; quick to learn, find or apply its internal body of collective knowledge and processes to the changing business landscape. Both also view that organizational knowledge is a competitive advantage. The approach between the two perspectives, however, is different and separate bodies of literature have formed over the years without much cross-over until recently. There has been argument that the research may be looking at the same phenomenon using different perspectives and terminology (Vera & Crossam, 2003).

Easterby-Smith and Lyle (2003) first presented a shared conceptual framework between knowledge management and organizational learning, whereby both are viewed in regards to their focus on process versus content and theory versus practice. They explain that organizational learning tackles the theoretical process question of: How does an organization learn? Knowledge management, on the other hand, looks at the practical usage of the content and asks: How should knowledge be categorized and managed? The two concepts may in fact be complementary and interdependent in order to achieve a common goal of organizational effectiveness.

Learning Technologies and E-Learning

The transmission of information and instruction has always been a cultural component of human beings from the beginning of our existence. Traditional instructor-

led training (ILT), where an instructor facilitates a class of learners within a physical space, is a familiar practice and has continued to be the basis of the education system today. However, other methods of learning evolved to overcome the limitations of where the instructor or subject matter expert is, and where the learners are based on geography.

The first technology aimed at disseminating information to the masses took root in the 1920s and 1930s, when recorded audio was broadcasted over the radio. Then film technology took hold, adding a visual component to information sharing, and the U.S. military during World War II capitalized on this emerging innovation (Rosenberg, 2001). The U.S. military needed a way to disseminate information and instruction on a mass scale and in a rapid manner. Military researchers partnered with universities, using the underpinnings of behavioral and cognitive psychology, to create training films and other materials for instructional purposes. The heavy investment made in training was influential in the U.S. victory in World War II, and additional funding propelled the research and development in this area after the war. Teaching machines were built and instructional film extended to the public domain, most notably for schooling children.

Television was the next technical vehicle to deliver learning. Huge excitement surrounded the advent of the “tube,” but it did not meet revolutionary expectations - cable wiring was cost prohibitive, and left little funds to create the actual programs themselves. Instructional design was not applied to early educational TV shows, and they lacked appeal. The usage of the television also failed to deliver its educational promise since it had a missing but crucial component: "the ability to interact with the

learner, provide feedback, and alter the presentation to meet the learner's needs"

(Rosenberg, 2001, p. 22). It was one-way dissemination of information.

Research and development of computer-based training (CBT) began in the 1970s and 1980s, but did not really make a huge impact until more computers made their way into the home. Even then, there were compatibility issues and limitations in hardware and software, not to mention constant changes in computer technology and media which made it difficult for developers to create more sophisticated learning programs. Limited hard drive space, slow processors, weak graphics and lack of instructional design principles rendered the first CBT programs into "drill and practice" programs. Learners would read a few screens full of text and limited graphics and then asked to respond to questions that did not provide much feedback. CBT was the option used by trainers to run large numbers of people through training in a short amount of time, or to provide stable content to the masses over a longer period of time. The field of instructional design, which began to burgeon during this era, evolved to provide a systematic way of designing training that focused on identifying critical success factors and methodologies for effective learning.

The advent of the internet (the world-wide web) and technological improvements, including universal internet protocols and browsers, in the 1990s spawned a number of reactions. A host of online learning portals sprouted (e.g., www.about.com); more and more universities began to offer higher education online or distance learning programs; and businesses moved to create a web presence and educate its consumers about its products and services. The internet provided a universal delivery and collection method of information and instruction, and organizations began to

harness its potential internally with employees. E-learning became the encompassing term for the phenomenon.

Electronic learning, better known as e-learning (also written as E-learning, e-Learning, E-Learning, elearning) has become an encompassing term to include everything from web-based training (WBT) to online learning (OLL) and technology-based training (TBT) to name a few. A number of acronyms have evolved to describe e-learning, including CBI (computer based instruction), CAI (computer assisted instruction), and CAL (computer assisted learning) (Watson & Watson, 2007). Romiszowski (ed., 2004) counted more than twenty different definitions of the term in fifty articles. In Romiszowski's review of the literature, which spans across disciplines such as information technology, education, management and performance management, he categorizes four components of the e-learning process: (1) the electronic or technology part of the process, (2) the learning, (3) the project or process management pieces, and (4) the organizational or personal needs.

Kaplan and Ashley (2003) identified and categorized the various electronic tools that are commonly used in synchronous and asynchronous learning environments (Tables 1 and 2). They listed positive and negative aspects for each tool. Video or web conferencing tools (also called webinars, or web seminars), such as Webex, GoToMeeting, Elluminate, Adobe Connect and Live Meeting, are being used more broadly in both academic and corporate settings as a way to bridge knowledge transfer across prohibitive barriers, such as geographical distances, without losing the human interaction element. Webinar tools enable the transmission of video, audio and images,

as well as the ability to share desktop applications. These are also a very cost-effective way to provide synchronous (real-time) learning.

Table 1

Synchronous Electronic Learning Tools (Kaplan & Ashley, 2003)

Tool	Useful for	Drawbacks
Audio conferencing	Discussions and dialogue	Cost, especially when international participation is involved
Web conferencing	Sharing presentations and information	Cost, bandwidth; may also require audio conferencing to be useful
Video conferencing	In-depth discussions with higher-touch interactions	Cost, limited availability of video conferencing systems
Chat	Information sharing of low-complexity issues	Usually requires typing, "lower touch" experience
Instant messaging	Ad hoc quick communications	All users must use compatible system, usually best for 1:1 interactions
White boarding	Co-development of ideas	Cost, bandwidth; may also require audio conferencing to be useful
Application sharing	Co-development of documents	Cost, bandwidth; may also require audio conferencing to be useful

Table 2

Asynchronous Electronic Learning Tools (Kaplan & Ashley, 2003)

Tool	Useful for	Drawbacks
Discussion boards	Dialogue that takes place over a period of time	May take longer to arrive at decisions or conclusions
Web logs (Blogs)	Sharing ideas and comments	May take longer to arrive at decisions or conclusions

Table 2 - Continued

Messaging (e-mail)	One-to-one or one-to-many communications	May be misused as a "collaboration tool" and become overwhelming
Streaming audio	Communicating or teaching	Static and typically does not provide option to answer questions or expand on ideas
Streaming video	Communicating or teaching	Static and typically does not provide option to answer questions or expand on ideas
Narrated slideshows	Communicating or teaching	Static and typically does not provide option to answer questions or expand on ideas
"Learning objects" (Web-based training)	Teaching and training	Typically does not provide option to answer questions or expand on ideas in detail
Document libraries	Managing resources	Version control can be an issue unless check-in / check-out functionality is enabled
Databases	Managing information and knowledge	Requires clear definition and skillful administration
Web books	Teaching and training	Not dynamic and may lose interest of users
Surveys and polls	Capturing information and trends	Requires clear definition and ongoing coordination
Shared Calendars	Coordinating activities	System compatibility
Web site links	Providing resources and references	May become outdated and "broken"

However, these virtual tools are not without challenges. Wang and Hsu's (2008) study of webinar sessions indicated that participants described the experience as "rich" under two circumstances: when the content was related to conceptual knowledge or basic procedural knowledge, and when the instructor was able to facilitate interaction amongst the virtual participants. They identified five advantages to webinars: cost-effectiveness, ability to provide synchronous communication for immediate feedback,

facilitation of real-time multimedia demonstrations, the ability for the facilitator to manage multiple interaction levels with participants and the ability to archive webinar materials for future reference or review.

Rosenberg (2001) differentiated e-learning as the use of internet technologies to deliver knowledge and performance enhancing content. He described three basic criteria of e-learning. First, e-learning is networked, which enables information or instruction distribution, storage and retrieval capabilities and instant updating of content. Secondly, e-learning uses the internet to deliver content to the learner. Lastly, it is not limited to traditional training paradigms (i.e., CBT), which means that it goes beyond "training" and includes information and tools that enhance performance.

An increasing number of e-learning authoring tools are available, such as Adobe Captivate, Articulate Presenter and TechSmith Camtasia. In addition, there are as many, if not more, types of learning management systems in the marketplace (e.g., Plateau, SAP Learning Solutions, Saba, SumTotal, SkillSoft SkillPort). This also means that there is a variety of formats and requirements between systems and files.

Interoperability between e-learning assets and the learning management system where the content resides in can be problematic.

Multiple e-learning protocols have formed through the short history of e-learning, such as the standards developed by the Aviation Industry Computer-based Training Committee (AICC), EDUCAUSE Instructional Management Systems Project (IMS) and the Institute of Electrical and Electronics Engineers Learning Technology Standards Committee (IEEE LTSC). In 1997, the U.S. Department of Defense formed the Advanced Distributed Learning (ADL) initiative to help promote interoperability

across all platforms. They developed the Sharable Content Object Reference Model (SCORM), which was built based on all of the existing programs, and is a model for defining, packaging, and managing learning objects - "the smallest "chunk" of instruction or information that can stand alone and still have meaning to the learner" (Rosenberg, 2001, p. 170). A learning object (LO) is defined as any digital media that can be reused to support learning (Watson, Lee, & Reigeluth, 2007). It can be a module, an electronic document or a video clip, and is the building block of a topic, a lesson or a course. The learning object is called the sharable content object (SCO) in SCORM standards. Currently, SCORM version 1.2 is the most prevalent e-learning standard available and has been adopted by most LMS and e-learning developers, although the other standards still exist and are being used.

E-learning's continuing evolution and application in government, academic, non-profit and corporate settings indicate that it is valued for its multiple benefits. More organizations have invested in and incorporated it into their overall training or L&D strategy. One of the major benefits is that e-learning lowers costs - it reduces travel expenses, instructor and classroom expenses and time away from work. Economic hardships have impacted budgets, and although implementing e-learning has upfront costs, the startup investment is quickly recovered. There has been an increased focus and investment in learning technologies, including learning management systems. Anderson (2008) foresaw companies taking a conservative approach, relying on e-learning and fit-for-purpose content development and other learning services. More organizations are outsourcing learning services to external providers, such as course hosting, content development, classroom delivery and subject matter. Contracting on a

project by project basis also cuts down on costs and is more effective since specialized skills can be brought in on an as-needed-basis to develop e-learning.

E-learning allows flexibility and convenience to its users. New advances, such as simulations and gaming, offer more engaging ways for learning retention. Since e-learning can be made available practically twenty-four hours a day and seven days a week, traditional classroom limitations are no longer problematic. Employees can take e-learning anywhere and anytime if they have access to a computer and the internet, truly enabling global learning. This convenience also allows "just-in-time" learning to occur. In addition, e-learning is a means to deliver information and instruction to a large population that are consistent or customized depending on need. E-learning provides flexibility in a self-directed fashion, and has become common place in many organizations in one shape or another.

The Learning Management System (LMS)

Bower (2007) indicated that the origins of the LMS are unclear, but that they evolved as a necessity. In the 1970s, early forms of the LMS were mainframe systems designed to schedule classroom training. In the 1980s, personal computers and CD-ROMs enabled the beginnings of the use of network-based systems to track learning. Even so, the LMS was still an administrative system in the background. The term integrated learning system (ILS) was coined by Jostens Learning but, it eventually evolved into the learning management system (LMS). The LMS was developed as a tool or a repository which allows users to access and deliver training content. The internet in the 1990s allowed the LMS to become an employee-facing application and to reach a broader audience.

Today, the LMS is the infrastructure that manages all aspects of the learning process: it "delivers and manages instructional content, identifies and assesses individual and organizational learning or training goals and collects and presents data for supervising the learning process of an organization as a whole" (Szabo & Flesher, 2002, as cited in Watson & Watson, 2007, p. 28). Rosenberg (2001) stated that "learning management systems use internet technologies to manage interaction between users and learning resources" (p. 161). It can house e-learning content and course descriptions, and enable online registration for available classroom-based workshops. It also includes tools for tracking and reporting training performance by individuals or groups. The LMS usually provides the following standard capabilities:

- Management of learning materials and knowledge management resources
- Access to an online catalog of learning modules (e-learning)
- Access to course descriptions and schedules of available training
- Registration for instructor-led training (ILT)
- Assignment of learning assets and programs based on curricula
- Assignment of instructional responsibilities
- Delivery and tracking of tests and assessments
- Tracking and reporting of student progress and performance
- Generation of certifications and regulatory compliance reports
- System integration with the organization's HR system

Martin et al (2005) also added to the list of the positive impact that e-learning and LMS processes have on the employee: there is a consistent and constant availability of learning resources so that employees are empowered and responsible for their own

learning and development; departments are also empowered for their own training, whether as individuals or teams; employee training records are attached to the individual, no matter where they go in the organization; and system-generated reminders ensure higher levels of completing the training on time.

There is some distinction in the literature between the LMS and other similar tools, such as course management systems (CMS) and learning content management systems (LCMS). A CMS is used primarily for online or blended learning and supports the placement of course materials online, associating students with courses, tracking student performance, storing student submissions and mediating communication between the students as well as the instructor (Watson & Watson, 2007). The CMS mainly provides the instructor with a set of tools and a framework to create online course content and the teaching and management of that particular course. Examples of CMSs include Blackboard, Sakai, and Moodle, which are often found in university or academic settings. The focus of the CMS is on the course rather than an organization-wide system. The LCMS, in contrast, is a system that is capable of creating, storing, assembling and delivering various learning objects that are personalized to the user. The focus of the LCMS is on the creation and organization of its content rather than on the management of the learners. The LMS, however, typically provides tools found in both the CMS and LCMS - and the focus is on the management of the multiple (organization-wide) learners using the system. In addition, each learning object in the LMS is "packaged" in a way that enables it to catalog and track its usage by learner and groups of learners.

Spirgi and Gebavi (2007) saw two trends that are driving the enterprise LMS: a desire to integrate learning and development with talent management activities (e.g., performance management and succession planning); and an increasing focus on measuring learning spend and the impact on business results. The LMS can link learning and developmental assets to address competency gaps and develop employee knowledge and skills to perform more effectively in their role. The tracking and reporting mechanisms automate the record keeping and requirements for legal and auditing purposes, freeing up what used to be manual and time-consuming administrative processes. The information age and increasingly sophisticated technology has shifted to more learner-centered approaches, where the roles of teachers and instructors have been evolving into facilitators of knowledge rather than the sole sources of knowledge. The internet and e-learning encourage self-paced learning, and the technology to track at the individual level is a requirement for learning organizations. Some variables that instructors and organizations find valuable are the abilities to track progress towards mastery, assess the learning, appropriately sequence the instruction and store completion or progress records (Watson, et al, 2007).

Manufacturers of learning management systems today have been guided largely by client requirements. Learning professionals ask for product functions and LMS providers respond, and LMS providers differentiate their products with additional features that they think learning professionals will be asking for. New features are prioritized by the clients that are the most important to the LMS provider. LMS functionality and availability is continually evolving to meet business requirements. System automation replaced error-prone spreadsheets and much of the manual

administrative labor required in the past – including enrollments, notifications, scheduling, tracking, scoring and reporting.

The changing demographics of the learner has also helped shape the LMS, whereby most organizations apply a self-service model to access learning that is available around the clock. Enterprise software systems are starting to integrate the LMS as a core component next to talent, performance management and compensation. Human resources personnel databases are linked with the LMS to provide automated updates between the systems. The LMS delivers e-learning, virtual classroom and knowledge management. Content has also evolved, from longer e-learning courses to short video clips and webcasts. Content development tools are also generally offered by LMS providers, which enable fast custom creation of modules in-house.

The literature surrounding learning management system implementation is scattered and resides in several different fields - information technology, academic learning and education, human resources/learning and development, business management, and instructional systems design (ISD). It is often a cross-functional endeavor to implement learning technologies of this sort, since it has multiple stakeholders and involves both a technological component as well as a change management approach. Many organizations also use a “Software as a Service (SaaS) model and outsource the system and main administration to a provider, which creates another dimension to organizational learning and knowledge management. In addition, the organization’s technical infrastructure needs to be taken into consideration during the planning phase: required hardware, software and internet bandwidth issues stress the

importance of partnering with the information technology department from the beginning.

Implementing a New Learning Management System

Several critical factors affect the rollout of a new learning management system, including: organization's level of readiness, stakeholder involvement, the champion or sponsor, strong project team with organizational and business representation, and the collaboration between IT, HR, Legal and various other business units. Clarke's (2002, as cited in Romiszowski, 2004) approach emphasized creating the product first and then marketing it. It has several steps on how to build a successful e-learning project:

- Design the e-learning product using a robust LMS platform and organizing the content into three different types: static (documents, web pages), multimedia (CBT, videos, simulations), and performance-based (hands-on labs, or ILT)
- Build the content and delivery infrastructure by partnering with instructional designers and information technology team.
- Create comprehensive services for the learners, from both administrative and technical support perspectives.
- Sell it!

The last step of selling or marketing the e-learning project is especially critical since it involves being able to increase the perceived value of such a tool in an environment which may not have had the immediate need. It involves change management and the "WIIFM" (what's in it for me) factor. Similarly to any other e-learning project, a best-in-class system with all the bells and whistles is useless if there are no learners willing to utilize and maximize it to its potential.

Philips (2002, as cited in Romiszowski, 2004) indicated that there are three levels where e-learning projects fail: at the product, the learner or at the organizational level. At the product level, some variables include course design and technology

infrastructure. Poorly designed courses do not provide an engaging or useful experience for the user, and if the technology infrastructure is not in place to support the product, then it also becomes a challenge. Learners that are poorly prepared or lack motivation or time do not reap the full benefits from e-learning. E-learning projects can also fail at the organizational level when there is low managerial support or lack of reward structures that encourage e-learning to occur. Even when all levels at the product, learner and organizational level are optimal, e-learning should not always be viewed as the “silver bullet” or the magic solution to training needs. It is one element of a larger and more comprehensive learning and development agenda. In addition, the instructional steps set out in some of these practical applications do not incorporate the evaluation of criteria for success – that is, how do we know if the e-learning project was successful?

Measuring the Effectiveness of a Learning Management System

Martin, Quigley and Rogers (2005) conducted a case study with Aventis Pharmaceuticals, which implemented an LMS based on the need to fulfill regulatory compliance. They applied a change management approach to global LMS implementation in a matrix organization, using common change management principles such as stakeholder alignment, knowledge transfer, governance creation, alignment of individuals and teams and embedding the initiative to performance management processes. They evaluated success by measuring usage in two ways: uptake (percentage of registered users with at least one completed training record) and percent complete.

They also evaluated the LMS as an enterprise system by using the following variables: (1) high availability, (2) scalability, (3) usability, (4) interoperability, (5)

stability and (6) security. *High availability* looks at whether or not the LMS serves a range of needs for various roles (i.e., learners, administrators, content builders, instructors). *Scalability* refers to whether or not the LMS infrastructure can be flexible enough to meet future volume growth in content and users. *Usability* refers to the LMS's ability to support automated and personalized services, such as self-paced and role-specific learning. LMS access, content delivery and system presentation must be "user-friendly" and intuitive in design. *Interoperability* focuses on the extent the LMS can support content from different sources and multiple vendors. The LMS should be based on open industry standards for web deployment and support major learning standards, such as SCORM (shareable courseware object reference) and those standards created by the AICC (Aviation Industry Computer-based Training Committee) and IEEE (Institute of Electrical and Electronics Engineers). *Stability* focuses on whether or not the LMS is reliable and can effectively manage an organization running 24 hours a day, 7 times a week. *Security* looks at the ability to selectively control both internal and external access, by role, to online content, resources, and backend functions. These six elements should be integrated into a company's request for proposal (RFP) when shopping for a new LMS.

Martin, et al (2005) also measured LMS usage through two variables: uptake and percent complete. Uptake was defined as the percentage of registered users that had at least one completed training record in the LMS. Percent complete was "the aggregate measure of the percentage of the training gap already completed over all departments at a given time in a given region" (p. 139). When Martin et al (2005) first implemented the LMS at Aventis Pharmaceuticals, they had 93% uptake in the US a year after the launch

and a 22% completion rate. Although these two variables are important in gauging the success of the LMS implementation, they do not look at the learning transfer. These measures only look at the system and content usage but do not measure whether or not a learner actually learned or used the knowledge in a way that could positively impact his or her performance on the job.

