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Turnover at Lockheed Martin: a Study in How to Retain Team Members

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Comprehensive Paper Presented in Partial Fulfillment
Of the Requirements for the Degree
Master of Science in Management

by

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ACTION RESEARCH PROPOSAL

Turnover at Lockheed Martin: A Study in How to Retain Team Members.

Abstract

Frequent turnover causes the Lockheed Martin Test and Readiness Group to re-train a third of its work force every year. To better understand why employees leave, I plan to conduct an action research project to gather data on employee job satisfaction, a widely-held indicator of turnover intent. Data gathering methods will include questionnaires, interviews, and secondary data. A collaborative team will analyze the data and recommend an appropriate change intervention to ameliorate the turnover issue. By gaining a full understanding of the causes for employee turnover, the group can learn how to retain its talent to improve effectiveness and enhance its ability to achieve mission success.

Turnover at Lockheed Martin: A Study in How to Retain Team Members

In Denver, Colorado, the Lockheed Martin Test and Readiness Group loses an average of two employees per year. In a nominal group of six employees, this turnover rate equates to losing and re-training a third of the work force every year. As the team lead struggling with acquiring and retraining new individuals, I want to better understand why employees leave. To do this, I plan to conduct a research project internal to the Denver groups to gather data on employee job satisfaction, a widely-held indicator of turnover intent. This research project will entail using secondary data, questionnaires, and interviews with the previous and current Test and Readiness employees, as well as with the current employees of the two other groups in Denver. A collaborative team will analyze the data and recommend an appropriate change intervention.

Lockheed Martin Corporation

The founding fathers of Lockheed Martin, Glenn L. Martin and the Loughhead brothers, Allen and Malcolm, have been in business since 1912 and 1913, respectively. Since then, the two companies (Glenn L. Martin Company & the Alco Hydro-Aeroplane Company) have evolved through numerous acquisitions or mergers with other technology giants, such as Sperry, Radio Corporation of America (RCA), Goodyear Aerospace, General Electric, Ford Aerospace, General Dynamics, International Business Machine (IBM) Federal Systems, Loral and Unisys. The current Lockheed Martin Corporation was formed by merging Lockheed Corporation with Martin Marietta Corporation in March 1995 (Lockheed Martin Corporate website, 2004). Currently, Lockheed Martin employs 125,000 people worldwide, providing products and services for the research, design, development, manufacture and integration of advanced technology systems. Within the U.S., the company uses 939 facilities in 457 cities within 45 of the 50 states. Lockheed Martin also has business locations in 56 nations and territories worldwide. Lockheed Martin is organized into five business areas; Aeronautics, Electronic Systems, Space Systems, Information Technology Services, and Integrated Systems and Solutions, with numerous children companies within each line of business (Lockheed Martin Corporate website).

Integrated Systems and Solutions. Lockheed Martin Corporation recently re-aligned the Integrated Systems and Solutions (IS&S) line of business by combining its two children companies, Management and Data Systems and Mission Systems, into one entity. IS&S provides systems integration, systems engineering, software development and program management support for vital national systems. The company employs 12,000 individuals in Pennsylvania, Arizona, California, Colorado, and the Washington, DC metropolitan area (Lockheed Martin Press Release, 2003).

In the Denver, Colorado facility, IS&S provides Systems Integration, Test, and Evaluation services for a complex communication system. Three groups perform the functions assigned to the Denver-based program. One group tests the system to ensure it is ready to be initialized. Another group is responsible for initializing the system to a fully operational state. The third group assesses how well the operational system is running. My group, the Test and Readiness Group, plans and executes system-level tests to assess the system's readiness to be initialized.

Test and Readiness Group. The Test and Readiness Group is composed of six employees. As a test event lead, a team member is responsible for writing test planning documentation, coordinating support between event participants, conducting the event, and providing post-event final reports to document the results of the test. The group is responsible for verifying system requirements and ensuring the system is built to the appropriate specifications. Requirements verification ensures the system is built correctly. In addition to requirements verification, team members validate the system operates as intended and can be run by the operators. Validation of system operability ensures the right system was built.

High Turnover of Test and Readiness Employees

History of the problem. Over the past 4 years, I have observed the turnover of eight employees from the Test and Readiness Group. During the development of this action research proposal, another employee submitted his resignation effective within 30 days; so the turnover issue continues to plague my team. According to Weisberg and Kirschenbaum (1991), the impact

of frequent employee turnover is measured in the costs associated with the loss of the company's investment in human capital, training and recruitment. The 1999 Emerging Workforce Study estimates the cost of turnover for the typical worker is \$50,000 (Reingold & McNatt, 1999). Within the Lockheed Martin Test and Readiness Group, employee turnover costs must also include the costs associated with acquiring a security clearance for the new employee. In some instances, a new hire has to wait as long as six months for a security clearance to be fully processed.

In a nominal group of six employees, the average loss of two employees per year creates a significant drain of knowledge with the Test and Readiness Group. Since it can take a new team member anywhere from six months to a full year to truly understand the complexity of the system the team is chartered to test, new employees require nearly continuous training to become familiar with the system and the processes required to fully plan and execute a system test. Subsequently, the remaining team members devote much of their time and effort toward educating new employees.