Despite some structured approaches to quantify what successful implementation of e-learning or a new LMS looks like, there are still issues with measuring the actual effectiveness. Completion and usage statistics are only showing adoption of the tools. In addition, if there are compliance related courses which mandate usage of the LMS and its content, does that show true adoption? Compliance courses may skew usage and adoption rates because they will show usage based on mandatory training versus learning just-in-time. In addition, are the learners actually learning? How is the knowledge in the e-learning modules being applied? Unless there are knowledge checks built into the modules, it is difficult to assess whether the knowledge was retained, and unless there are surveys or other means to get feedback, it is difficult to assess how any learning was applied on the job. Not all e-learning modules within the LMS may have the same format or approach to testing knowledge, which introduces another variable that is hard to account for when assessing the effectiveness of e-learning or LMS implementation as a whole. This brings back the point that e-learning and the LMS should be only one component of a broader learning and development strategy, rather than the sole source. On-going input and feedback is critical to shaping e-learning and LMS tools so that they are delivering relevant learning experiences that can actually be integrated on the job to positively impact performance.

Establishing LMS Roles and a Governance Board

Spirgi and Gebavi (2007) discussed the organizational structure and accountability as an area of challenge when a learning management system is first introduced. The system and process owner usually falls into the L&D function. However, they observed that it is rare to have the L&D function fully centralized in one department—most organizations have a corporate L&D group responsible for enterprise-wide training (leadership development, on-boarding) and technical trainers embedded in the business. This decentralized model is common and efficient, but presents a challenge for selection, deployment and management of an enterprise-wide LMS.

In the planning phase, there should be consideration given to the creation of a structure responsible for LMS administration and governance after implementation. This governance team should be responsible for structuring the decision-making process, prioritizing initiatives by balancing both strategic and operational needs and communicating these to the organization. Decision-making around the system, however, often falls upon the corporate L&D function alone. Complexities that add to the challenge of establishing LMS governance include: decentralized business processes, disparate learning stakeholders, complex vendor relationships and redundant technologies that might be in use (Spirgi & Gebavi, 2007).

Three types of governance models are common: federated, centralized and blended. A federated model is where a small corporate team defines global learning and development initiatives but rely on localized learning delivery. A centralized model of governance uses a shared-services approach to learning delivery and accountability falls under one umbrella. A blended model of governance combines the best of both, where

centralized shared services exist but learning administration is decentralized. *Company XYZ* adopted a blended approach. It used a federated model for corporate-wide initiatives, where initiatives were defined centrally but relied on extended team members to deliver these initiatives locally. The LMS administration was centralized, but administrative rights at varying levels were granted to users in the business.

The establishment of a LMS governance board helps to provide a global point of contact for solutions, with leadership support. This board can meet on a regular basis and manage the change and adoption associated with a new LMS. This provides consistency across functions and the ability to share information in training technology capabilities and tools. Responsibilities of each board member can be ensuring LMS implementation and utilization, facilitating LMS management, and promoting knowledge sharing. In addition, the creation of a network of LMS contacts or a community of practice, across the organization helps to provide a support structure amongst peers who are utilizing the LMS, and encourages best practices and knowledge sharing. Membership in this network establishes a specific LMS subject matter expert for each business function, who can be tasked with developing change readiness input and knowledge transfer for their own function before, during and after the LMS rollout. Their role is to help drive usage, communicate the LMS rollout, support training for employees in their function, and help establish LMS related business procedures. These members can also serve as the “pulse on the ground” by providing feedback from their target populations.

Business ownership of the LMS usually falls in the L&D department, and a system owner usually falls into IT or HRIS functions. The business owner, or L&D

manager of the LMS, include responsibilities such as working with subject matter experts (SMEs) and management to identify new or existing required training to meet regulatory compliance and business needs; coordinating and/or training others to manage reporting and historical training records; responding to business inquiries about the LMS; and reporting business issues and decisions to the LMS governance board.

The system or application owners of the LMS have the technical responsibilities of running the system, which can include linking content defined by the business contact to the LMS; establishing system linkages (such as data feeds from HR employee databases); managing the catalog of content within the LMS; assigning appropriate content to different audiences; incorporating historical training information into individual records; maintaining LMS content (i.e., adding or updating to new versions).

Glynn (2008) described the case of Caterpillar, which has 100,000 learners in 40 countries. Caterpillar used three major elements to frame their success story: governance, learning technology infrastructure and alignment process. The governance system had four levels: (1) a University Board of Governors to provide direction and policies for the whole corporate learning function; (2) an Engagement and Learning Council to give feedback and direction for the corporate learning function and to monitor progress; (3) college advisory boards that offer input and direction at the higher education level; and (4) lead learning managers that provide feedback and direction at the business unit level. The learning technology infrastructure at Caterpillar provided individual learning plans, enterprise required learning, business-unit required learning, job-role specific learning and discretionary learning. The alignment process involved

aligning learning needs and strategy at the division and enterprise levels by understanding and integrating customer and business needs into their strategy.

The establishment of any kind of governance board can be critical to the success of the initiative. There may be business resistance, since it takes time away from day-to-day jobs. Many times, there are other on-going initiatives or business situations that compete for time and resources. The project manager of the initiative will need to establish clear communication on what the governance board is intended to achieve, and be skilled in managing stakeholder perceptions of what resources and time are needed. Enlisting strong executive sponsorship can help raise the initiative into top priority amongst other projects.

Chapter III

Method of Investigation

A brief historical account of the clarification, design and implementation phases of the LMS at *Company XYZ* will be provided, as based on Maher's framework. This is necessary since there were gaps in the clarification and design phases, and no clear criteria of evaluation were established at the onset of the project. One of the main program evaluation questions of this study asks if there was a successful adoption of the LMS, which requires clear evaluation criteria. Ideally, during the clarification and design phases of program planning, the criteria for evaluation are developed and clearly stated. A look at the literature and "best practices" will provide some guidance as to what may be perceived as successful adoption of an LMS and e-learning.

At the time of this study, the LMS and acceptance of e-learning was technically also still within the implementation phase. The business decision was to execute a rolling launch of the system across the organization, highlighting not the system but rather the learning and development initiatives and courses, as they are relevant to the particular business groups. Certain locations still remained quite unexposed to the system, and e-learning in general was not a fully recognized or utilized method of learning across the company.

A Framework for Program Planning and Evaluation

Maher's (2012) program planning and evaluation framework was used to guide the formative evaluation of this case study. This framework presents four sequential phases: clarification, design, implementation and evaluation.

Clarification. The initial phase of the process is clarification, and it is an assessment step where information gathering activities identify (1) the target population,

(2) the needs of the target population and (3) the relevant context in which the target population and needs are a part of. Clients, stakeholders and program requirements or desired program accomplishments are defined during this phase. The clarification methods generally involve interviews, focus groups, surveys and other data collection tools to shape the program parameters. The information gathered supports the forming objectives of the program if there were none before, or further refines existing objectives. This information also answers the basic questions of: who, what where, when and why.

Design. Design occurs after the elements in the clarification phase are identified, and the focus turns to the ‘what’ and the ‘how.’ The information gathered from the clarification phase is used to guide the design of the program, and additional information gathering may need to occur as a result if the clarification phase was not thorough enough. The program design phase includes important components, such as:

- Program purpose and objectives
- Measurable objective indicators
- Resources, such as personnel, budget and sponsorship support
- Development and implementation schedule
- Evaluation plan.

Design input may come from multiple sources, and input that accumulates into general themes should be integrated to show that the design was relevant and based on the needs and perspectives of the population it was meant to serve.

Implementation. The third phase of the process, implementation, takes place once the objectives of the program are defined and the design plan has been formed.

The program is executed accordingly. Continuous monitoring of the program during the implementation phase is required to keep activities on track, but oftentimes unforeseen things may arise and not follow the plan as designed. This phase is also a data collection and documentation step, as feedback about the program from its participants and the stakeholders may come up, and the program manager will benefit from notes on where the actual implementation may have deviated from the design plan, why the deviation occurred, and how to correct the course or create an alternative design path. If the design of the program changes, the project or program manager may then need to incorporate any changes into the evaluation process.

Evaluation. The final phase of the framework is evaluation, and it answers the fundamental question of “did it work?” Evaluation should be based on the initial program objectives and assess whether or not those objectives were achieved. Programs are implemented based on the potential value of their outcome, and resources are devoted to making them successful. A program evaluation provides the relevant stakeholders and sponsors with information on whether or not there was a return on investment (ROI). Programs that have unclear objectives, are poorly planned and designed, or that have flaws in implementation or evaluation strategies will rarely yield positive or promising results. If a program does achieve desired outcomes, it will not likely garner additional funding or approval to continue. Evaluation (informal or formal) should be continuous throughout the implementation phase, in order to improve on the original program’s design or to address variables that were unaccounted for in the earlier clarification or design phases.

A closer look at program evaluation. Since this study focused on the last phase of the process, a deeper review of this phase will be covered. Program evaluation is "the process of making sound judgments about the worth or merit (value) of a human services program" (Maher, 2012). The program evaluation plan contains all of the protocols that result in data collection and analysis based on the program evaluation questions. In turn, the program evaluation protocol is a documented procedure that clearly states how a program evaluation question is to be answered. The protocol contains the program evaluation question; the data collection variables; data collection methods, instruments and procedures; data analysis methods and procedures; and guidelines for the communication and usage of the evaluation information.

In addition, Maher's (2012) framework identifies four questions to guide a sound program evaluation:

- Is the program evaluation *practical* in nature, so that it can be implemented without distressing normal organizational resources and processes?
- Is the information from the program evaluation *useful* enough to the program sponsors and stakeholders so that program decisions can be made effectively?
- Was the evaluation *proper* in the sense that it abided by any and all legal requirements, and was performed in compliance with high ethical standards?
- Are the evaluation methodologies, instruments and tools *technically defensible*, or can they be proven to be accurate, reliable and valid?

According to Maher (2012), there are twelve sequential, interrelated and reflexive activities in the evaluation phase. They are outlined in the Table 3, with respect to the parameters of this study.

Table 3

Program Evaluation (Maher, 2012)

Evaluation Activity	<i>Company XYZ</i>
1. Identify the client or client group	The primary clients were the Executive Sponsor of The Learning Center, the Chief Learning and Development Officer and the Learning and Development team at <i>Company XYZ</i> . The indirect clients were all the employees within the organization, since The Learning Center was a company resource for their development. The primary researcher of this dissertation reported to the Chief Learning and Development Officer at the time of the study, and was also responsible for assuring that the program was implemented as designed.
2. Determine the client's needs for program evaluation	Program evaluation was needed since the LMS and e-learning had been available to the global audience of the organization for over a year, and there were no evaluative criteria or mechanisms in place to gather feedback and make necessary changes for improvement.
3. Place the program to be evaluated into an "evaluable" form	See Appendix F and H for survey items and focus group/interview protocols
4. Delineate program evaluation questions	The three major program evaluation questions to be answered are: 1) What is the perceived value of The Learning Center (the LMS) and e-learning at <i>Company XYZ</i> ? 2) What are the key areas of improvement to focus on (system and content)? 3) Was there successful adoption of the enterprise LMS at <i>Company XYZ</i> ?
5. For each program evaluation question, specify the data collection variables	The first two program evaluation questions are qualitative in nature, and the survey and focus group/interview process were used to identify the answers. The last program evaluation question was based on system reports and qualitative data from the survey, looking specifically at uptake and percent usage.
6. Describe the data collection methods, instruments and procedures	The data collection involved a globally implemented electronic survey and a series of focus groups. See Appendix F, G and H for survey items and focus group/interview protocols

Table 3 - Continued

7.	Describe the methods and procedures for data analysis	A thematic analysis was performed on the archival data, which included verbatim comments from the last employee engagement survey and the results of an electronic survey during the pilot of the system. A thematic analysis on the electronic survey data from the global population and focus groups, and quantitative data from LMS usage reports were used to identify uptake and percent complete.
8.	Specify program evaluation personnel and responsibilities	The primary researcher of this study led the program evaluation and was responsible for all aspects of the evaluation. Her immediate work and academic teams served as feedback providers to the evaluation method.
9.	Delineate guidelines for communication and use of program evaluation information	The results of the program evaluation were used in a formative fashion to inform what directions may be needed to improve the system and e-learning in general. The primary researcher was in a position to make and implement recommendations based on these results.
10.	Construct program evaluation protocols	The program was evaluated using Maher's (2012) approach to program evaluation. See Appendix F, G and H for survey items and focus group/interview protocols
11.	Implement the program evaluation	Program evaluation began after IRB approval and collection of all data.
12.	Evaluate the program evaluation	The evaluation of the program evaluation was conducted at the end of the program evaluation using the Maher (2012) model of program evaluation. Limitations of the study were addressed in the discussion session of this study.

Research Design and Data Collection

The design of the evaluation phase was created by the primary researcher of this study, with input from her manager and team members. The evaluation consisted of several components, and the primary researcher was a participant-observer in activities related to the program planning and evaluation of the learning management system. The primary researcher was responsible for the following:

- Designing and implementing an enterprise-wide employee survey to evaluate the awareness and perceptions/attitudes about the learning management system and its content
- Conducting semi-structured focus groups with various stakeholders to collect feedback on how they see the LMS as a vehicle to achieve learning and development goals
- Conducting a qualitative analysis of the verbatim comments collected from historical (2008) employee engagement survey results, as they pertain to learning and development, to extract overall themes and topics
- Conducting analyses of reports obtained from the system that identify usage
- Conducting a qualitative analysis of a preliminary survey of a pilot group when the LMS was first rolled out.

The electronic survey. An electronic survey (Appendix H) was set up using an online service provider called Survey Monkey. Upon all approvals, an invitational email was sent to all employees of *Company XYZ*. An advertisement banner showcasing The Learning Center survey was displayed on the company intranet (Appendix D), and was visible to employees when they opened an internet browser on their work computer. Their browser's default homepage was the company's intranet site. Employees that accessed the LMS and then logged off the system were automatically redirected to a webpage which gave the research context of the survey and presented the option to complete the survey.

The survey was originally planned to be open for approximately 4 weeks, with a reminder email within the last 3 days of the close. Since it was launched in the summer

months, many employees were on vacation. In order to collect a more robust data set, the survey was extended after the published due date on a rolling basis. Once the survey was closed, the analysis occurred. Using the Survey Monkey tool, a descriptive statistics report was created. Text-based responses were analyzed qualitatively, extracting common themes.

Focus groups. A certain number of employees had additional roles in the LMS, and their feedback was valuable since they worked on the administrative side of the system. They were also able to attest to the functionality of the system and brought a unique perspective. To collect data from this targeted selection of employees, invitations were sent out to a preapproved list (as vetted with the local learning leads). The focus groups were conducted at about the same time that the survey was open. A semi-structured approach focusing on several key topics guided all of the facilitated sessions. After the sessions were conducted, a qualitative analysis was performed to identify common themes. The sessions were not recorded, but notes were taken and compiled.

Archival company data. The primary researcher also had access to three main databases of information: past employee engagement results on training and career development; reports generated from the LMS which depict usage activity in the system; and the results from a pilot poll about The Learning Center after its "soft launch." To help understand context and the state of learning and development before the system was implemented, verbatim data from the employee engagement survey was reviewed and grouped into several meaningful themes through a qualitative analysis.

System-generated usage reports from the LMS provided data on LMS and e-learning uptake, and specified which business units were most keen at leveraging the system. The initial survey that was collected during the 2009 pilot run of the system also allowed some insight into how perceptions were at the onset of the system. The pilot survey items were used to inform the design of the global evaluation survey that was implemented in this study.

Chapter IV

Results

There were several sources of data used in this study: (1) the training and development verbatim comments from the 2008 employee engagement survey, (2) the 2009 preliminary pilot survey for The Learning Center, (3) system usage reports from The Learning Center; (4) the 2010 global Learning Center survey and (5) 2010 focus group feedback. The first three data sources were archival data used to give a fuller picture of this case. *Company XYZ* conducted an employee engagement survey in 2008, and the verbatim comments from the training and development section of the survey were analyzed for themes. In addition, there was an 8-item pulse survey (Appendix B) that was conducted to gauge perceptions on The Learning Center about a month after the soft launch in 2009. Although the two surveys did not have the exact items and did not have the same audience type, some directional learning can be obtained from the pilot survey.

Training & Development Themes from the 2008 Employee Engagement Survey

From the employee engagement survey (Appendix A), the area of Training and Development was one of the top three areas of improvement for the whole company in 2008. There were a total of 226 verbatim comments left by employees of *Company XYZ* in the training and development section of the last employee engagement survey. The employee engagement survey was an opportunity to capture employee perception on company learning and development prior to the implementation of The Learning Center. A total of ten categories emerged (Table 4), with one of the categories labeled "Miscellaneous/Other" in order to capture one-off comments that did not fall into any

common themes. Some comments were longer and had more than one concept and these were represented in more than one category count.

With a count of 83, the theme of needing more training opportunities emerged as the top theme from the comments section. The following theme, with 37 counts, was the need for equal training opportunities across the organization. On-boarding programs for new employees trailed for the third highest topic, with 23 counts. Based on these themes, *Company XYZ* started to address its learning and development opportunities, with The Learning Center as a universal tool that could offer expanded and equal access to learning and development assets and tools to all employees.

Table 4

Themes from the 2008 Company XYZ Employee Engagement Survey (n=226)

	Theme	Count
1.	<i>More Training Opportunities</i> There is little training available/More training/ More technical/functional training; More management training; More professional development training)	83
2.	<i>Equal Learning Opportunities</i> Learning opportunities need to be more equal across the company/There is a focus on newer/younger employees but there also needs to be focus on existing and more tenured employees	37
3.	More new employee on-boarding efforts (company and department)	23
4.	Career paths/mobility do not exist or are not clear or structured; Need to improve	19
5.	There is no time/too much workload to do training or develop professional skills.	19
6.	Management does not support learning and development/More manager involvement	18
7.	Learning and development/Training need to be more structured or coordinated.	18

Table 4 - Continued

8.	This is a sink or swim environment; learning is usually on the job.	9
9.	More focus on a learning and development culture	5
10.	Other/Miscellaneous	27

The 2009 LMS Pilot Survey Results

For the preliminary survey on the LMS in 2009 (Appendix B), the target survey population included training and L&D professionals, as well as those that were involved with the LMS from an administrative capacity. In addition to being already exposed to The Learning Center as a pilot group, these participants were involved in local content delivery and off-the-shelf e-learning solutions. Out of the 50 participants the survey was sent to, 34 responded. The pilot survey ran for a three week period from February 7 to February 28, 2009. Of the 34 respondents, 91.2% (n=31) agreed or strongly agreed that The Learning Center was easy to navigate and look for courses (Table 5). For the second item, which asked if the courses had high quality content, 88.2% (n=30) agreed or strongly agreed (Table 6). Twenty-eight responded to the open-ended items on question three (Table 7), which asked for the business value of The Learning Center. The top three perceived values of the LMS were: the accessibility of learning content to the learner, centralized resources for development planning and consistent learning approaches. Question four (Table 8) asked what additional courses should be in The Learning Center, and 19 responded. The top request was for Lean (a methodology of streamlining processes and eliminating waste in order to keep costs low, while maintaining high quality products or services), Six Sigma quality control and project

management type courses. The fifth question asked for the participants' overall experience with The Learning Center (Table 9). Approximately 88% responded that their experience was either "good" or "excellent." Question six (Table 9) asked whether or not the participants would recommend the system to others; if they answered no, they were directed to an extra question that probed them further to understand why not. Out of all the respondents, 97.1% recommended the system and only one answered no, with the reason that the site was not intuitive and that the two courses taken were at a "low level of competence." The last item asked for additional comments, and 15 participants left varying positive and constructive comments, ranging from "The Learning Center is a good start and begins to address various learning needs" to "(I) experienced a few technical difficulties as I was testing content."

Table 5

2009 Survey Q1. It was easy to navigate and look for courses in The Learning Center.

Answer Options	Response Total	Response Percent
Strongly Agree	13	38.2%
Agree	18	52.9%
Neutral	2	5.8%
Disagree	1	2.9%
Strongly Disagree	0	0%
Total Responses	34	

Table 6

2009 Survey Q2. The courses I viewed had high quality content.

Answer Options	Response Total	Response Percent
Strongly Agree	8	23.5%
Agree	22	64.7%
Neutral	3	8.8%
Disagree	1	2.9%
Strongly Disagree	0	0%
Total Responses	34	

Table 7

2009 Survey Q3. In what ways will The Learning Center add value to the business?

(n=28)

Theme	Count
Learner accessibility (location, 24/7 availability)	10
Centralized resources for development planning	10
Consistent learning approach	5
Administration/tracking of training records	4
Cost effective	3
Multiple topics	3
Self-paced, learner driven	3

Table 8

2009 Survey Q4. What additional areas or courses should be added to The Learning Center?

Theme	Count
Lean, Six Sigma, Project Management, Quality Control	4
HR & Benefits	2
Supervisory/Management Skills	1
Supply Chain	1
Sales Techniques	1
Energy Product Knowledge	1
Advanced PowerPoint, Excel	1
Technical courses	1

Table 9

2009 Survey Q5. How would you rate your overall experience with The Learning Center?

Answer Options	Response Total	Response Percent
Excellent	14	41.1%
Good	16	47.1%
Average	3	8.8%
Fair	0	0%
Poor	1	2.9%
Total Responses	34	

Table 10

2009 Survey Q6. Would you recommend The Learning Center to others?

Answer Options	Response Total	Response Percent
Yes	33	97.1%
No	1	2.9%
Total Responses	34	

Global LMS Survey Results

The data collection period was from June 2010 rolling into September 2011. The survey was originally supposed to be opened for approximately 4 weeks, with a reminder email within the last 3 days of the close. Since it was launched in the summer months, many employees were out of the office or on vacation. In order to collect more data, the survey was left opened after the published due date. An email from the company's corporate communications mailbox was sent out, addressed to a global population, with two reminders. There were a total of 362 responses.

The electronic survey was advertised through email communications and on a graphic banner on the company intranet (Appendix C and D). Visitors to The Learning Center were also directed to the survey introduction page when they opted to logout of the system.

The survey had 14 items with 4 demographic sub-items for location, based on the country chosen. For instance, if the survey taker selected United States, s/he would be

brought to a secondary page to select a city/state in the United States. Only relevant locations where the company had presence were included in the selections.

For question 1 (Table 11), which asked for the primary reason they last visited The Learning Center, most employees indicated that they were in the system to look for courses for their individual development plan (23.8%), followed by a tie between to complete a required course or program (21.6%) and to look for a specific course or information to perform a task (21.6%). Since The Learning Center was advertised in conjunction with company-wide communication memos encouraging employees to create development objectives, it appears that employees go to The Learning Center when they have been prompted to do so. The second most common reason (to complete a required course or program) also indicates that the learner was directed to go into The Learning Center. The third most common reason indicates that users were looking for something specific in order to complete a task at hand. There were 15 responses in the “Other” section, which were reviewed and grouped into the existing selections.

Frequency of visits to The Learning Center is captured in Table 12. With 40.8% of the responses, most employees visited The Learning Center only sometimes (once every few months), followed by rarely (once or twice a year) (21.5%) and then often (one or twice a month) with a 15.4% response. Out of those that responded, 14.5% of the respondents indicated that they had not been in The Learning Center at all. This information shows that there may be less than wide-spread awareness of The Learning Center, and that the global survey was their first exposure to the LMS.

Table 11

2010 Survey Q1. What was the primary reason(s) for your most recent visit to The Learning Center?

Answer Options	Response Percent	Response Count
Just browsing	15.6%	76
Looking for specific course or information to perform a task	21.6%	105
Looking for courses for my Individual Development Plan (IDP)	23.8%	116
To complete a required course or program	21.6%	105
I have not been in The Learning Center yet.	11.7%	57
To perform administrative functions (i.e., set up sessions, run reports, check attendance)	5.3%	26
Other (please specify)	0.4%	2
Answered question		359
Skipped question		3
Total response count (respondents could select more than one)		487

Table 12

2010 Survey Q2. How often do you visit The Learning Center?

Answer Options	Response Percent	Response Count
Almost daily	1.7%	6
Very Often (at least once a week)	4.5%	16
Often (once or twice a month)	15.4%	55
Sometimes (once every few months)	40.8%	146
Rarely (once or twice a year)	21.5%	77
Never	14.5%	52
I don't know	1.7%	6
answered question		358
skipped question		4

The third item on the survey (Table 13) looked at satisfaction of the user's experience with various functions and features of The Learning Center, with six choices: (1) not at all satisfied, (2) slightly satisfied, (3) moderately satisfied, (4) very satisfied, (5) extremely satisfied, and not applicable. The functionality and features of the system that were evaluated included: the login process, ease of navigation, search functionality, the structure of the catalog, the variety of topics available, the quality of the e-learning content, the ILT registration process, the experience with the offline course player, the overall experience, and the relevance of the e-learning modules. All of the items averaged around the Moderately Satisfied range. The lowest marks went to the Catalog Structure (3.02), the Search Function (3.05) and the Navigation (3.08). The most highly rated items were the Login Process (3.42), the Quality of the e-Learning Topics (3.39)

and the Variety of e-Learning Topics (3.31). An open comments box collected 53 responses, and a qualitative analysis was conducted to group the most common themes. One point was given to each separate concept, as some comments mentioned multiple areas. The themes that emerged are listed in Table 14, with the top three (excluding Miscellaneous/Other) as not having enough courses or the courses were not relevant; poor navigation; and not user friendly.

Question four (Table 15) on the survey dealt with whether or not the participant would recommend The Learning Center to others. Approximately 79% recommended The Learning Center and 21% did not recommend the system. Sixty-two comments were shared, and the major themes that emerged are in Table 16. The top three reasons of why participants would not recommend The Learning Center were: (1) there are not enough courses or the courses were not relevant; (2) poor navigation; and (3) the platform is not user friendly. This information corresponds with the results of the earlier survey, where the intuitiveness of the system for its users was lacking.

The fifth item on the survey was formatted as open text boxes where participants were asked to list their perceptions of three of the most important benefits of The Learning Center. The 207 responses were analyzed qualitatively with the results in Table 17. The most important benefit of The Learning Center that emerged from the data was that it provided educational and learning resources for knowledge sharing, and was a resource for career development and individual development plans (IDPs). The second most important aspect was the variety and relevance of the topics that were available, and the third most important feature was the convenience and easy online access.

Table 13

2010 Survey Q3. How satisfied are you with The Learning Center in the following areas? If you have not used a function, please leave blank.

Answer Options	Not at all	Slightly	Moderately	Very	Extremely	N/A	Rating	Response
Login Process	28	21	67	92	45	27	3.42	280
Navigation	25	44	89	67	23	25	3.08	273
Search Function	30	38	76	69	20	34	3.05	267
Catalog Structure	28	41	81	64	19	32	3.02	265
Variety of e-learning topics	11	36	72	88	20	41	3.31	268
Quality of e-learning content	9	33	74	74	32	43	3.39	265
Instructor-Led Training (ILT) Registration	18	21	49	58	13	87	3.17	246
Offline course player	10	10	38	35	11	132	3.26	236
Overall experience	19	38	95	74	26	25	3.2	277
Relevance of e-learning courses	13	30	77	81	28	32	3.35	261
Comments								53
answered question								289
skipped question								73

Table 14

Themes from 2010 Survey Q3. Open-Ended Comments (n=53)

Theme	Count
Not enough courses/Courses were not relevant	10
Poor navigation	10
Not user friendly	8
Poor search functionality	7
No time to take or complete courses	7
Bandwidth/Connection issues	3
Poor login process	3
Offline player issues	2
Miscellaneous/Other	10

Table 15

2010 Survey Q4. Would you recommend The Learning Center to others?

Answer Options	Response Percent	Response Count
Yes	78.7%	229
No	21.3%	62
Comments		62
Answered question		291
Skipped question		71

Table 16

Themes from 2010 Survey Q4. Would you recommend The Learning Center to others?

Open-Ended Comments (n=62)

Theme	Count
Not user-friendly	15
Not enough courses/relevant courses	13
Poor navigation	12
Poor search	7
More communications about The Learning Center	4
Poor login process	4

Table 17

Themes from 2010 Survey Q5. What are three most important benefits of The Learning

Center for you as a user?

Theme	Total
Education / Learning / Knowledge Sharing/IDP/Career Development	124
Variety/Relevance of Topics	74
Convenience/Easy Access/Online Access	66
Self-paced	44
Class registration/finding courses	42
Tracking/Recording/Reporting	37
Centralized Learning Resources	34
Cost/Time-effective	29

Table 17 (Continued)

Quality of courses	18
Global reachability/Staff/Onboarding	12
Navigation/User-Friendly	7
Continuing Education Credits	5

For question 6 (Table 18), which asked the participants for three areas of improvement for The Learning Center, 181 responded and 181 skipped the question. Of the 181 who did respond, all of them (100%) gave at least one area of improvement; 125 (69.1%) supplied a second area, and 86 (47.5%) supplied a third area of improvement. Out of these 181 people that replied, the top three responses for improvement were: (1) the system needed more courses, whether they were to be additional technical courses or instructor-led courses; (2) navigation was difficult and needed to be more intuitive for users; and (3) more communications about The Learning Center and its content were needed for better awareness. If user-friendliness encompassed navigation, search functionality and the login process, this would be the top area of most desired improvement.

Table 18

Themes from 2010 Survey Q6. What are the three areas of improvement we should focus on for The Learning Center? 100 character limit for each line.

Theme	Total
More courses/technical courses/ILT	120
Better Navigation	38
More communications	34
More user-friendly	28
Better Search Functionality	23
Better Login / SSO	21
Better Course History / Transcript / Certifications	13
None	11
Bandwidth/Connection issues	9
Enable Manager Reporting and Course Assignment	9
Improve Course Catalog	8
Improve Offline Player	6
Provide Hourly / Contractor Access	4
Enable Time/Environment for Learning	4
Other	58

Survey items 7 through 12 (Tables 19 through 24) were demographic in nature. Item 7 asked respondents to identify which business organization they belonged to. The majority of the responses came from those in the E&P organization, followed by CORP and then M&R (Non-Retail Store employees). The retail store division of the M&R business, which had approximately 8,000 hourly associates, was not included as part of

this program since they did not have full access to the internet, the company intranet and The Learning Center. Since they did not have access to the resource, their perceptions would skew the data set. The high turnover rate of this population and the costs and difficulty in administering a survey to this population (the delivery method required would be paper surveys) were other reasons why this study did not include this particular population.

Table 19

2010 Survey Q7. What business organization do you identify with?

Answer Options	Response Percent	Response Count
Corporate Support Functions (e.g., Finance, Legal, HR)	23.5%	64
Upstream – Exploration and Production (E&P)	55.1%	150
Downstream – Marketing and Refining (Non-Retail Stores)	15.1%	41
Downstream – Marketing and Refining (Retail Stores)	4.4%	12
<i>Company XYZ Joint Venture</i>	1.1%	3
Other (please specify)	0.7%	2
Answered question		272
Skipped question		90

Of those that responded to item 8 (Table 20), the majority was Technical or Professional Staff with no direct reports, followed by manager with direct reports and then Administrative/Support Staff. There were 14 responses in the “Other” field, and

these were reviewed and grouped into existing selections, with the exception of 3, which truly belonged in the “Other” category.

Table 20

2010 Survey Q8. Which best describes your job level?

Answer Options	Response	Response
Officer/Vice President	1.7%	6
Director/Senior Manager	3.6%	13
Manager with direct reports	9.7%	35
Superintendent/Supervisor with direct reports	8.4%	30
Technical Staff with no direct reports	21.2%	76
Professional Staff with no direct reports	21.2%	76
Administrative/Support Staff	6.4%	23
Intern/Co-op	1.4%	5
Contractor/Temporary Employee	1.7%	6
Other (please specify)	0.8%	3
Answered question		273
Skipped question		89

Question 9 (Table 21) in the survey asked for the survey-taker's profession, and 272 responded, with 90 participants skipping the survey item. The top three professions of the respondents were from Engineering (17.6%), Finance and Accounting (14.7%) and Geosciences (13.6%) backgrounds. There were 21 respondents who identified themselves as “other” and those responses were reviewed and re-categorize, with 5 left over as being truly “other.”

Table 21

2010 Survey Q9. Which of the following best describes your profession or area of expertise in your current role?

Answer Options	Response	Response
Administrative	4.8%	13
Commercial	1.5%	4
Communications	1.1%	3
Customer Services	0.7%	2
Engineering	17.6%	48
EH&S / Social Responsibility	4.4%	12
Facilities/Building Services	0.7%	2
Finance and Accounting	14.7%	40
Geosciences	13.6%	37
Human Resources	7.4%	20
Information Services/Technology	5.9%	16
Legal	1.1%	3
Marketing	1.1%	3
Production – Field Operators/Technicians	9.2%	25
Retail Stores	2.6%	7
Sales	5.5%	15
Supply Chain/Procurement	4.4%	12
Trading	1.8%	5
Other (please specify)	1.8%	5
Answered question		272
Skipped question		90

Of the 270 participants that responded to question 10 (Table 22), which asked for the participant's tenure with the company, the top three responses were: 25.9% had been with the company between 3-5 years, 21.5% between 1-3 years and 15.2% between 5-10 years. Ninety two participants chose to skip the question.

Table 22

2010 Survey Q10. How long have you worked with the company?

Answer Options	Response Percent	Response Count
Less than 6 months	8.1%	22
Over 6 months, but less than 1 year	3.0%	8
1 year, but less than 3	21.5%	58
3 years, but less than 5	25.9%	70
5 years, but less than 10	15.2%	41
10 years, but less than 15	7.4%	20
15 years but less than 20	10.0%	27
More than 20 years	8.9%	24
Answered question		270
Skipped question		92

Of the 268 participants that responded to question 11, which asked for age group, the top three age groups selected were: (1) between the ages of 41-50 (28%); (2) between the ages of 31-40 (27.2%); and (3) between the ages of 51-60 (20.9%). Ninety-four participants skipped this question.

Table 23

2010 Survey Q11. Which age group do you belong to?

Answer Options	Response Percent	Response Count
18-25 years	8.6%	23
25-30 years	11.2%	30
31-40 years	27.2%	73
41-50 years	28.0%	75
51-60 years	20.9%	56
61-70 years	4.1%	11
71+ years	0.0%	0
Answered question		268
Skipped question		94

Questions 12 through 16 (Tables 24 through 28) asked for work location.

Depending on the first location response, the survey branched into more refined options.

Of the 275 participants that responded to question 12, the top three work locations were:

57.7% United States, 8.4% Asia/Asia Pacific, and 6.1% Northwest Europe/Eurasia.

Eighty-seven participants chose to skip this question. Two responses in the “Other” field were re-categorized accordingly.

Table 24

2010 Survey Q12. Where is your current work location?

Answer Options	Response Percent	Response Count
United States	57.7%	207
Northwest Europe/Eurasia	6.1%	22
Africa	2.2%	8
Asia/Asia Pacific	8.4%	30
St. Lucia	1.1%	4
Australia	1.1%	4
South America	0.0%	0
Other (please specify)	0.0%	0
Answered question		275
Skipped question		87

From the United States responses (Table 25), 45.9% came from Texas; 24.1% from New Jersey; and 11.8% from New York. One response in the “Other” field was reviewed and re-categorized into the New Jersey option.

Table 25

2010 Survey Q13. You selected the United States as your work location. Please specify.

Answer Options	Response Percent	Response Count
Connecticut	0.5%	1
Delaware	0.0%	0
Florida	2.0%	4
Georgia	0.0%	0
Gulf Coast Offshore	0.0%	0
Hawaii	0.0%	0
Illinois	0.0%	0
Kansas	0.0%	0
Louisiana	0.5%	1
Maryland	0.5%	1
Massachusetts	2.5%	5
Minnesota	0.0%	0
Nevada	0.0%	0
New Hampshire	0.0%	0
New Jersey	24.1%	49
New Mexico	0.0%	0
New York	11.8%	24
North Carolina	0.0%	0
North Dakota	9.9%	20
Ohio	0.0%	0
Oklahoma	0.0%	0
Pennsylvania	2.5%	5

Table 25 (Continued)

Rhode Island	0.0%	0
South Carolina	0.0%	0
Tennessee	0.0%	0
Texas	45.9%	93
Virgin Islands	0.0%	0
Virginia	0.0%	0
Washington	0.0%	0
West Virginia	0.0%	0
Other (please specify)	0.0%	0
Answered question		202
Skipped question		160

Note: In order to preserve some level of anonymity, major locations by city were rolled up into overall state data.

From the Northwest Europe/Eurasia responses (Table 26), 68.1% came from the United Kingdom; 27.2% from Denmark; and 4.5% from Norway. These results are not surprising since the company is based in the United States.

Table 26

2010 Survey Q14. You selected Northwest Europe/Eurasia as your work location.

Please specify.

Answer Options	Response Percent	Response Count
Azerbaijan	0.0%	0
Denmark	27.2%	6
Norway	4.5%	1
Russia	0.0%	0
Scotland	0.0%	0
United Kingdom	68.1%	15
Other (please specify)	0.0%	0
Answered question		22
Skipped question		340

Note: In order to preserve some level of anonymity, major locations by city were rolled up into overall state data.

For the responses from Africa (Table 27), 50.0% came from Equatorial Guinea; 25% from Libya; and 12.5% for both Algeria and Egypt.

Table 27

2010 Survey Q15. You selected Africa as your work location. Please specify.

Answer Options	Response Percent	Response Count
Algeria	12.5%	1
Egypt	12.5%	1
Equatorial Guinea	50.0%	4
Ghana	0.0%	0
Libya	25.0%	2
Other (please specify)	0.0%	0
Answered question		8
Skipped question		354

Note: In order to preserve some level of anonymity, major locations by city were rolled up into overall country data.

From those that identified their work location as Asia/Asia Pacific (Table 28), 34.5% came from Kuala Lumpur, Malaysia; 27.6% from Gresik, Indonesia; and 20.7% from Jakarta, Indonesia.

Table 28

2010 Survey Q16. You selected Asia/Asia Pacific as your work location. Please specify.

Answer Options	Response Percent	Response Count
China – Beijing	0.0%	0
Indonesia	48.3%	14
Malaysia	34.5%	10

Table 28 (Continued)

Singapore	3.4%	1
Thailand	13.8%	4
Other (please specify)	0.0%	0
Answered question		29
Skipped question		333

For question 17, participants were asked to share any other comments or suggestions in an open text box. The majority of respondents (331) skipped this question. There were 31 responses which were reviewed. Some comments had more than one thematic concept. The 6 main categories that emerged are shown in Table 29. Eight respondents commented that more courses were needed (e-learning, instructor-led and technical), and this was the top theme. There were seven responses that were related to positive feedback of the system. Third place was tied with four comments each, between needing more awareness of and communication about The Learning Center and the lack of time or a supportive environment for learning.

Table 29

Themes from 2010 Survey Q17. Please share any other comments or suggestions below.

Answer Options	Response Count
More courses/ILT/Technical courses are needed	8
Positive comments about The Learning Center	7
More communications/awareness is needed	4
There is no time or a supportive work environment for learning	4

Table 29 (Continued)

Resources should be provided offline/Offline player	2
Other/Miscellaneous comments	10

The last survey item asked participants if they wanted further contact or involvement, and 148 responded (Table 30). Of the respondents, 87.2% indicated that they would like the results of the survey to be shared with them; 37.8% wanted to be included in focus groups on learning and development topics; and 66.2% wanted to be included on an email list to receive updates on The Learning Center. Only 61 respondents left valid email addresses.

Table 30

2010 Survey Q18. You may choose to participate further in this or other related research/feedback collection, or to receive periodic updates. You may select more than one.

Answer Options	Response	Response
Please share with me the results of this survey.	87.2%	129
Please include me in future focus groups about this and	37.8%	56
Please include me on an email list to receive updates	66.2%	98
Comments		61
Answered question		148
Skipped question		214

Focus Group Analyses

A total of nine focus groups were conducted, but data sets from only seven were used since the primary researcher did not receive the necessary consent forms to include the data from two groups. The focus groups took place in the following locations starting in August, 2010: New York (2 sessions), New Jersey (2 sessions), Houston (2 sessions), London/ Europe (1 session) and Asia Pacific (2 sessions; however the data set was not used in this research due to missing consent forms).

Focus group participants were selected based on several factors: (1) their previous involvement with The Learning Center; (2) their role as functional training program managers; (3) their role within Human Resources. The protocol used was an invitation about the purpose of the focus group, why they were selected and how the data were being used. Reference to the study was included in the invitation. Following the email invitation, Microsoft Outlook calendar invites were sent and participants accepted or declined based on their availability. The researcher scheduled two sessions for each location. Those participants who were unable to attend either and who indicated that they still wanted to share feedback were invited to one-on-one interviews based on their availability with the researcher.

The focus groups began with the explanation and purpose of the session and how the data were to be used. The researcher reviewed the items on the consent sheet, passed the consent sheet out and collected the signed forms. Copies of the consent form were available for each participant. No participant from any of the sessions refused consent. The focus groups were structured so that the initial half of the session was informational, for level-setting and to update the participants on The Learning Center and its history. The latter half of the session was open discussion, with the researcher using a semi-

structured approach. Prepared discussion questions were asked, and based on the conversation, probes were used. The researcher also took notes and debriefed with the co-facilitator after the session to capture any other details.

The major themes from the focus groups mirrored the survey results. Although focus groups were conducted in the Asia Pacific region, the data used in this study culled those out since the signed consent forms were not available.

Major Themes from the 2010 Survey and Focus Groups

Four major themes emerged from the survey and focus groups in terms of areas that needed improvements in The Learning Center:

- *Usability* – Difficult login process, with multiple password options and confusion on how to actually access the e-learning content
- *Usability* – Navigation/experience with user interface and branding
- *Content* – Relevance or applicability to the learner
- *Awareness* – Lack of general awareness of system, purpose and content

Based on these findings, which were presented to leadership teams who approved the initiative to move forward, a project team was formed and kicked off in December 2010. A phased approach to improving The Learning Center was quickly formed, with a phase I plan that targeted a system upgrade for the LMS, and a re-launch by the end of the first quarter the following year (March 2011). The project charter for this initiative can be found in Appendix I, with identifying information blocked.

Uptake and System Usage Reports

Usage reports were run in The Learning Center and provided some insight into the growing number of employees participating with the tool. Participation was defined as an employee logging into the system and accessing at least one course. Figure 1

shows a sporadic and slow, but general increase of users participating in The Learning Center. Spikes in usage can be attributed to targeted communications or campaigns that involved The Learning Center. For example, in *Company XYZ*, communications about mid-year performance reviews and development planning generally are released globally in the May - June timeframe. Therefore, it was not very unusual to see increased usage of The Learning Center during those times.

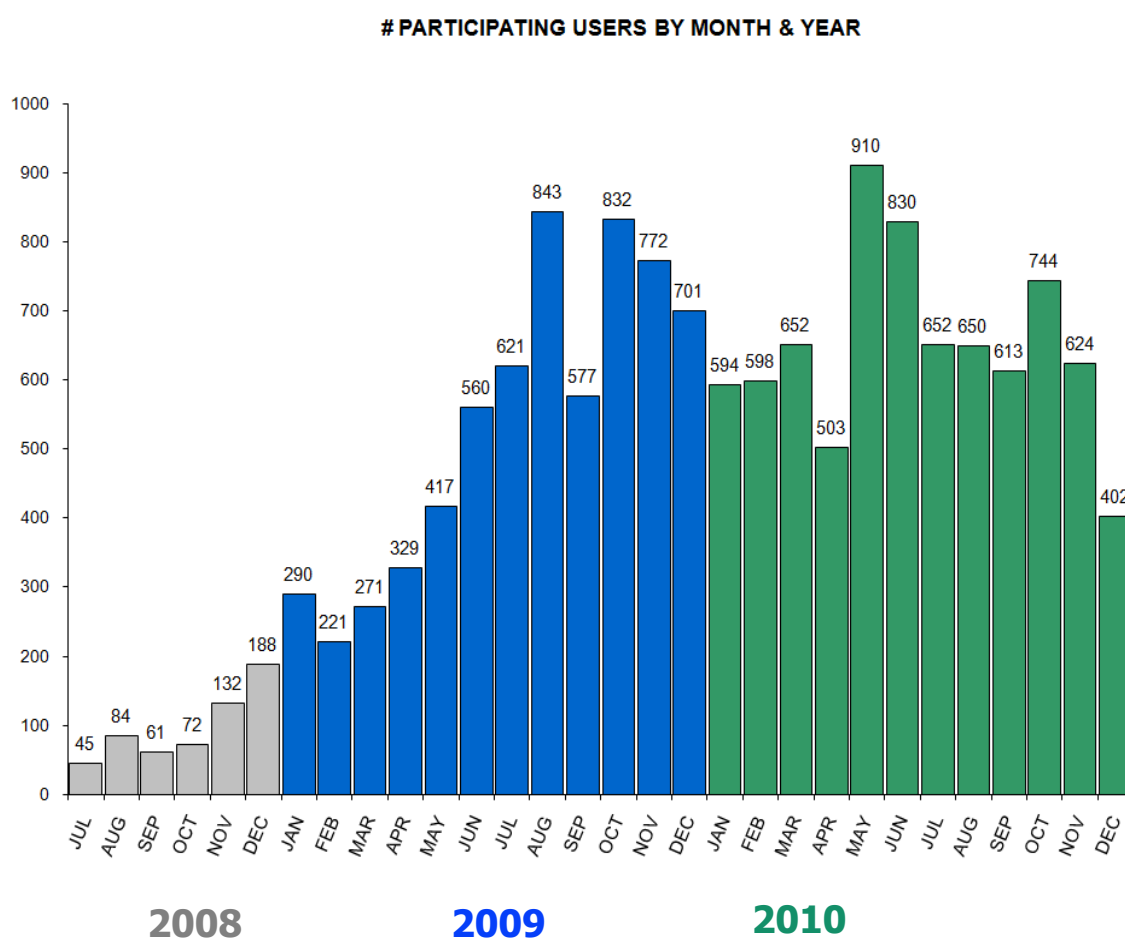


Figure 1. The Learning Center usage by month, 2008 – 2010

The Evaluation of the Program Evaluation and Limitations of the Study

Maher (2012) uses four primary ways to evaluate the Program Evaluation:

- *Practicality*: To what extent was the program evaluation conducted in a way that allowed for its successful accomplishment?
- *Utility*: In what ways was the resulting program evaluation information helpful to people? Which people?
- *Propriety*: Did the program evaluation occur in a way what adhered to legal strictures and ethical standards?
- *Technical Defensibility*: To what degree can the evaluation be justified with respect to matters of reliability and validity?

In terms of practicality, the program evaluation of The Learning Center was conducted using a structured approach. It followed a model of program planning and evaluation (Maher, 2012) and considered the target population, stakeholders involved and clearly defined objectives from the evaluation. The qualitative analyses of the verbatim comments from the 2008 employee engagement survey, the 2009 Learning Center pilot survey, the 2010 focus groups and the 2010 Learning Center survey were all accessible to the primary researcher. Each comment was reviewed and grouped by emerging themes. Comments which held more than one concept were grouped in more than one category, and comments that did not fit into a category were placed in an “Other/Miscellaneous” category. The primary researcher also had direct authority over the project. *Company XYZ* supported the project and research since it was tied to legitimate and approved business needs and processes.

For utility, the program evaluation was useful in that it allowed measurement of perceptions of a system that was invested in. The results were used to guide system and

process changes following the data collection period. Since the system provided educational opportunities for the employees of *Company XYZ*, any improvements would positively impact employee and organizational performance, engagement and knowledge retention.

The program evaluation fulfilled the propriety element of Maher's approach to program evaluation since it occurred in a legally compliant and ethical manner. Since the evaluation was part of the primary researcher's dissertation, rigorous review under the Institute of Research Board (IRB) was required before any parts of the program evaluation took place. The study was not experimental in nature and the only interaction with the research subjects were in the form of voluntary participation in focus groups or an electronic survey, and within the context of the work setting. In addition, the survey items did not include any sensitive topics.

Technical defensibility is the final evaluation element when reviewing the program evaluation under Maher's model. This is also where limitations of the study will be discussed. The research was based on a case study using *Company XYZ*. The evaluation was conducted with the target population of the particular company, and its goal was to capture the perceptions of this particular company's employees, which renders the results as valid. Reliability from a historical standpoint cannot be captured, since this is the first time that the evaluation occurred. The results of the evaluation cannot be generalized to other companies, as this is a case study based on the characteristics of *Company XYZ*. However, this study can still serve to inform others that are considering the implementation of e-learning or an enterprise LMS.

Another limitation was the absence of a reliability check for the qualitative analyses of the employee engagement verbatim comments or the survey. Only one

researcher performed the analyses. Having one or more additional person(s) conduct the data analyses would have provided more research integrity to the evaluation methodology.

In the data collection process, a more holistic approach would have been to also include focus groups that were more representative of the company's population. Timing and resources were major factors in not being able to do a more thorough collection of feedback. The people that were invited to the focus groups were already exposed to The Learning Center or had some stake in its success. A focus group of employees that did not have exposure or who knew very little of the system and its tools could have brought other themes to the forefront of the study, including an understanding of what the preferences and challenges may be for first-time users. Interviews and focus groups were facilitated by the primary researcher, so another opportunity would have been to partner with another researcher to conduct additional focus groups.

As identified earlier, the assessment of whether learners actually retained knowledge and applied it on the job in order to improve performance is harder to evaluate. This would be another phase highly suggested after the LMS implementation. Due to the early stage of where the LMS was in *Company XYZ*, application of learning from LMS content was not assessed.

Chapter V

Discussion

Garvin, et al (2008) identified three building blocks of the learning organization: a supportive learning environment, concrete learning processes and practices, and leadership behaviors that reinforce learning. *Company XYZ* was developing all three of these aspects, and its leaders acknowledged that there needed to be a cultural shift to becoming more of a learning organization for a variety of reasons, including the retention of key talent and in order to be competitive in the industry as a high performing company.

In regards to having a supportive learning environment (psychological safety, appreciation of differences, openness to new ideas and time for reflection), the organization was slowly adopting practices and principles based on feedback from its employees (such as through the employee engagement survey and town halls). The “psychological safety” of *Company XYZ* was not defined or measured, but it depended upon which business unit, leadership style of that particular business leader, and other factors. Overall, from the experiences of the primary researcher at the time of the study, the ability to openly express conflicting ideas was tolerated at certain levels. The appreciation of differences in *Company XYZ* held multiple meanings, as the organization had a global presence in over twenty countries and needed to develop a stronger diversity and inclusion strategy. The word “diversity” is also often an emotionally-charged word, especially in the United States, where historical issues around racism exist. The company did not have a clear statement on diversity and inclusion, other than incorporating what was driven from a compliance standpoint, such as including the Equal Employment Opportunity Act of 1972 in its recruiting and hiring practices. Leadership at *Company*

XYZ acknowledged that this was an area that required additional work and appointed the first Chief Diversity and Inclusion Officer in 2012.

As with most aspects of the working environment, leadership directly influences the learning culture. Individual learning within the company varied drastically according to how the leader cultivated his or her team environment. Top leadership was aligned with enforcing the learning and development agenda, but execution and leadership accountability for developing others was still not universal, and more secondary in nature. Leadership in any organization needs to reinforce a learning environment. They must actively question and listen to their employees and role model the behaviors of continuous learning themselves.

Action Planning in *Company XYZ*

Attention to the growing needs of a global LMS for *Company XYZ* came about in mid-2007, which resulted in a cross-functional project team to work on identifying a quick solution. The existing platform used in the retail business was selected as an interim solution and expanded to the rest of the organization, with a few different pockets of the organization actively using or becoming acquainted with the system.

During late 2008, a selection of the top 50 users was asked to participate in an electronic survey in order to acquire feedback on the system and its existing content. At the same time and into early 2009, system demos were provided through webinars and lunch and learn sessions to the global human resources team, who would be helping with the socialization of the system and its benefits to the business. An article highlighted The Learning Center in the HR e-newsletter to bring awareness to the HR community. At the leadership level, project updates were given. As *Company XYZ* was beginning to focus

more on employee and organizational learning and development, The Learning Center became a tie-in to on-going communication efforts. On January 12, 2009, The Learning Center was soft launched and communicated with on-going performance management objective-setting messages.

A broader evaluation was conducted the following year (2010) to further identify quality improvement needs and the feasibility of a LMS platform upgrade from the existing LMS provider, targeted for the end of the first quarter in 2011, which would resolve a majority of the existing and known pain points. Potential barriers were identified to this timing, such as resource constraints given priority focus on core year-end HR processes (such as year-end performance reviews and compensation), other major system upgrades, and the LMS vendor's limited experience with single-sign on technology. The thematic results from the 2010 survey were grouped into four broad categories, with specific action steps for each (Figure 2).

The first major theme was that the login process was cumbersome. Improvement could be made utilizing the technology of “single sign-on” or SSO, which would enable employees to need to only log into the network once and maintain access to all applications. This way, employees could save time from needing to log into multiple applications. In addition, background work could be done to streamline the password field so that it was a standard across the company. With single sign-on, however, the employee would not need to know or memorize multiple passwords.

The second theme involved the user interface of the system, which was not as intuitive as it could be. The proposed improvement was to upgrade the LMS software, apply *Company XYZ* branding to the system (i.e., colors, company logo), and to provide people managers with the ability to assign, report and track learning based on their

specific team members. The last component of this solution promoted the accountability of people managers to be more actively involved in their direct reports' skill and knowledge development.

The third major theme was that the content held within the system should be evaluated for quality and relevance. This could be remedied by partnering with quality off-the-shelf content providers, where content was already built and could be easily imported into the LMS. Another component was to continually develop customized modules with the business subject matter experts. This would also include identifying all the core curricula with each business unit to be integrated into the system. Desktop training content that were most relevant to the employees at *Company XYZ* could also be included. An evaluation process was to be put in place in order to ensure that the training reflected the right versions of software applications being used within the company.

The last theme revolved around the actual awareness of The Learning Center, which was low. In order to raise awareness, a marketing campaign would be implemented so that the LMS was more broadly communicated. An internal site would be built as the gateway into the actual system – one that would be customized and refreshed with new information on a regular basis. In addition, an electronic newsletter would be created to regularly inform employees of new content or focus on specific topics in order to draw attention and on-going usage of the system. The Learning Advisory Forum and Network, which included all the training and L&D stakeholders in the company, would be reconvened to ensure that there was business input and support, as well as governance to The Learning Center.

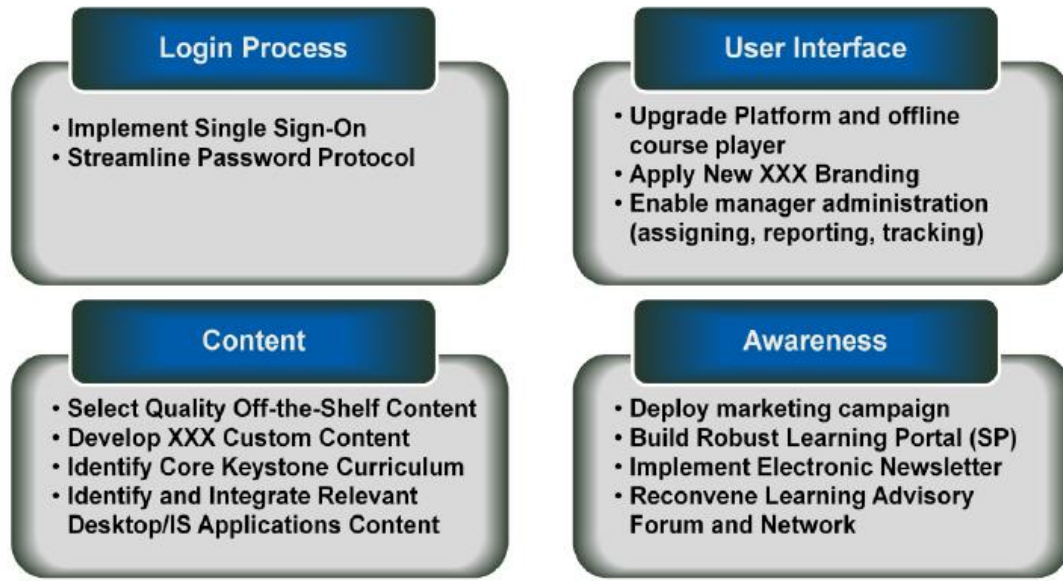


Figure 2. Four broad areas of improvement, with action items

The three main program evaluation questions to be answered in this study were:

- What is the perceived value of The Learning Center (the branded LMS) and e-learning at *Company XYZ*? Close to 80% of the participants recommended The Learning Center, which indicated that the system held value to the organization, especially given that this LMS was an interim solution. Several themes came up in terms of the benefits of the LMS, such as being able to learn and share knowledge more effectively, being able to find relevant topics and easier accessibility to content online.
- What are the key areas of improvement to focus on (system and content)?

Through the survey and focus groups, four broad categories were identified:

- *Usability* – There was a very difficult user login process, with multiple password options that created confusion and inability to access the system effectively.
- *Usability* – The user’s experience with the system’s interface was not intuitive. Navigation was difficult, so content was not easily accessible, and the branding of the system was not consistent with the company (such as color schemes, visibility of the company logo).
- *Content* – The available topics in the system were not seen as relevant or had little applicability to the learner’s role or job function.
- *Awareness* – There was a general lack of awareness of the system, its purpose and the content within it.
- Was there successful adoption of The Learning Center and e-learning? Based on the usage report that spanned between 2008 and 2010, the data indicate that usage is increased by on-going communications that link its use to an initiative.

Since this was a case study, there are precautions in how these findings are utilized or applied in other organizations. Additional research is needed to provide direct linkages to how well organizations implement their LMS, and what factors affect successful organizational adoption. This research attempted to bridge together several knowledge areas between organizational learning, knowledge management, and the technical implementation of an LMS.

Recommendations for Managing Change and the First-time Adoption of the LMS

The first time implementation of a learning management system can be a culture change, since many times it shifts the responsibilities for learning and development or training from HR and management to the manager and employee. The perceived value of

such a system and its capabilities can vary. Compliance-driven departments and training or L&D functions see immediate value in centralizing tracking and assignment of learning content.

As with all large-scale and high impact projects, change management should be taken into account before roll-out. Over seventy percent of large-scale business changes fail (Kotter, 2008, p. 12-13). Kotter's (1995) eight step change management process below provides a framework for managing change within the context of an organization:

1. Establishing a sense of urgency
2. Forming a powerful guiding coalition
3. Creating a vision
4. Communicating the vision
5. Empowering others to act on the vision
6. Planning for and creating short-term wins
7. Consolidating improvements and producing still more change
8. Institutionalizing new approaches

Kotter (1995) indicates that most successful change management initiatives have a strong business case and a time-critical element (step 1) to drive it forward. Strong leadership support and involvement from all organizational levels, especially from those that are to be impacted the most (step 2) is also needed, a step where all relevant stakeholders are identified along with their concerns and any perceived roadblocks. In addition, the vision of the change needs to be communicated clearly and often, and be impelling enough to warrant supporting behavioral action (steps 3-5). To sustain the momentum, there must be short-term wins that are quickly visible, and systematically consolidated as a continuous plan that is evident to the organization (steps 6-7). Finally, the new approaches need to be institutionalized (step 8) or embedded in not only the current employees, but also as new employees join the organization in order to be sustainable.

One way to form a powerful guiding coalition is to assemble a steering committee and working project team devoted to the change initiative. Project kick-off meetings, with the presence of one or more senior business sponsor(s) or champion(s), help prioritize the importance of the initiative. A project team is brought together, with representation from across relevant stakeholder groups, and the intent is to review the context of the initiative (i.e., why, why now, and what will be the impact and change?), their direct roles in the project, and, for an LMS implementation, the practical points of the system. The team is involved in all major decision points and is responsible for updating leaders and other stakeholders in the organization.

When timing is appropriate, an awareness campaign with leadership and business endorsement should be initiated. Forms of communicating the new LMS can include mass email, town hall meetings, through intranet stories, scheduling regular meetings focused on updating and providing information to LMS contacts, and announcement material followed by reference guides and FAQs (frequently asked questions).

In regards to *Company XYZ*, the above focus on change management was taken. All stakeholders were aligned; there was a clear need from the employee base for additional and centralized learning opportunities (per the employee engagement survey and the various business units' desires to purchase their own LMS). In addition, the leadership team had developed a company-wide strategy, called *XYZ Vision 2020*, which had an ambitious goal of becoming the best energy investment in the world. This was supported by a number of "pillars" (such as operational excellence, capital discipline) and created a sense of urgency through various strategic communication avenues. This vision also included learning and development as one of its core pillars in moving the company forward to higher performance and increased value for its shareholders. An executive

sponsor was to lead the charge for each of these core pillars in driving substantial change, and the leader who championed the learning and development pillar was passionate about this cause, which enabled resources and energy to accelerate these initiatives (including The Learning Center). A clear project charter, with a project team composed of cross-functional and cross-business members were created for each learning and development initiative (see Appendix I for The Learning Center project charter and team structure). Change management principles were incorporated within each – with a global communications plan that linked all of the initiatives so that employees could see the overall investments that were being made as a collective strategy, rather than discrete initiatives on their own. Planned communications and training events highlighted the various new tools and processes to employees on a regular basis in the form of newsletters, intranet stories, workshops and town halls.

Aside from the change management side of things, which deals with the human readiness component, LMS implementers also need to think about building a sustainable technology architecture to support an e-learning culture. Rosenberg (2001, p. 176-177) provides several key questions to ask about an e-learning infrastructure and tools:

- What is the level of Web access throughout the company?
- What is the relationship between the training/learning and development and the IT community?
- How collaborative and coordinated around e-learning are all the training organizations in the company?
- Is there a comprehensive e-learning portal strategy in place?
- Does the organization have a core learning management system?
- Does the organization have a position on interoperability?
- Does the organization have the right talent, positioned in the right roles, to make the best use of its learning infrastructure and tools?

Many of the key questions above were also asked prior to the LMS implementation at *Company XYZ*, although there were some challenges due to those offshore sites that had very limited internet bandwidth to stream the e-learning directly.

Since the LMS is a technology and user-driven system, implementers need to build additional time to pilot and gather relevant feedback from both survey and focus group data. These steps were also taken at *Company XYZ*, although there could have been a broader set of employees for more representative input. Aligning the system and its content with business requirements should not be underestimated, as well as working with the information systems/technology function in understanding technical requirements from both the LMS and the various internal systems needing integration. The technical implications of a decision, as well as its flexibility to accommodate various configurations are sometimes overlooked until they manifest themselves during implementation. As part of the project team at *Company XYZ*, one of the core members was a representative from the IT department who would bring in other technical and system integration subject matter experts as needed to ensure interoperability.

McDermott (1999) warned that the use of information technology, knowledge management and organizational learning tools and systems is effective only when the organization is able to use them to support the learning process. The LMS is susceptible to becoming a repository where it collects learning assets that are not leveraged effectively or in a way that promotes organizational learning. LMS system and process owners need to actively engage the organization and its leaders in taking full advantage of what the system offers. Thorough training and socialization of the LMS capabilities was part of the change management plan for The Learning Center. Clear delineation of what constituted as learning events and what were not was integrated into the LMS usage

guidelines. One of the challenges that *Company XYZ* initially faced was that employees wanted to use the system as an event planning system. The ability for the LMS to have self-registration for multiple events was a functionality that the businesses wanted to utilize in planning meetings and other “non-learning” related events. The LMS project team and administrators had to clearly define what was considered suitable for The Learning Center. Business meetings and “lunch and learn” information sessions were not to be included in the system.

Partnering with each business group or function to identify content and learning gaps is also an important aspect in order to gain business acceptance and usage. System implementers and L&D professionals should integrate the company’s existing processes and models, such as competency models, in order to align learning assets effectively. Competency models identify the critical elements of a particular role, and learning content should be aligned to each competency. One of the challenges at *Company XYZ* was that there were only a few functions which had robust competency models. In addition, learning content was available, but they were not easy to find in one place nor were they clearly mapped in alignment with the existing competencies. It was difficult for managers and employees to utilize the right resources. A separate project team was formed, which collected all available learning content at *Company XYZ*. Subject matter experts on the team helped to review and evaluate the content for relevancy, and then mapped them to their existing content to their competency models. This work was then used to define the catalog folder structure within The Learning Center so that users could easily identify learning assets associated with the competencies that they were looking to develop. Areas where there were gaps in content led to separate projects within the

various departments to further review and identify new learning content, with the help of the learning and development team.

During the LMS selection phase, stakeholders should determine the list of “must-have” functionality, the “nice-to-haves” and the functionality that may not be relevant in the present, but may be desired or critical in a future state. Since *Company XYZ* had made the decision to utilize an existing system for interim purposes until there was a broader integrated talent management solution available (one which would integrate talent management, compensation, learning and development and performance management on one platform), there was not much capability to do a more comprehensive requirements gathering exercise. The project team did review a list of critical functionality requirements requested from the businesses to ensure that the majority of these stakeholders’ needs were met, and to ensure that it curbed their desire to purchase different systems.

LMS implementers should ensure that subject matter experts are involved with the needs assessment and selection. They should either be a part of the initial project team or consulted throughout and even after the LMS has launched (as in the case of *Company XYZ*). Identifying and building a network of LMS users and establishing a governance team are critical components of the planning phase as well. This ensures that there is on-going communications and continuous improvement efforts to the LMS after implementation, and to have a structure in place to resolve issues and situations that were not apparent or identified during the planning phase.

Other aspects of the system need to be integrated into the planning phase, such as reporting requirements, methods of feedback collection and integration, and a process for supporting users and administrators of the system after implementation (e.g., user help

desk and policies or guidelines). LMS reporting requirements need to be clear and intuitive, especially if there are multiple administrators within an organization. The ability to report off of various fields, such as learning asset type, training dates, business unit, geography or location are important and should be identified as part of the requirements gathering phase. One common challenge that *Company XYZ* faced was that the LMS had a complicated reporting module that was not very intuitive. There were many information fields and the multiple standard reports in the system did not provide all the requirements that were needed. Users had to create their own custom reports and save it so that they could run the report on a regular basis. Training was conducted via webinars and one-on-one sessions so that local administrators could run their own reports. In addition, since the human resource information system (HRIS) data feed populated into the LMS, if there were errors in the HRIS, they also manifested in the LMS. These data errors were detected on a one-by-one basis, usually caught by the learner, and passed to the attention of the HR generalists who then corrected the error in the HRIS.

Periodic feedback gathering from users of the system is also needed to enhance the user experience and to make sure that learning content is relevant. Methods for collecting user feedback can be formal and informal, and can include surveys, interviews and focus groups conducted on a regular basis. Reviewing existing and forthcoming initiatives and programs with the LMS in mind is also critical in the adoption and for creating on-going support. *Company XYZ* conducted follow-up surveys and collected qualitative feedback from the local administrators following the implementation on a routine basis. Additional enhancements were made based on this feedback.

As with most technology projects, a strong project and program management approach is required, with a clear charter outlining required resources, risks and benefits, costs, deliverables, and a project plan/timeline. *Company XYZ* was a project management focused culture, and typically created such project charters prior to the implementation of any large systems (see Appendix I). Internal and external resources should be identified for building new content or having the expertise to design or revise content. New processes may be needed, and identifying a step-by-step process for how new content is integrated and old content is retired is among one of these. A well-defined process for determining what goes into the LMS should be included, as well as updating or creating any training policies with the usage of the system. System access rights and content owners, which are typically the subject matter experts, is also a process in itself. Determining the costs and processes of converting existing materials into e-learning will be important as the organization starts cultivating an e-learning culture. At *Company XYZ*, the L&D function engaged with external vendors and selected partners based on competitive pricing, scalability and quality of work. These vendors were used for multiple projects to ensure consistent “look and feel” of e-learning modules, so that learners who take multiple e-learning courses became familiar with the company branded course templates, navigation and flow of the modules.

E-learning should also be part of a broader learning strategy. Most organizations value and deliver blended learning approaches to ensure participants with different learning styles can benefit and gain exposure to different modes of learning. Aspects of e-learning should be tied to performance management and development plans. At *Company XYZ*, several learning and development frameworks existed, including a utilizing a blended learning approach. This meant that learning programs typically had

pre-work, which included e-learning modules, articles and assessments. Following completion of these pre-work assignments, learners attended a classroom based workshop for application of the concepts they learned, and which integrated group activity and discussion. After the workshop, post-class assignments were given, such as a follow-up conference call to share learning and additional e-learning modules. Challenges to a blended learning program include participation rate in the beginning of the program and getting the managers of the participants to allow the time to devote to professional development. These blended learning programs spanned across several months, and continuous engagement depended upon the participants' desire to continuously learn and be involved with their own development.

From a course organization perspective, each learning object within the LMS should have the following identifiable traits that are made public to the learners: Course Title and number, Instructor/Owner Contact information (if applicable), delivery method, any pre-requisites, the intended target audience, the course objectives and any restrictions or associated costs. Having a common and intuitive structure to the e-learning modules allows learners to be able to search for the courses in consistent manner. A cataloguing protocol for how courses are coded within the LMS should also be intuitive and consistent so that reporting and searching can be streamlined. At *Company XYZ*, each course or learning asset that was loaded into the LMS was tagged or identified with a unique identification number. A cataloguing protocol was developed using the type of learning asset (e.g., ILT for instructor-led training), the business unit that owned the content (e.g., HR for human resources) and a shortened course title (e.g., IDP for individual development planning). This enabled users to be able to search for courses relevant to their business unit and also streamlined reporting.

The “4 C's of Success” process is another catchy way to look at e-learning project implementations (Rosenberg, 2001). They stand for: culture, champions, communication and change strategy. A culture of learning enables the process to take on with less resistance. Although *Company XYZ* had some characteristics of a learning organization, as discussed previously, there were still challenges with some business units, who did not necessarily see the full value of e-learning. However, there were expectations from the leadership team that continuous learning was key and integral to the growth of not only individuals, but to the team and organization as a whole, and that the company should leverage technology to address geographical and time issues with training. Champions who will lead e-learning efforts are integral to e-learning adoption in the business, and *Company XYZ* had a very senior leader champion the cause, as well as project team members who played important roles in bringing awareness and commitment to The Learning Center. The third “C” stands for communication, with a multi-channel approach in order to position value. *Company XYZ* had a formal communications plan in place, which targeted intervals of time to release news articles and events highlighting The Learning Center. Finally, the change strategy involved with e-learning needs to be integrated with the business strategy so that it is supporting organizational performance. There was a very solid context for The Learning Center – it was being driven by the business, and it fulfilled an organizational need at *Company XYZ*.

Creating an e-learning strategy can be difficult, especially when the organization is not accustomed to using learning technology. As with most new initiatives, the first step is generally to analyze the current situation and identify key stakeholders to participate in the strategy development. This group helps to visualize the desired situation and sets the vision and mission. However, the situation at *Company XYZ* was

initially more reactionary to the business. After the LMS was implemented, a community of practice was formed to connect those who were administrators of the system. A steering committee of senior managers was also formed to provide a governance structure. LMS steering committees can utilize project management principles, conduct gap analyses and SWOT analyses (identifying a situation's strengths, weaknesses, opportunities and threats) so that the LMS is reflective of what the organization needs. Maher's method of program planning and evaluation, as used with this case study, also provides a clear process for project success that steering committees can leverage.

E-learning costs can be high when implementing for the first time, and implementers will be required to justify the upfront costs. E-learning is generally more effective and saves time in the long run. The delivery cycle time is shortened and there are financial benefits through time, travel and expenses. The largest saving, however, comes from "student" costs and from not taking employees away from their daily business tasks.

Conclusion / Summary

The literature on organizational learning has not quite merged with how technology, knowledge management tools and learning management systems play a role in assisting an organization's path towards becoming the ideal learning organization. Since the LMS is focused on individual learning and is an enabler in providing the members of an organization with knowledge, the question remains if the incremental increased performance of one individual is considered integral to the overall organization's learning.

As technological advances continue to evolve, and organizations dabble in social collaboration and other forms of e-learning tools to provide the same functions as

traditional communication and training, more attention needs to be focused on how organizational learning is impacted. It is unclear whether e-learning enhances organizational learning and performance, or if its impact on the individual level transcends to groups and teams and across the system.

Learners know what they need and expect to access it when they need it. The emergence of social media and robust internet search engines (e.g., Google) has created a culture of instantaneous knowledge, fueling just-in-time learning. Algorithms populate websites that track learner usage and associations, but from a traditional learning or transfer of knowledge perspective, it is still difficult to track and measure from an individual, group or organizational level. In addition, the abundance of “apps” (application software designed to help users perform specific tasks) on “smartphones” (mobile phones capable of advanced computing capability and internet connectivity) has created yet another innovative knowledge delivery method. How the traditional LMS evolves to encompass the ever-changing landscape and expectations of the technologically adept workforce remains to be seen.

References

- Anderson, C. (2008). New investment priorities emerge in technologies and services. *Chief Learning Officer*, November, 52-55.
- Argyris, C. (1997). Double-loop learning in organizations. *Harvard Business Review*, 55(5), 115-125.
- Argyris, C. (1990). *Overcoming organizational defenses: Facilitating organizational learning*. Boston: Allyn and Bacon.
- Argyris, C. (1992). *On Organizational Learning*. Cambridge, UK: Blackwell Publishers.
- Argyris, C. (1994). Good communication that blocks learning. *Harvard Business Review*, 72(4), 77-85.
- Argyris, C., & Schön, D. (1978). *Organizational learning: A theory of action perspective*. Reading, Mass: Addison Wesley.
- Bateson, G. (1973). The logical categories of learning and communication. In G. Bateson (Ed.), *Steps to an ecology of mind: Collected essays in anthropology, psychiatry and epistemology*. London: Paladin.
- Bower, M. (2007). The evolution of the LMS. *Chief Learning Officer*, November 2007.
- Boyle, T., Bradley, C., Chalk, P., Jones, R., & Pickard, P. (2003, October). Using blended learning to improve student success rates in learning to program. *Journal of Educational Media*, 28(2-3), 165-178.
- Carr, N. G. (2003). IT doesn't matter. *Harvard Business Review*, 81(5), 41-49.
- Carroll, C., 1995. Rearticulating organizational identity: Exploring corporate images and employee identification. *Management Learning*, 26(4), 463-482.

- Collis, D. (1996). Organizational capability as source of profit, in B. Moingeon and A. Edmondson (eds.), *Organizational Learning and Competitive Advantage*, 137-163. Sage, London.
- Confessore, S.J. & Kops, W.J. (1998). Self-directed learning and the learning organization: Examining the connection between the individual and the learning environment. *Human Resources Development Quarterly*, 9(4): 365-375.
- Cummings, T.G., & Worley, C.G. (1997). *Organization development and change* (6th ed.). Cincinnati: South Western College Publishing.
- Davenport T. H. & Prusak, L. (2000). *Working knowledge: How organizations manage what they know*. Boston, MA: Harvard Business School Press.
- Deal, T. E. & Kennedy, A. A. (1982). *Corporate cultures: the rites and rituals of corporate life*. London: Addison-Wesley.
- Dixon, N. M. (1994). Organizational learning: A review of the literature with implications for HRD professionals. *Human Resource Development Quarterly*, 3(1), 29-49.
- Dodgson, M. (1991). Technology learning, technology strategy and competitive pressures. *British Journal of Management*, 2(3), 132-149.
- Easterby-Smith, M. (1997). Disciplines of organizational learning: Contributions and critiques. *Human relations* (New York), 50(9): 1085-1113.
- Elmes, M. B. & Kassouf, C. J., 1995. Knowledge workers and organizational learning: Narratives from biotechnology. *Management Learning*, 26 (4), 403-422.
- Finger, M. and Brand, S. B. (1999). 'The concept of the "learning organization" applied to the transformation of the public sector.' In M. Easterby-Smith, L. Araujo and

- J. Burgoyne (eds.) *Organizational learning and the learning organization*, London: Sage.
- Fiol, C. M. & Lyles, M. A. (1985). Organizational learning. *Academy of Management Review*, 10(4), 803-813.
- Garratt, B. (1987). *The learning organization*. London, Fontana.
- Garrison, D. R., & Vaughan, N. (2008). *Blended learning in higher education*. San Francisco: Jossey-Bass.
- Garvin, D. A. (1993). Building a learning organization. *Harvard Business Review*, July-August, 78-84.
- Garvin, D.A., Edmondson, A.C. & Gino, F. (2008). Is yours a learning organization? *Harvard Business Review*. March, 109-116.
- Glynn, C.E. (2008). Building a learning infrastructure. *Training & Development*, January, 38-43.
- Hannan, M. T. & Freeman, J. (1988). *Organizational ecology*. Cambridge, MA: Harvard University Press.
- Hedberg, B. (1981). How organizations learn and unlearn. In P. C. Nystrom and W. H. Starbuck (Eds.), *Handbook of organizational design*. London: Cambridge University Press.
- Hedlund, G. & Nonaka, I. (1993). Models of knowledge management in the west and Japan. In P. Lorange (ed.), *Implementing strategic processes*. Oxford: Blackbell, 1993, 117-144.
- Hofstede, G. (1984). *Culture's consequences: International differences in work-related values*. London: Sage.

- Holman, D., Pavlica, K. & Thorpe, R. (1997). Rethinking Kolb's theory of experiential learning: The contribution of social constructivism and activity theory. *Management Learning*, 28(2), 135-148.
- Honey, P., & Mumford, A. (1982). *The manual of learning styles*. Peter Honey.
- Huber, G. (1991). Organizational learning: The contributing processes and literature. *Organizational Science*, 2(1), 88-115.
- Isaacs, W. N. (1993). Taking flight: Dialogue, collective thinking and organizational learning. *Organizational Dynamics*, 22(2), 24-39.
- Kaplan, S. & Ashley, J. L. (2003). Synchronous and Asynchronous Communication Tools, retrieved February 20, 2012 from <http://www.asaecenter.org/Resources/articleDetail.cfm?ItemNumber=13572>
- Kim, D. H. (1993). The link between individual and organizational learning. *Sloan Management Review*, Fall, 37-50.
- Kirkpatrick, D. L. & Kirkpatrick, J. D. (2007). *Implementing the four levels: A practical guide for effective evaluation of training programs*. San Francisco: Berrett-Koehler Publishers.
- Kolb, D., Rubin, I. M., & McIntyre, J. M. (1973). *Organizational psychology: A book of readings*. Englewood Cliffs: Prentice-Hall.
- Kolb, D. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs: Prentice-Hall.
- Kotter, J. P. (1995). Leading change: Why transformation efforts fail. *Harvard Business Review*, March-April, 59-67.
- Kotter, J. P. (2008). *A sense of urgency*. Boston: Harvard Business School Press.

- Lahteenmaki, S. Toivonen, J. & Mattila, M. (2001). Critical aspects of organizational learning research and proposals for measurement. *British Academy of Management*, 12(2): 113-129.
- Maher, C.A. (2012). Planning and Evaluating Human Services Programs: A Resource Guide for Practitioners. Bloomington, IN; AuthorHouse.
- Martin, K. Quigley, M.A., & Rogers, S. (2005). Implementing a learning management system globally: An innovative change management approach. *IBM Systems Journal*, 44:1 125-143.
- McDermott, R. (1999). Why information technology aspired but cannot deliver knowledge management. *California Management Review*, 41(4), 103-117.
- Miner, A. S., & Haunschild, P. R., (1995). Population level learning. *Research in Organizational Behavior*, 17, 115-166.
- Mocker, D. W. & Spear, G. E. (1982). Lifelong learning: Formal, nonformal, informal and self-directed. *ERIC Clearinghouse on adult, career, and vocational education*. Information Series No. 241.
- Nevis, E. C., DiBella, A., J., & Gould, J. M. (1995). Understanding organizations as learning systems. *Sloan Management Review*, Winter, 73-85.
- Nonaka, I. (1988). Towards a middle-up-down management: Accelerating information creation. *Sloan Management Review*, Spring, 9-18.
- Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organizational Science*, 5(1), 14-37.
- Parke, A. (1991). Interfirm diversity, organizational learning and longevity in global strategic alliances. *Journal of international business studies*, 22(4), 570-601.

- Pedler, M., Burgoyne, J. and Boydell, T. (1991). *The learning company: A strategy for sustainable development*, London: McGraw-Hill.
- Pennings, J. M., Barkema, H., & Douma, S. (1994). Organizational learning and diversification. *Academy of management journal*, 37(3), 608-640.
- Romiszowski, A. J. (2004). How's the e-learning baby? Factors leading to success or failure of an educational technology innovation. *Educational Technology*, 44(1): 5-27.
- Rosenberg, M. J. (2001). *E-Learning: Strategies for delivering knowledge in the digital age*. New York: McGraw-Hill.
- Schein, E. H., (1993). On dialogue, culture and organizational learning. *Organizational dynamics*, 22(2), 40-51).
- Senge, P. M., (1994). Learning to alter mental modes. *Executive excellence*, 11(3), 16-17.
- Senge, P. M. (1990, 2006). *The fifth discipline: The art & practice of the learning organization*. New York: Doubleday.
- Shibata, G., Tse, D., Vertinsky, I. & Wehrung, D., 1991. Do norms of decision-making styles, organizational design and management affect performance of Japan's firms? An exploratory study of medium and large firms. *Managerial and Decision Economics*, 12(2), 135-146.
- Shrivastava, P. (1983). A typology of organizational learning systems. *Journal of Management Studies*, 20, 7-28.
- Singh, H., & Reed, C. (2001). Achieving success with blended learning. *American society for training and development, State of the art industry reports 2001*.

- Spirgi, H. & Gebavi, A. (2007). Growing a viable LMS governance model. *Chief Learning Officer*, 6(8), 34-37.
- Stata, R. (1996). Organizational learning: The key to management innovation. In K. Starkey (Ed.), *How organizations learn*, 316-334. London: International Thomson Business Press.
- Sullivan, J. J. & Nonaka, I., 1986. The application of organizational learning theory to Japanese and American management. *Journal of international business studies*, 17(3), 127-147.
- Talbot, C., & Harrow, J., (1993). Sharing or withholding knowledge? An exploration of changing values in managerial and organizational learning. *Paper for British Academy of Management Conference*, Milton Keynes, September.
- Tannenbaum, S. I. (1997). Enhancing continuous learning: Diagnostic findings from multiple companies. *Human Resource Management* 36(4): 437-452.
- Vera, D. & Crossam, M. (2003). Organizational learning and knowledge management: Toward an integrative framework, in *The Blackwell Handbook of Organizational Learning and Knowledge Management*. Blackwell Publishing, Oxford.
- Wang, S.K. & Hsu, H.Y. (2008). Use of the webinar tool (Elluminate) to support training: The effects of webinar-learning implementation from student-trainers' perspective. *Journal of Interactive Online Learning*, 7(3), Winter 08, 175-194.
- Ward, J. & Aurum, A. (2004). Knowledge management in software engineering: Describing the process. In: *15th Australian software engineering conference* (ASWEC 2004), Melbourne, Australia: IEEE Computer Society Press, 137-46.
- Watson, W. R., Lee, S., & Reigeluth, C. M. (2007). Learning management systems: An overview and roadmap of the systemic application of computers to education. In

F. M. M. Neto & F. V. Brasileiro (Eds.), *Advances in computer-supported learning*, 66-96. London: Information Science Publishing.

Watson, W.R. & Watson, S.L. (2007). An argument for clarity: What are learning management systems, what are they not, and what should they become? *TechTrends* 51(2), 28-34.

Whittington, R., (1993). *What is strategy and does it matter?* London: Routledge.

Zuboff, S., (1988). *In the age of the smart machine: The future of work and power*. Oxford, Heinemann.

Appendix A

Company XYZ 2008 Employee Engagement Survey

INTRODUCTION

The 2008 \ [REDACTED] Survey offers you an opportunity to express your views on a variety of issues relating [REDACTED] and your responsibilities, with the ultimate goal of taking action to make the company a better place to work. The questionnaire was developed [REDACTED] ss, and covers a number of important topics.

YOUR OPINIONS ARE STRICTLY CONFIDENTIAL:

- Completed questionnaires will be returned to [REDACTED] for tabulation.
- [REDACTED] will report only statistical summaries of the results; no individual responses will be reported.
- No one [REDACTED] is will see any of the completed questionnaires.
- [REDACTED] s will not receive reports for groups with less than 10 respondents.

This questionnaire is divided into three sections:

I. ABOUT YOU...

In this section you are asked to provide a minimum amount of information about yourself and your position within [REDACTED] i. People from different parts of [REDACTED] or with different backgrounds may have varying opinions [REDACTED] will use this section to break down the results in a meaningful way while preserving the confidentiality of all respondents.

II. YOUR POINT OF VIEW...

In this section you are asked to express your views regarding a number of statements by marking the appropriate responses. There are, of course, no right or wrong answers. We simply ask for your honest opinions, based on your perceptions of the way [REDACTED] currently operates.

Because we are all different, some of the questions and responses may not be worded exactly as you would wish. Please indicate the responses which most closely reflect your views. In most cases, a "?" response option is provided for you to use if you cannot decide about a statement or if it does not apply to you. In other cases, a "Don't Know" or "No Opinion" response option may be provided.

III. YOUR COMMENTS...

This section provides you with an opportunity to write in any additional comments you think should be brought to the attention of [REDACTED] management.

GENERAL INSTRUCTIONS

Because this survey is designed to be scored by machine, you must indicate your opinion on each statement by marking the appropriate box. Carefully observe these requirements:

- Use a blue or black pen.
- Place a heavy "X" in the box.
- Mark only one opinion for each statement. If you want to change an answer, completely black out the wrong answer and put an "X" in the correct box.

MARKING INSTRUCTIONS

CORRECT



INCORRECT



I. ABOUT YOU**1. TO WHICH PART OF THE ORGANIZATION DO YOU REPORT?**

Please check the coding insert for your Organization. Find the correct three-digit code, write the code in the boxes across the top, and put an "X" in the box that corresponds to each number.

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

2. WHAT IS YOUR CURRENT WORK LOCATION?

CONTINUED ON NEXT PAGE.

	<ul style="list-style-type: none"><input type="checkbox"/> 11 Facilities/Building Services<input type="checkbox"/> 12 Finance and Accounting<input type="checkbox"/> 13 Geosciences<input type="checkbox"/> 14 Global E&P Commercial<input type="checkbox"/> 15 Human Resources<input type="checkbox"/> 16 Information Services<input type="checkbox"/> 17 Legal<input type="checkbox"/> 18 Marketing<input type="checkbox"/> 19 Production/Operations Retail Stores<input type="checkbox"/> 20 Management<input type="checkbox"/> 21 Non-Management (full-time)<input type="checkbox"/> 22 Non-Management (part-time)<input type="checkbox"/> 23 Sales (Commercial and Industrial)<input type="checkbox"/> 24 Supply Chain/Procurement<input type="checkbox"/> 25 Trading<input type="checkbox"/> 26 Transportation/Logistics<input type="checkbox"/> 27 Other Professional/Functional Area
<p>3. WHICH OF THE FOLLOWING <u>BEST</u> DESCRIBES YOUR PROFESSION OR THE NATURE OF THE WORK THAT YOU DO?</p> <p><input type="checkbox"/> 01 Administration (incl. administrative assistants, executive secretaries, secretaries, staff assistants and other administrative service functions)</p> <p><input type="checkbox"/> 02 Communications</p> <p><input type="checkbox"/> 03 Customer Services</p> <p>Engineering</p> <p><input type="checkbox"/> 04 Chemical</p> <p><input type="checkbox"/> 05 Drilling</p> <p><input type="checkbox"/> 06 Facilities</p> <p><input type="checkbox"/> 07 Production</p> <p><input type="checkbox"/> 08 Reservoir</p> <p><input type="checkbox"/> 09 Other Engineering</p> <p><input type="checkbox"/> 10 Environmental Health and Safety</p>	

4. WHAT IS YOUR JOB LEVEL?

- ☐ 01 Officer/Vice President
- ☐ 02 Director
- ☐ 03 Manager with direct reports
- ☐ 04 Superintendent/Supervisor with direct reports
- ☐ 05 Technical Staff with no direct reports (e.g., engineer, geologist, geophysicist, etc.)
- ☐ 06 Professional Staff with no direct reports (e.g., IS, accountant, analyst, human resources, sales, etc.)
- ☐ 07 Support Staff with no direct reports (e.g., administrative assistant, clerk, etc.)

Hourly

- ☐ 08 Full-time
- ☐ 09 Part-time
- ☐ 10 Intern/Co-op
- ☐ 11 ☐ Contractor
- ☐ 12 Temporary Employee
- ☐ 13 Other

THE FOLLOWING QUESTIONS ARE VOLUNTARY. HOWEVER, WE DO REQUEST YOUR COOPERATION IN ANSWERING THEM, FOR THE INFORMATION WILL ALLOW US TO BETTER UNDERSTAND THE VIEWS OF DIFFERENT GROUPS OF EMPLOYEES.

FOR

- ☐ 1 Less than 6 months
- ☐ 2 6 months, but less than 1 year
- ☐ 3 1 year, but less than 3 years
- ☐ 4 3 years, but less than 5 years
- ☐ 5 5 years, but less than 10 years
- ☐ 6 10 years, but less than 20 years
- ☐ 7 More than 20 years

6. PLEASE INDICATE YOUR GENDER.

- ☐ 1 Female
- ☐ 2 Male

7. WHAT IS YOUR AGE?

- ☐ 1 Less than 25 years
- ☐ 2 25 to 30 years
- ☐ 3 31 to 40 years
- ☐ 4 41 to 50 years
- ☐ 5 51 to 60 years
- ☐ 6 More than 60 years

8. WHAT IS YOUR ETHNICITY? (U.S. ONLY)

- ☐ 1 American Indian or Alaskan Native
- ☐ 2 Asian or Asian American
- ☐ 3 Black or African American
- ☐ 4 Hispanic or Latino
- ☐ 5 Native Hawaiian or Other Pacific Islander
- ☐ 6 White
- ☐ 7 Two or more races

9. ARE YOU. . . ?

- ☐ 1 An employee who has never been on an EXPAT assignment with ☐
- ☐ 2 Currently on an EXPAT assignment
- ☐ 3 Not currently on an EXPAT assignment, but have been previously with ☐

II. YOUR POINT OF VIEW

DEFINITIONS

PLEASE READ THE FOLLOWING DEFINITIONS OF KEY TERMS USED THROUGHOUT THIS SURVEY.

Supervisor or Manager refers to the person to whom you directly report, regardless of his or her title.

Hess Management or Management refers to all levels of management throughout Hess.

Department refers to the group of people you work with on a day-to-day basis.

Business/Function refers to the highest level division to which your department reports. For example, Marketing and Refining, Worldwide E&P, Chief Financial Officer, etc.

Company refers to Hess overall.

Clients/Customers refers to either internal or external groups to which your Department or the company provides a product or service.

*If you cannot decide about a statement or if it does not apply to you, mark "3", the "?" response.
In other cases, a "don't know" or "no opinion" response is provided.*

	Disagree				
		Tend to Disagree			
			?		
		Tend to Agree			
		Agree			
1. [redacted]'s benefits program fits my needs.....	1	2	3	4	5
2. I have a reasonably good idea of my possible career paths at [redacted]	1	2	3	4	5
3. Hess does an excellent job of keeping employees informed about matters affecting us.....	1	2	3	4	5
4. I feel that management supports equal opportunity for all employees	1	2	3	4	5
5. I understand how the objectives of my business/function fit into the overall corporate goals	1	2	3	4	5
6. In my opinion, [redacted] is socially responsible	1	2	3	4	5
7. [redacted] management is interested in the well-being of employees	1	2	3	4	5
8. My pay (base salary plus bonus/incentives) is as good as or better than the pay in other companies.....	1	2	3	4	5
9. I have sufficient authority to do my job well	1	2	3	4	5
10. My supervisor does a good job of building teamwork	1	2	3	4	5
11. The training and development I have received at Hess has adequately prepared me for the work I do	1	2	3	4	5
12. I have the equipment/tools/resources I need to do my job effectively	1	2	3	4	5
13. My department operates efficiently	1	2	3	4	5
14. I fully support the values for which my company stands	1	2	3	4	5

	Disagree				
	Tend to Disagree				
	?				
	Tend to Agree				
	Agree				
15. I understand how my performance on the job is evaluated.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Our benefits are as good as or better than the benefits in other organizations.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I think my company is doing a good job of:					
a. Developing people to their full potential.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Retaining its most talented people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Sufficient effort is made to get the opinions and thinking of employees in my company.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. My company provides a working environment that is accepting of:					
a. Ethnic differences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Gender differences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. I have a clear understanding of the goals and objectives of:					
a. My company as a whole	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. My business function	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. My job.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. [REDACTED] highly regarded by:					
a. The general public	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. The industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. The decisions [REDACTED] management makes concerning employees are usually fair	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. I understand how:					
a. My base salary is determined.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. My bonus/incentives is/are determined.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. I am satisfied with my involvement in decisions that affect my work.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. My supervisor gives me recognition for a job well done.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Disagree				
	Tend to Disagree				
					?
	Tend to Agree				
	Agree				
26. There are sufficient opportunities for me to receive training and professional development to improve my skills in my current job.....	1	2	3	4	5
27. My work area is a safe place to work.....	1	2	3	4	5
28. The work in my department is well organized	1	2	3	4	5
29. I would recommend ■■■ as a good place to work.....	1	2	3	4	5
30. I think my performance on the job is evaluated fairly and objectively	1	2	3	4	5
31. I have the information I need about my benefits.....	1	2	3	4	5
32. In my opinion, ■■■ does a good job of promoting people based on performance and merit.....	1	2	3	4	5
33. I am sufficiently informed about company performance.....	1	2	3	4	5
34. Employees are treated with respect here, regardless of their job or position	1	2	3	4	5
35. I think I could report instances of dishonest or unethical practices to the appropriate level of authority without fear or reprisal	1	2	3	4	5
36. ■■■ management provides a clear sense of direction	1	2	3	4	5
37. Regarding my total compensation (base salary plus bonus/incentives) I think I am paid fairly for the work I do.....	1	2	3	4	5
38. Differing opinions are openly discussed in reaching decisions in my work team	1	2	3	4	5
39. My supervisor:					
a. Is available when needed	1	2	3	4	5
b. Communicates effectively	1	2	3	4	5
40. I believe I have the opportunity for personal development and growth in this company	1	2	3	4	5
41. Action is taken when unsafe conditions are brought to management's attention.....	1	2	3	4	5
42. Decisions are made in a timely manner in my department	1	2	3	4	5
43. I am proud to be a part of ■■■	1	2	3	4	5
44. Performance reviews are conducted on a regular and timely basis in my department...	1	2	3	4	5
45. Hess recognizes and respects the value of diversity and human differences	1	2	3	4	5

	Disagree				
	Tend to Disagree				
		?			
	Tend to Agree				
	Agree				
46. I believe [] is an environmentally responsible company	1	2	3	4	5
47. [] management is generally respected by employees	1	2	3	4	5
48. People in my department are encouraged to come up with innovative solutions to work-related problems.	1	2	3	4	5
49. I have confidence in the decisions made by my supervisor	1	2	3	4	5
50. I feel responsible for my own development.....	1	2	3	4	5
51. My work schedule allows sufficient flexibility to meet my personal/family needs.....	1	2	3	4	5
52. The amount of work I am responsible for is reasonable and manageable	1	2	3	4	5
53. I am willing to work beyond what is required in my job to help my company succeed...	1	2	3	4	5
54. My company operates with integrity in its external dealings (i.e., with customers, suppliers, business partners, governments, communities, NGOs)	1	2	3	4	5
55. Regarding []'s core values, I believe:					
a. The values are clear.....	1	2	3	4	5
b. Management decisions are consistent with the values.....	1	2	3	4	5
56. I feel challenged by my work.....	1	2	3	4	5
57. It would take a lot to make me look for another employer.....	1	2	3	4	5
58. [] maintains high ethical standards	1	2	3	4	5
59. As a result of this survey, I think management will act on problems identified	1	2	3	4	5
60. My company energizes me to go the extra mile	1	2	3	4	5
61. I believe strongly in the goals and objectives of my company	1	2	3	4	5

**PLEASE NOTE THAT THE FOLLOWING QUESTIONS
HAVE SEVERAL DIFFERENT RESPONSE SCALES.**

	No Opinion			
	Too Slow			
	Too Fast			
	About Right			
62. The current pace of change in my company as a whole is	1	2	3	4

		Don't Know	Very Poor	Poor	Average	Good	Very Good
63. How good a job do you feel [] is doing in matching pay to performance?.....	[1]	[2]	[3]	[4]	[5]	[6]	
64. How do you rate your last performance review on the following:							
a. Helping you identify your strengths and weaknesses	[1]	[2]	[3]	[4]	[5]	[6]	
b. Helping you improve your job performance.....	[1]	[2]	[3]	[4]	[5]	[6]	

		Don't Know	No	Yes
65. At the present time, are you seriously considering leaving []?	[1]	[2]	[3]	

		No Opinion	Change for the Worse	Stay the Same	Change for the Better
66. Looking ahead to the next year or so, I think [] will:	[1]	[2]	[3]	[4]	

		Very Dissatisfied	Dissatisfied	Neither Satisfied nor Dissatisfied	Satisfied	Very Satisfied
67. How satisfied are you with the information you receive on what's going on at []? ...	[1]	[2]	[3]	[4]	[5]	
68. For the work you do, how satisfied are you with your base pay?	[1]	[2]	[3]	[4]	[5]	

69. Below are some scales describing opposite extremes of different styles of management. Please indicate the nature or style of management you feel exists within [redacted] at the present time. CHECK ONLY ONE BOX for each style of management dimension.

EXAMPLE:

Extremely		Somewhat		Equal		Somewhat		Extremely	
Formal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Informal

If you consider the style of management of [redacted] to be "Extremely formal", you would place an "X" in box 1. If, on the other hand, you consider the style of management of [redacted] to be "Somewhat informal", you would place an "X" in box 4. If you feel that the style of management [redacted] cannot be characterized as either formal or informal, you would place an "X" in box 3. Always mark the box that best describes your opinion.

Please indicate the nature or style of management you feel exists within Hess at the present time:

Extremely		Somewhat		Equal		Somewhat		Extremely	
a. Bureaucratic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Entrepreneurial
b. Reactive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Proactive
c. Internally Competitive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Internally Collaborative
d. Execution Oriented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Planning Oriented
e. People Oriented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Task Oriented
f. Directive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Participative
g. Strategy Oriented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Short-term Oriented
h. Rigid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Flexible
i. Decisive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Indecisive
j. Customer Focused	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Internally Focused

Appendix B

LMS Pilot Survey

1. It was easy to navigate and look for courses in The Learning Center.
Strongly Agree / Agree / Neutral / Disagree / Strongly Disagree
2. The courses I viewed had high quality content
Strongly Agree / Agree / Neutral / Disagree / Strongly Disagree
3. In what ways will The Learning Center add value to the business?
Open ended comments section
4. What additional areas or courses should be added to The Learning Center?
Open ended comments section
5. How would you rate your overall experience with The Learning Center?
Excellent / Good / Average / Fair / Poor
6. Would you recommend The Learning Center to others?
Yes / No
7. If you answered “no” to the above question, why not?
Open ended comments section
8. Please provide additional comments.
Open ended comments section

Appendix C

Email Invitation for LMS Survey

**COMPANY
LOGO**

Take a Survey About The Learning Center -- Available Through Aug. 3
Your Opinions Will Help The Company Plan Future Employee Learning Opportunities

██████████ encourages employees to continually develop personally and professionally so that they have the skills and abilities to deliver business results and enjoy a rewarding career. One key development resource available to employees is The Learning Center, the global learning management system. You are invited to share your thoughts about this resource through a short online survey. Your responses will provide the company with feedback on which to base future learning and development initiatives, and enhancements to The Learning Center.

Go to the survey now by clicking here

<https://www.surveymonkey.com/s/thelearningcenter>. The survey takes less than 15 minutes and will be available through Aug. 3. Additional information about the survey and how the data will be used is also provided. Your participation is voluntary and all responses will be kept confidential.

For more information, please contact Mary Tung, Learning and Development Specialist, at ██████████.

Thank you.

Appendix D

Intranet Featuring Banner Advertising Survey

The screenshot displays an intranet interface with a blue header bar containing navigation links: Search, People, Tools, Personalize, and Help. Below the header, a secondary bar shows the user's name 'Good Afternoon Mary' and the date 'Wed, Jul 14 2010'. The main content area is divided into several modules:

- Global Phonebook:** A search interface for personnel, requiring a search phrase and location (set to 'ALL').
- Corporate Communications Feature Story:** A large empty box for featured content.
- Share Price (NYSE):** A module showing stock price information, including 'Change', 'High', and 'Low'.
- Corporate Communication - Info:** A module featuring a globe icon and a link to 'Click here to take a short survey about The Learning Center.'
- Corporate Center Links:** A list of links including 'Chairman's Award for Safety Excellence', 'Code of Business Conduct & Ethics', 'Corporate Accounting Policies', 'Corporate Environment Health & Safety', and 'Corporate Internal Audit Charter'.
- My Links:** A list of links including 'ePay', 'Corporation', 'Global Phonebook', 'News', 'Help', 'Outlook Web Access Gateway', and 'Search'.
- Today's News Summary:** A section titled 'Top Stories' containing two news items:
 - BP Set to Test New Fix For Leaking Well:** A report from The Wall Street Journal dated 07/14/2010, stating that BP PLC postponed testing Tuesday on a new tight-fitting containment cap that could stop the flow of oil from its blown-out well for the first time. The test, which was scheduled to start late Tuesday, was delayed after the U.S. government and company officials said that further analysis had to be done on Tuesday and Wednesday before determining the fitness of the cap.
 - Natural-Gas Driller to Disclose Chemical Use:** A report from The Wall Street Journal dated 07/14/2010, stating that Range Resources Corp. says it plans to disclose the chemicals used to hydraulically fracture natural-gas wells in Pennsylvania, a move that is seen as a response to environmental groups' criticism.

Appendix E

Focus Group Email Invitation

Dear Colleagues,

You are invited to attend one of two 90-minute focus group sessions to be held on **August 19** in New York. The primary objective of these focus groups is to get your feedback on global XXX system: The Learning Center. The feedback from these sessions will provide us with direction on the areas to focus on for enhancements or upgrades.

There will be an overview/demo of The Learning Center at the beginning of each session, and lunch or beverages/snacks will be provided.

Additional context is below. We may also touch upon other learning and development topics in relation to The Learning Center and Performance Management.

Please look for two Outlook invitations and select the most convenient.

August 19 - NY Executive Dining Room

12:00 - 01:30PM -- Focus Group Session 1 (lunch provided)

02:00 - 03:30PM -- Focus Group Session 2 (snacks & beverages)

If you are unable to attend either focus group sessions, you may send your feedback or participate in a brief interview that I will schedule with you. If you do not wish to participate, you do not need to take any action or may decline the invites.

Thank you - I look forward to some engaging discussions.

Mary Tung
HR, Learning & Development

Context for The Learning Center

A little over a year ago, a cross-functional project team introduced the company's first global learning management system, The Learning Center. The uptake of the system has been steady, in alignment with the strategy of targeting learners with relevant training initiatives and programs rather than highlighting the system itself.

You may have seen the recent electronic survey to collect feedback from a globally representative audience. We would like to know your perspective and experience with The Learning Center, the role of the Learning and Development team in supporting the business with e-learning and what you see as the next steps to truly leverage the system capabilities to its fullest potential.

Please note that feedback for The Learning Center (in a confidential format) will also be a part of Mary Tung's doctoral dissertation work on evaluating the learning management system. For additional information or to view the survey, please visit: <https://www.surveymonkey.com/s/thelearningcenter>.

Appendix F

Interview and Focus Group Guide



INTERVIEW / FOCUS GROUP GUIDE

For the Feedback of The Learning Center

Logistics

- Schedule a meeting room for 2 hours (15-30 min prep, 30 min demo, 60 min focus group)
- Equipment needed: 4 flip charts and markers, projector, screen.
- Arrange catering if applicable
- Print materials

Focus group sessions

- As people enter, hand them the consent sheet.
- Set context. Explain use of data and confidentiality, consent sheet.
Collect consent sheet.
- Quick round of intros (if needed).
- Start with Demo of The Learning Center (use slides, 20 min)
- Start focus group questions - if more than 8 participants, split into pairs or small groups.
Assign 2-3 questions for each group. (15 min)
- Have each group report out. Allow others to add comments. (15 min)
- Bring up screenshots/system as needed.
- Transition to online performance management system (use slides)
- Using same format, if more than 8 participants, split into small groups. Assign 2-3 questions each. (15 min)
- Report out. Allow others to add comments (15 min)
- Wrap up, thank for participation (10 min)

The Learning Center Questions

- Have you used The Learning Center? How? If no, why not?
- How do you see your role in regards to The Learning Center, if any?
- What is your experience with learning management systems and/or e-learning in your previous roles outside of *Company XYZ*?
 - Was the LMS housed in the IT department or within HR?
- How would you describe awareness of The Learning Center?
- How would you define the perception and uptake of e-learning in your group(s)?
- How do you use or plan to use The Learning Center with your business in any way?
- Where are there departments or sponsors that actively use The Learning Center? How have they used it?
- What do you see as learning gaps that can use e-learning as a possible solution?
- Do you think that The Learning Center adds value to the business? How?
- What are some of the challenges that you see with further adoption of The Learning Center?
- What additional areas or courses should be added to The Learning Center?
- What is the perception of the role of L&D in the business around learning technologies?
- Any other comments or feedback?

Close: Thank you for participating. If you have any questions, please feel free to contact me.

Appendix G

Information Sheet for Interview or Focus Group Participants



INFORMATION SHEET FOR INTERVIEW OR FOCUS GROUP PARTICIPATION The Evaluation of The Learning Center

Purpose of the Study: The purpose of this study is to evaluate the effectiveness of *The Learning Center* by examining employee impressions of the quality and usefulness of system and its contents, as well as to collect feedback on how to improve the system for its learners. The aggregate data will be used in a graduate level dissertation conducted by Mary Tung.

Explanation of Procedures: If you decide to participate in this study, you will take part in either an interview or as part of a focus group discussion with 8-10 other participants, which will be led by an interviewer/facilitator (Mary Tung). The session may be audio-recorded. The questions that the interviewer/focus group facilitator will ask will address your opinions about the quality of The Learning Center and its e-learning content, your thoughts about the training and educational options available in the system and your impressions of how the business and different groups are using the system and e-learning. The interview or focus group session will last approximately 1 hour.

Confidentiality: This research is confidential. Confidential means that the research records will include some information about you, such as handwritten notes and audio-recordings where you may be identified. In addition, this information will be stored in such a manner that some linkage between your identity and the response in the research exists. The research team and the Institutional Review Board at Rutgers University are the only parties that will be allowed to see the data, except as may be required by law. If a report of this study is published, or the results are presented at a professional conference, only group results will be stated. All study data will be kept for at least three years and then destroyed.

Risks and Discomforts: There are no foreseeable risks to participation in this study.

Benefits: There are no direct benefits from taking part in this study. However, the results of this study may contribute to more tailored learning and development offerings to you and other employees through *The Learning Center*.

Voluntary Participation: Participation in this study is voluntary. You may choose not to participate, and you may withdraw at any time during the study procedures without any penalty to you. In addition, you may choose not to answer any questions with which you are not comfortable.

Contact Information: If you have any questions about the study or study procedures, you may contact:

Mary Tung (Principal Investigator)

Charles Maher Psy.D. (Faculty Advisor)

If you have any questions about your rights as a research subject, you may contact the IRB Administrator at Rutgers University at:

Rutgers University, the State University of New Jersey
Institutional Review Board for the Protection of Human Subjects

You will be given a copy of this consent form for your records.

Your signature below shows that you understand the above and agree to participate in this focus group.

Name (printed) _____ Signature _____ Date _____

Appendix H

Global LMS Survey

The Learning Center Survey

Please take a few moments to help us improve your experience.

Thank you for taking the time to share your feedback about **The Learning Center**.

If you have already completed this survey, thank you - you may exit by closing this window.

Click on the **NEXT** button at the bottom of the page to continue to the survey.

ABOUT THIS SURVEY

As part of the company's efforts to provide and enhance learning and development opportunities, and to collect feedback about *The Learning Center*, please consider taking about **15 minutes** of your time to complete this electronic survey. Your collective feedback will allow us to identify Hess learning and development needs and to benchmark against industry standards and practices for learning management, e-learning and other areas.

The aggregate data from this survey will also be used in a dissertation study that is being conducted by Mary Tung, who is an employee of Hess Corporation and a doctoral candidate in the Graduate School of Applied and Professional Psychology at Rutgers, the State University of New Jersey.

Research Description: The purpose of this study is to evaluate the effectiveness of *The Learning Center* by examining employee impressions of the quality and usefulness of the system and its contents, as well as to collect feedback on how to improve the system for its learners.

Risks and Benefits: There are no foreseeable risks to participating in this study. The benefits associated with your participation, other than enhancement of scientific knowledge, may include more tailored learning and development offerings to you through *The Learning Center*.

Voluntary Participation: Your participation is entirely voluntary and you may choose to withdraw at any time, or choose to skip any questions that you do not wish to answer without any penalty.

Protection of privacy and Confidentiality of Data: The information collected will be kept confidential, as the survey may include information about your identity (as provided by you) and your responses. Your responses will be transmitted securely using SSL encryption. There will be limited access to any identifying information (the principal investigator and research team, the Institutional Review Board (IRB) and others as required by law). All results or reports will be in the aggregate. Study data will be kept for at least 3 years before they are securely destroyed. By participating in this survey, you agree to be a participant in the study.

Contact Information: For additional information about this survey, your rights as a research participant and contact information, please email or visit

The Learning Center Survey

What was the primary reason(s) for your most recent visit to The Learning Center?

- ☐ Looking for specific course or information to perform a task
- ☐ To perform administrative functions (ie., set up sessions, run reports, check attendance)
- ☐ To complete a required course or program
- ☐ I have not been in The Learning Center yet.
- ☐ Looking for courses for my Individual Development Plan (IDP)
- ☐ Just browsing
- ☐ Other (please specify)

How often do you visit The Learning Center?

- ☐ Almost daily
- ☐ Very Often (at least once a week)
- ☐ Often (once or twice a month)
- ☐ Sometimes (once every few months)
- ☐ Rarely (once or twice a year)
- ☐ Never
- ☐ I don't know

System Features

The Learning Center Survey

How satisfied are you with The Learning Center in the following areas?

If you have not used a function, please leave blank.

	Not at all Satisfied	Slightly Satisfied	Moderately Satisfied	Very Satisfied	Extremely Satisfied	Not Applicable
Navigation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Catalog Structure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Search Function	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Variety of e-learning topics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Login Process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instructor-Led Training (ILT) Registration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality of e-learning content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Offline course player	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relevance of e-learning courses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Additional Comments - please include any additional topics/course suggestions

Would you recommend The Learning Center to others?

- ☐ Yes
☐ No

If you have comments or selected "No," please explain:

What are three most important benefits of The Learning Center for you as a user?

100 character limit for each line

1.
2.
3.

What are the three areas of improvement we should focus on for The Learning Center?

100 character limit for each line

1.
2.
3.

Organizational Demographics

The demographic information collected will be used to determine aggregate themes, so that we can better improve the experience of groups with common characteristics.

What business organization do you identify with?

- ☐ Corporate Support Functions (e.g., Finance, Legal, HR)
☐ Upstream – Exploration and Production (E&P)
☐ Downstream – Marketing and Refining (Non-Retail Stores)
☐ Downstream – Marketing and Refining (Retail Stores)
☐ HOVENSA
☐ Other (please specify)

Which best describes your job level?

- | | |
|---|---|
| <input type="radio"/> Officer/Vice President | <input type="radio"/> Professional Staff with no direct reports |
| <input type="radio"/> Director/Senior Manager | <input type="radio"/> Administrative/Support Staff |
| <input type="radio"/> Manager with direct reports | <input type="radio"/> Intern/Co-op |
| <input type="radio"/> Superintendent/Supervisor with direct reports | <input type="radio"/> Hess Contractor/Temporary Employee |
| <input type="radio"/> Technical Staff with no direct reports | |
| <input type="radio"/> Other (please specify) | |

Profession and Tenure**Which of the following best describes your profession or area of expertise in your current role?**

- | | | |
|--|---|--|
| <input type="radio"/> Administrative | <input type="radio"/> Facilities/Building Services | <input type="radio"/> Marketing |
| <input type="radio"/> Commercial | <input type="radio"/> Finance and Accounting | <input type="radio"/> Production - Field Operators/Technicians |
| <input type="radio"/> Communications | <input type="radio"/> Geosciences | <input type="radio"/> Retail Stores |
| <input type="radio"/> Customer Services | <input type="radio"/> Human Resources | <input type="radio"/> Sales |
| <input type="radio"/> Engineering | <input type="radio"/> Information Services/Technology | <input type="radio"/> Supply Chain/Procurement |
| <input type="radio"/> EH&S/Social Responsibility | <input type="radio"/> Legal | <input type="radio"/> Trading |
| <input type="radio"/> Other (please specify) | | |

How long have you worked with the company?

- | | |
|---|--|
| <input type="radio"/> Less than 6 months | <input type="radio"/> 5 years, but less than 10 |
| <input type="radio"/> Over 6 months, but less than 1 year | <input type="radio"/> 10 years, but less than 15 |
| <input type="radio"/> 1 year, but less than 3 | <input type="radio"/> 15 years but less than 20 |
| <input type="radio"/> 3 years, but less than 5 | <input type="radio"/> More than 20 years |

Employee Demographics**Which age group do you belong to?**

- | | |
|-----------------------------------|-----------------------------------|
| <input type="radio"/> 18-25 years | <input type="radio"/> 51-60 years |
| <input type="radio"/> 25-30 years | <input type="radio"/> 61-70 years |
| <input type="radio"/> 31-40 years | <input type="radio"/> 71+ years |
| <input type="radio"/> 41-50 years | |

The Learning Center Survey

Where is your current work location?

- ☐ United States
☐ Northwest Europe/Eurasia
☐ Africa
☐ Asia/Asia Pacific
☐ St. Lucia
☐ Australia
☐ South America
☐ Other (please specify)

United States

You selected the United States as your work location. Please specify.

- | | | |
|--|---|--|
| <input type="radio"/> Connecticut | <input type="radio"/> Nevada | <input type="radio"/> Oklahoma |
| <input type="radio"/> Delaware | <input type="radio"/> New Hampshire | <input type="radio"/> Pennsylvania |
| <input type="radio"/> Florida | <input type="radio"/> New Jersey - Woodbridge | <input type="radio"/> Rhode Island |
| <input type="radio"/> Georgia | <input type="radio"/> New Jersey - Port Reading | <input type="radio"/> South Carolina |
| <input type="radio"/> Gulf Coast Offshore | <input type="radio"/> New Jersey - Other | <input type="radio"/> Tennessee |
| <input type="radio"/> Hawaii | <input type="radio"/> New Mexico | <input type="radio"/> Texas - Houston |
| <input type="radio"/> Illinois | <input type="radio"/> New York - New York City | <input type="radio"/> Texas - Seminole |
| <input type="radio"/> Kansas | <input type="radio"/> New York - Other | <input type="radio"/> Texas - Other |
| <input type="radio"/> Louisiana | <input type="radio"/> North Carolina | <input type="radio"/> Virgin Islands - St. Croix |
| <input type="radio"/> Maryland | <input type="radio"/> North Dakota - Tioga | <input type="radio"/> Virginia |
| <input type="radio"/> Massachusetts | <input type="radio"/> North Dakota - Other | <input type="radio"/> Washington |
| <input type="radio"/> Minnesota | <input type="radio"/> Ohio | <input type="radio"/> West Virginia |
| <input type="radio"/> Other (please specify) | | |

Northwest Europe/Eurasia

You selected Northwest Europe/Eurasia as your work location. Please specify.

- | | |
|--|---|
| <input type="radio"/> Azerbaijan | <input type="radio"/> Russia |
| <input type="radio"/> Denmark - Copenhagen | <input type="radio"/> Scotland - Aberdeen |
| <input type="radio"/> Denmark - South Arne | <input type="radio"/> UK - London |
| <input type="radio"/> Norway | <input type="radio"/> UK - Triton |
| <input type="radio"/> Other (please specify) | |

Africa

You selected Africa as your work location. Please specify.

- ☐ Algeria
- ☐ Egypt
- ☐ Equatorial Guinea - Bome
- ☐ Equatorial Guinea - Offshore
- ☐ Ghana
- ☐ Libya
- ☐ Other (please specify)

Asia/Asia Pacific

You selected Asia/Asia Pacific as your work location. Please specify.

- | | |
|---|--|
| <input type="radio"/> China - Beijing | <input type="radio"/> Singapore |
| <input type="radio"/> Indonesia - Gresik | <input type="radio"/> Thailand - Bangkok |
| <input type="radio"/> Indonesia - Jakarta | <input type="radio"/> Thailand - Khon Kaen |
| <input type="radio"/> Malaysia - Kuala Lumpur | |
| <input type="radio"/> Other (please specify) | |

The Learning Center Survey

Please share any other comments or suggestions below.

You may choose to participate further in this or other related research/feedback collection, or to receive periodic updates.

You may select more than one.

- ☐ Please share with me the results of this survey.
- ☐ Please include me in future focus groups about this and other learning and development topics.
- ☐ Please include me on an email list to receive updates about The Learning Center and its offerings.

If you selected any of the above, please provide your name and email address (on separate lines) below. This information will not be used for any other purpose.

Appendix I**Project Charter Based on Feedback from Survey and Focus Groups**

Human Resources & Information Systems
The Learning Center Upgrade

Authors: Sr. Manager, HR Data Integration & Rptg
Specialist, Learning & Development

Date Created: 10/29/2010

Status: Project Proposed

Version: 2.3

Attribute	Description
HR Sponsor	XXX
Business Lead	XXX
Project Lead / Manager	XXX
Project Description	<p>In 2006 XXX XXX partnered with XXX to implement the XXX learning management system (LMS), installing training PCs in 800 XXX store sites. Eight XXX WBT courses were developed with XXX and rolled out to store associates. Associates take the courses via an offline course player (XXX Course Manager) which they must log into using a user id (XXX employee id) and password (consisting of the last 4 digits of their social security number - SSN).</p> <p>In 2008, multiple business needs emerged in XXX for web-based training and tracking. At this same time plans were underway to implement XXX. In an effort to leverage what we already had, minimize the proliferation of one-off LMS' and keep change to a minimum, a decision was made to implement XXX across the rest of our XXX businesses, including limited use in XXX.</p> <p>In 2009 The Learning Center was 'soft-launched' with learning initiatives and programs. The decision to soft launch was three-fold: (1) economic conditions at Q4 2008 / Q1 2009 were resulting in workforce reductions (2) content was not very robust and there was a fear people would go out to the system and be "underwhelmed"; and (3) log-on difficulties for individuals outside the U.S. (essentially anyone without a SSN had initial difficulties logging onto the system).</p> <p>Since then, the initial international log-on difficulties have lessened. Content continues to build. XXX went live in 2010 with new rules/policies around the use of SSN in any form of password, creating new complications and confusion regarding passwords and log-in credentials. Single Sign-On (SSO) became the go-forward technology. Finally, with the advent of the XXXXXX and more focus, in general, on development from the business, The Learning Center is gaining more traction and will only continue to do so in the future.</p> <p>Our current system is:</p> <p>XXX System Platform</p> <p>XXX Offline Course Player (XXX is on XXX for offline course player)</p>

Attribute	Description
Project Description (continued)	<p>Problem Statement (Purpose)</p> <p>There are a number of issues at hand that build a compelling business case to upgrade XXX to the latest version, including:</p> <ul style="list-style-type: none"> • XXX will no longer support the current version of the XXX offline course player in XXX stores. The 'target date' for moving clients off version XXX is 30 November 2010. XXX is also no longer supporting XXX of the system platform by 1 April 2011. Version XXX of the system platform, which XXX is on, will continue to be supported by XXX, but XXX is encouraging all clients to move to version XXX.0 or above. Expectations are in the near future that XXX will announce a target date for moving clients off XXX as well. Therefore it is critical that XXX upgrade to at least version XXX as soon as possible. • Users find password/log-on credentials for using The Learning Center confusing, and they are no longer in line with the company's philosophy towards credentialing. Some international users still experience issues logging onto the tool. SSO would eliminate many of the problems employees are currently facing with respect to The Learning Center access, not to mention it is our philosophical way forward. SSO will not alleviate login/password issues for users of the offline player, as these users will still need to manually login. • Awareness of The Learning Center is low throughout all businesses. XXX store associates are exposed only to the offline player. Most employees do not know about its functionality and content, and therefore it is grossly underutilized in an organization that is focusing on development. Furthermore, the branding within The Learning Center is based on the XXX concept which is now obsolete. • Although content has grown since initial implementation, current content needs to be evaluated for relevance and additional content added to achieve value. <p>Although more robust learning systems do exist, XXX is deemed fit for purpose based on current needs, with high benefits and minimal stress to the business.</p>

Attribute	Description
Project Objectives	<p>The project objective is to deliver an improved and re-branded XXX Learning Center that will have easy access to enhanced learning and development resources and tools to support the business initiative of XXX and overall employee development.</p> <p>To achieve this high level objective the team will focus on the following:</p> <ul style="list-style-type: none"> • Upgrade XXX Platform from XXX to at least version XXX.0 and possibly XXX.1 if available • Upgrade XXX offline player to vXXX • Implement SSO for all online users • Streamline password protocol for all users of offline course players • Build e-learning course content (ongoing) <ul style="list-style-type: none"> ▪ XXX specific and other ▪ Evaluate desktop library (currently 400 courses) and other off-the-shelf content • Develop sustainable support model for: <ul style="list-style-type: none"> ▪ Learning administrators ▪ System administrators ▪ Reporting • Provide Managers with reporting and plan assignment capabilities • Re-launch The Learning Center via marketing campaign by end of Q1 2011
Project Scope	<p><u>The scope of work included in this effort will be executed in two phases as follows:</u></p> <p><u>Phase I: Upgrades (Completed by end Q1 – March 31, 2011):</u></p> <ul style="list-style-type: none"> • Implement SSO using PING Federated/Service Provider Interface (SPI) <ul style="list-style-type: none"> ▪ Move to HTTPS server required (1 day downtime) • Upgrade XXX platform from XXX to latest available version (either 7.0 or XXX.1) <ul style="list-style-type: none"> ▪ Existing records will migrate to updated platform ▪ Design/re-brand upgraded site • Upgrade offline course player throughout XXX to latest version <ul style="list-style-type: none"> ▪ Test new version of offline player ▪ Identify and test deployment method for XXX Stores • Evaluate, develop and update content with functional owners (on-going) <ul style="list-style-type: none"> ▪ XXX Desktop Skills Library ▪ XXX Business Skills Library ▪ Functional/Technical content ▪ Develop XXX-customized content <ul style="list-style-type: none"> ▪ Identify vendors for e-learning development ▪ Identify capacity for internal development ▪ Continue to integrate any existing content into LMS • Create change management, communication and training strategies

Attribute	Description
Project Scope (continued)	<ul style="list-style-type: none"> • Design and develop XXX SharePoint site as the “front-end” portal of The Learning Center • Develop and implement a sustainable support structure for learning administration support, system administration support, and reporting <p>Launch new and improved Learning Center: Implement any required change management/communication/training activities/materials associated with launch (i.e., ‘marketing campaign’)</p> <p><u>Phase II: Enhancements and Benchmarking (Completed Q3 / Sept 30, 2011)</u></p> <ul style="list-style-type: none"> • Develop/Implement streamlined password strategy for offline players, including a 1X batch upload for all employees hired prior to 2010 • Conduct evaluation/benchmark marketplace LMS/HR integrated systems – develop longer term LMS strategy • Identify and implement strategy on managing contractors for the LMS • Initiate manager functionality to feed manager information from SAP to XXX that will allow managers capability to run reports and manage assignments for their direct reports (My Plan Assigner) (change order request approved by XXX) • XXX enhancements to SAP Feed, based on job code (change order request approved by XXX): <ul style="list-style-type: none"> ▪ Place employees into two organization folders in XXX: their default organization (XXX folder) and in the XXX tree, under folder path XXX Custom Groups>>XXX HR. ▪ For certain job codes change their role to administrator and grant reports and management rights in the XXX organization <p><u>Ongoing</u></p> <ul style="list-style-type: none"> • Build XXX-specific content • Identify vendors for e-learning development • Streamline process for e-learning and ILT requests <p><u>Items that are Not In Scope as part of this effort:</u></p> <ul style="list-style-type: none"> • Joint ventures including XXX and XXX <p><u>Project Assumptions:</u></p> <ul style="list-style-type: none"> • Offline course player is compatible with current XXX environment (Windows XXX and Internet Explorer XXX) and new XXX environment to be implemented in 2011 (Windows XXX and Internet Explorer XXX) • No changes are required to current SAP-XXX interface for the upgrade • XXX will work with us on client support until we can upgrade • Existing courses will work with the new version of the offline course player. • Can deploy new offline player in advance of the upgraded platform

Attribute	Description																																																
Approach	<p>The project approach will closely follow the Lean methodology as this effort will involve quality improvement of systems and processes. Although this effort is the product of a vendor upgrade, XXX has the opportunity to improve system capability, business adaptability and implement process improvements in parallel.</p> <div><div>Initiation</div><div>Plan & Design</div><div>Execution</div><div>Deployment</div><div>Close & Manage</div></div>																																																
Deliverables	<table><tr><th>Phase XXX / XXX</th><th>Deliverables</th><th>Lead</th><th>Timeline (END)</th></tr><tr><td>I</td><td>Joint XXX/XXX Project Plan</td><td>All</td><td>Nov 2010</td></tr><tr><td>I</td><td>Evaluate off-the-shelf content</td><td>L&D</td><td>Dec 2010</td></tr><tr><td>I</td><td>Contract Renewal / SOW Signed</td><td>IS, L&D</td><td>Dec 2010</td></tr><tr><td>I</td><td>Test & Develop new version of offline player and deployment strategy</td><td>IS</td><td>Jan 2010</td></tr><tr><td>I</td><td>Change management strategy</td><td>L&D</td><td>Jan 2011</td></tr><tr><td>I</td><td>Communication strategy</td><td>Comm</td><td>Jan 2011</td></tr><tr><td>I</td><td>Training strategy</td><td>L&D</td><td>Jan 2011</td></tr><tr><td>I</td><td>Design/Re-branding</td><td>Comm</td><td>Jan 2011</td></tr><tr><td>I</td><td>Support strategies (Learning, Reporting & Sys Admin)</td><td>L&D HR Systems</td><td>Feb 2011</td></tr><tr><td>I</td><td>SSO testing</td><td>IS</td><td>Feb 2011</td></tr><tr><td>I</td><td>Test system upgrade</td><td>IS</td><td>Feb 2011</td></tr></table>	Phase XXX / XXX	Deliverables	Lead	Timeline (END)	I	Joint XXX/XXX Project Plan	All	Nov 2010	I	Evaluate off-the-shelf content	L&D	Dec 2010	I	Contract Renewal / SOW Signed	IS, L&D	Dec 2010	I	Test & Develop new version of offline player and deployment strategy	IS	Jan 2010	I	Change management strategy	L&D	Jan 2011	I	Communication strategy	Comm	Jan 2011	I	Training strategy	L&D	Jan 2011	I	Design/Re-branding	Comm	Jan 2011	I	Support strategies (Learning, Reporting & Sys Admin)	L&D HR Systems	Feb 2011	I	SSO testing	IS	Feb 2011	I	Test system upgrade	IS	Feb 2011
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Deliverables (continued)	Phase XXX / XXX	Deliverables	Lead	Timeline (END)
	I	Upgrade/Deploy offline player	IS	Mar 2011
	I	Deploy SSO with new Launch	IS	Mar 2011
	I	Launch The Learning Center	L&D, Comm	Mar 2011
	II	Implement streamlined password strategy	IS	Apr 2011
	II	Implement manager functionality	IS	Sep 2011
	II	Implement Change Mgmt for Managers	L&D	Sep 2011
	II	Develop strategy for managing contractors	TBD	Sep 2011
Project Costs	Estimated cost associated with upgrade to XXX XXX.1x and launch of The Learning Center.			
	The Learning Center Phase I			
	Cost Category	Implementation Estimate	Recurring (Annual)	
	XXX (includes upgrades, implementation and XXX content)	\$\$	\$\$	
	SSO Costs	\$\$	\$\$	
	XXX IS Deployment	\$\$	\$\$	
	Non-XXX Deployment	\$\$	\$\$	
	L&D Resources (Contractors)	\$\$	\$\$	
	Content Development	\$\$	\$\$	

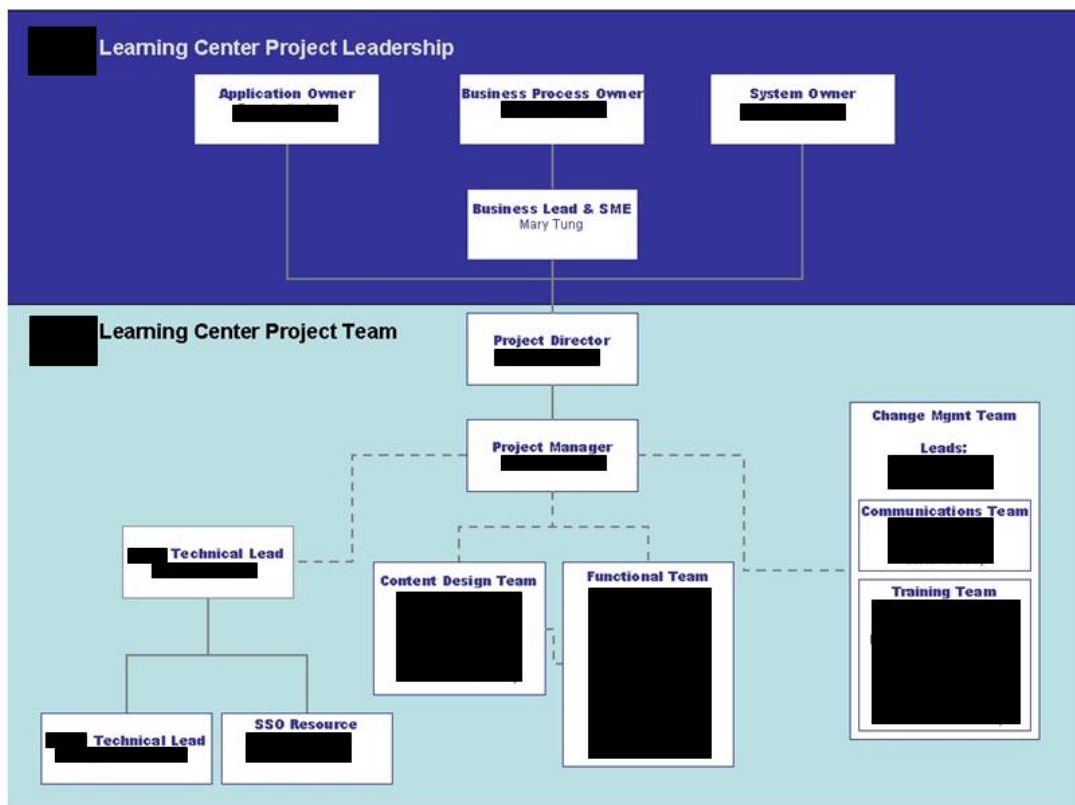
Attribute	Description		
Project Costs (continued)	Cost Category	Implementation Estimate	Recurring (Annual)
	Communications: Branding/XXX SharePoint Site Design and Development	\$\$	\$\$
	Training Materials	\$\$	\$\$
	External / Internal Project Travel	\$\$	\$\$
	Miscellaneous (10% Project Cost)		
	Total Estimated Costs	\$\$+	
	The Learning Center Phase II		
	Cost Category	One Time Cost Estimate	
	XXX Fees	\$\$	
	New Server Configuration	\$\$	
	Communications	\$\$	
	Training Materials for Managers	\$\$	
	External / Internal Project Travel	\$\$	
	Miscellaneous (10% Project Cost)	\$\$	
	Total Estimated Costs	\$\$+	

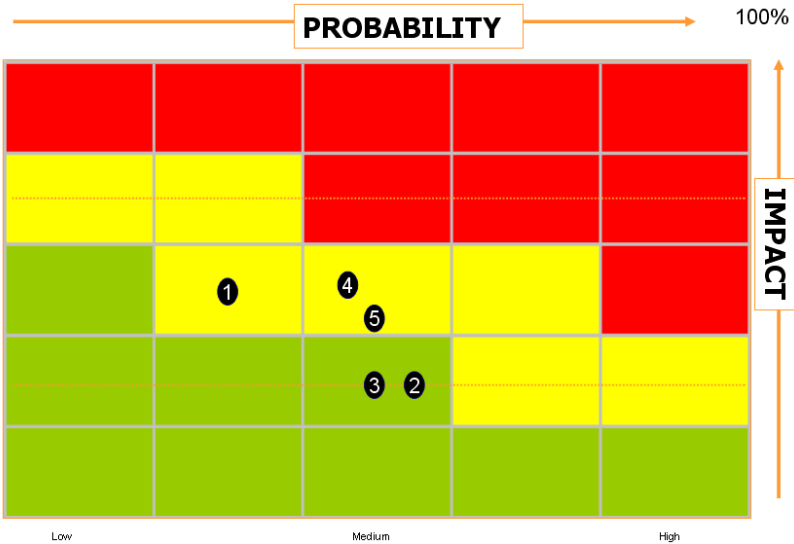
Attribute	Description		
Project Benefits	Benefit Category	(H)ard / (S)Soft Benefit	Timeline
	SSO will significantly improve access/align with corporate policy	S	Mar 2011
	Re-launch will build awareness and reinforce company's commitment to EE Development and XXX	S	Mar 2011
	New user interface will result in better user experience/ease of use	S	Mar 2011
	Enhance/Added content, especially XXX-Specific content will provide greater value to employees	S	Mar 2011 / Ongoing
	Compliance training programs in TLC will ensure tracking records for auditing requirements	S	Jan 2011 / Ongoing
	Improved reporting and tools for managing learning	S	Mar 2011
	Streamlined passwords will make it easier for anyone using offline player	S	Mar 2011
	Articulated strategy for learning admin support will eliminate confusion	S	Mar 2011
	Lifting system admin support from SME will free SME for more value added matters	S	Mar 2011

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Project Resources	The chart below represents the anticipated XXX resources.																												
	<table><tr><th>Role</th><th>Name</th><th>%</th><th>Responsibilities</th></tr><tr><td>Business Process Owner</td><td>XXX</td><td>5%</td><td><ul style="list-style-type: none">▪ Accountable for Learning & Development▪ Owns requirements within the functional area▪ Owns policy, process, and overall communication regarding operations</td></tr><tr><td>Business Process Owner</td><td>XXX</td><td>5%</td><td><ul style="list-style-type: none">▪ Accountable for Learning & Development▪ Owns requirements within the functional area▪ Owns policy, process, and overall communication regarding operations</td></tr><tr><td>Application Owner</td><td>XXX</td><td>5%</td><td><ul style="list-style-type: none">▪ Accountable for governance of the application▪ Responsible for system administration▪ Owns authorization approval process</td></tr><tr><td>System Owner</td><td>XXX</td><td>5%</td><td><ul style="list-style-type: none">▪ Accountable for support of the technical environment - globally▪ Consults business owner on application roadmap and integration into XXX landscape▪ Responsible for managing software contracts and maintenance costs▪ Responsible for technical system implementation/ integration oversight</td></tr><tr><td>Project Director</td><td>XXX</td><td>15-20%</td><td><ul style="list-style-type: none">▪ Lead Decision Maker for the Project▪ Securing spending authority, cost management and people resources for the project</td></tr><tr><td>Project Manager</td><td>XXX</td><td>100%</td><td><ul style="list-style-type: none">▪ Ensuring that the project is completed on time and within budget▪ Create / Maintains Project Plans▪ Secure acceptance and approval for deliverables from Project Sponsors / Directors▪ Manages the relationship of the project between XXX and 3rd Party vendor(s)</td></tr></table>	Role	Name	%	Responsibilities	Business Process Owner	XXX	5%	<ul style="list-style-type: none">▪ Accountable for Learning & Development▪ Owns requirements within the functional area▪ Owns policy, process, and overall communication regarding operations	Business Process Owner	XXX	5%	<ul style="list-style-type: none">▪ Accountable for Learning & Development▪ Owns requirements within the functional area▪ Owns policy, process, and overall communication regarding operations	Application Owner	XXX	5%	<ul style="list-style-type: none">▪ Accountable for governance of the application▪ Responsible for system administration▪ Owns authorization approval process	System Owner	XXX	5%	<ul style="list-style-type: none">▪ Accountable for support of the technical environment - globally▪ Consults business owner on application roadmap and integration into XXX landscape▪ Responsible for managing software contracts and maintenance costs▪ Responsible for technical system implementation/ integration oversight	Project Director	XXX	15-20%	<ul style="list-style-type: none">▪ Lead Decision Maker for the Project▪ Securing spending authority, cost management and people resources for the project	Project Manager	XXX	100%	<ul style="list-style-type: none">▪ Ensuring that the project is completed on time and within budget▪ Create / Maintains Project Plans▪ Secure acceptance and approval for deliverables from Project Sponsors / Directors▪ Manages the relationship of the project between XXX and 3rd Party vendor(s)
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Attribute	Description			
Project Resources (continued)	Role	Name	%	Responsibilities
	XXX Business Lead/SME	Mary Tung	100%	<ul style="list-style-type: none"> ▪ Design lead of the solution ▪ Liaise with key internal / external personnel to confirm business requirements are met ▪ Comprehensive understanding of the XXX Organization and LMS needs
	XXX Technical Lead	XXX	30%	<ul style="list-style-type: none"> ▪ Manage internal / external integration activities ▪ Liaise with key internal and external personnel to confirm implementation requirements are articulated and met
	XXX SSO Technical Resource(s)	XXX XXX	10%	<ul style="list-style-type: none"> ▪ Work with XXX vendor to implement SSO technology
	XXX Technical Lead	XXX	20%	<ul style="list-style-type: none"> ▪ Manage implementation of solution across approx 900 XXX stations ▪ Key decision maker in implementation solution across XXX stores
	XXX Learning Lead	XXX	25-30%	<ul style="list-style-type: none"> ▪ Participate in design decisions as they impact XXX. ▪ Test and assist with deployment of offline players ▪ Change management strategy as it impacts XXX store employees
	Content Design	XXX	25%	<ul style="list-style-type: none"> ▪ Participate in Design sessions ▪ Review requirements regarding content & documentation for accuracy ▪ Participate in the development of change management/communication/training strategy ▪ Responsible for Testing Solution
	Functional Team (Extended Team)	XXX	5-10%	<ul style="list-style-type: none"> ▪ Participate in administration requirements ▪ Participate in the development of change management/communication/training strategy ▪ Responsible for Testing Solution

Attribute	Description			
Project Resources (continued)	Role	Name	%	Responsibilities
	Change Management Team	Leads: Communications XXX Training Mary Tung	20-25%	<ul style="list-style-type: none"> ▪ Create and execute change management strategy / plan ▪ Update management on change management, communications and training strategy/plan ▪ Develop and execute Communication strategy ▪ Develop Branding/design ▪ Design front-end SharePoint Site ▪ Develop and deliver Training Strategy



Attribute	Description
Stakeholders	<p>Sr. Leadership</p> <p>Sr VP XXX Supply & Financial Controls</p> <p>SVP Human Resources</p> <p>VP and Chief Information Officer</p> <p>VP XXX Sales& Marketing</p> <p>Director HR - XXX Operations and GIS</p> <p>Sr Mgr Human Resources XXX</p> <p>HR Governance Council</p> <p>IS Leadership Team</p> <p>Mgr, Engineering Development</p> <p>Mgr, Geoscience Development</p> <p>XXX Managers</p> <p>Human Resources</p> <p>Corporate Compliance/General Council</p>
Risk Assessment	<p>The chart below represents the initial risk areas at the onset of the project. Risk will be measured by the impact of the potential risk and the probability that the risk will occur.</p> 

Attribute	Description			
Risk Assessment (continued)	Risk	Description	Risk Mitigation	Risk Score
	1. SSO problematic	This will be the first time XXX will implement SSO using SAML technology. Estimate for completion is 9-12 weeks.	IS has assigned two experienced XXX programmers to work with the vendor on their first ever SSO project. IS started work early, and added 50% to the timeline to cover delays. The IT team will monitor this work stream closely and provide timely updates to the Project Manager.	Medium/ Medium
	2. Deployment of offline players causes operational problems	Risk of conflict on the new platform. For 213 of the stores that have only one PC for both training and transactions, the deployment could corrupt other applications. Remote installation should deploy to 80% of stores; the other 20% may need to be manual. Worst case, offline player will be manually added to PC's instead of push – will increase timeline and costs. If manual install at every store it will take approximately 12 weeks.		Low/ medium

Attribute	Description			
Risk Assessment (continued)	Risk	Description	Risk Mitigation	Risk Score
	3. XXX Resources availability	This project or other high priority projects experience significant issues/delays which impact resource availability. New XXX version go live May 31, 2011, XXX V.02 new for 2011 comp cycle and XXX v6 roll out starts Jan-Feb 2011.	100% dedication from HR systems to support roll-out of plan	Low/ Medium
	4. Amount of effort underestimated	Timeline is an aggressive one and the amount of effort it will take to accomplish deliverables is underestimated impacting timing and/or quality of deliverables	We will have full plan by December 2010 and can adjust resources accordingly	Medium/ medium
	5. Change Management (XXX Stores)	XXX managers will be asked to learn 3 new systems all within 60-90 days.	Training & communication will be critical, and planned by December 2010	Medium/ medium
	<p>Note: that identifying project risk is an ongoing process and the Risk Assessment component may be revised / refined as required.</p>			

Attribute	Description
Regulatory Issues	<p>The following areas will be monitored throughout the project to assure all systems / processes are compliant.</p> <ul style="list-style-type: none"> • Data privacy issues • Reporting requirements for regulatory/government requirements (e.g., BPMIGAS)
Dependencies	<p>Indicate dependencies to other projects, resources, etc.</p> <ul style="list-style-type: none"> • XXX XXX v6 • Compliment policy manager <ul style="list-style-type: none"> • Compliance-related training and link between XXX and Compliment • Onboarding project • XXX-Like Program (Global Professional Development – GPD)

Signature Page

Approved by:

These signatures indicate that the following individuals have reviewed this document with regard to content and find it to be correct and consistent with the project business objectives.

Name	Role	Signature	Date
XXX	Business Process Owner		
XXX	Application Owner		
XXX	System Owner		