Other negative consequences of frequent employee turnover include loss of continuity on projects and overloaded employees attempting to compensate for the loss until a replacement can be found and trained (Roseman, 1981). As a large corporation, Lockheed Martin does not move swiftly in hiring new employees. A strict procedure must be followed to hire new people. The bureaucracy of the company can delay hiring by weeks or even months. In the interim, remaining employees are forced to compensate for the loss of their team member.

Additionally, team dynamics change when existing members leave and new members join the group. For the surviving team members, this can be disruptive to their productivity as they must learn how to accommodate and communicate effectively with a new team member. Finally, employees who are leaving may share their job complaints with other team members, which may adversely affect the attitude and morale of the remaining employees (Roseman, 1981). According to Lambert, Hogan, and Barton (2001), job satisfaction has the biggest direct effect on turnover intent as dissatisfied employees are more likely to quit than their satisfied

counterparts. Once one individual leaves, the remaining employees may also question their reasons for staying and turnover may become epidemic among the employees (Roseman).

Problem statement. The Lockheed Martin Test and Readiness Group is experiencing higher turnover compared to the other Denver-based groups. Turnover within this group causes low morale in remaining employees which decreases the group's overall effectiveness. The purpose of this action research is to determine why the Lockheed Martin Test and Readiness Group is losing employees at a higher rate than the other Denver teams and to determine an appropriate intervention to ameliorate the situation. Factors influencing employee turnover, such as overall job satisfaction with tasking, work group structure, work environment, and group dynamics, will be examined to determine their effects on employee turnover within the Test and Readiness Group.

Literature Review

Numerous studies have attempted to quantify the reasons why employees leave their jobs. The underlying assumption in determining why employees leave is that once the reasons for leaving are known and understood, managers can mitigate the negative effects of employee turnover by ameliorating the reasons driving the turnover. According to Mowday, Porter, and Steers (1982), research on the reasons behind employee turnover began in the mid-1950s. These early studies found some evidence supporting a relationship between employee dissatisfaction and turnover. In 1971, Letkowitz (as cited in Mowday et al.), in a review of the literature on employee turnover, determined several influences on turnover, including the employee's initial job expectations, job satisfaction, the physical work environment, financial compensation, the intrinsic aspects of the job, and the dynamics of the work-group.

Flowers and Hughes (1973) correlated the reasons employees stayed with their companies and their personal values related to work ethics. Flowers and Hughes determined the reason employees stay is "inertia." The factors that affect employee inertia include level of job satisfaction and the degree of comfort the employee feels in the company. External factors that

may influence inertia include perceived job opportunities and other non-work factors, such as financial responsibilities, family ties, friendships, and community relationships.

In 1977, Mobley (as cited in Mowday et al., 1982) studied the intermediate linkages between job satisfaction and employee turnover. In his studies, Mobley hypothesized that dissatisfaction leads to thinking about quitting, followed by searching for a new job, which leads to actual turnover. Mobley determined the intent to leave forms the biggest determinant in actual turnover. In a later 1979 study, Mobley (as cited in Mowday et al.) further determined that several variables beyond behavioral intent can influence employee turnover. These variables include age, tenure, job satisfaction, job content, intent to stay, and organizational commitment.

Researchers continued to study the linkages between employee turnover and job satisfaction. Using the findings from 13 separate turnover studies from 1955 through 1979, Mowday and Steers created a turnover model in 1981 based on three parts (a) job expectations and job attitudes; (b) job attitudes and intent to leave; and (c) intent to leave, available alternatives, and actual turnover (Mowday et al., 1982).

Carsten and Spector (1987) analyzed previous research studies to correlate job satisfaction to turnover and unemployment rates at the time the studies were conducted. Studies were identified by three methods. The criteria used in this analysis included (a) overall job satisfaction must have been assessed, (b) job satisfaction-turnover or behavioral-intention-turnover relation must have been correlated, and finally, (c) the exact time of year of the study and the particular locale and occupation of the participants. There were a total of 47 cases with an aggregate sample size of 19,828 individuals. The results of the analysis supported the hypothesis that the relationship between job satisfaction and turnover is strong during periods of low unemployment and weak during periods of high unemployment. The results of this analysis indicate previous and future studies on employee turnover should consider the rate of unemployment at the time of the study.

Weisberg and Kirschenbaum (1991) further expanded turnover research by attempting to differentiate job satisfaction into its component parts. To do this, the researchers measured 13

items related to job satisfaction. The 13 variables were grouped into 4 factors, intrinsic, extrinsic, social rewards and hygiene factors. The results of their study indicated the intent to leave an organization is strengthened by the age, occupational level, tenure, intrinsic job motivation, and physical working conditions experienced by the employees.

Currivan (1999) examined four possible models of the causal relationship between job satisfaction and organizational commitment in employee turnover models. These four possible models included (a) satisfaction precedes commitment, (b) commitment precedes satisfaction, (c) satisfaction and commitment have a reciprocal relationship, and finally, (d) satisfaction and commitment have no significant relationship. The finding of no significant effects between satisfaction and commitment over time suggests the need for revising previous models of employee turnover, which are predicated on satisfaction and commitment as prevailing variables.

Finally, Lambert, Hogan, and Barton (2001) analyzed data from the 1977 Quality of Employment Survey, a national survey of 1,515 persons who were asked 887 questions on work and home life, including work attitudes, perceptions, intentions, and behaviors. The researchers categorized the measures in the five areas of demographics, work environment, job satisfaction, turnover intent, and alternative employment opportunities. This analysis seconded previous research findings that concluded job satisfaction has a direct and large impact on turnover intent. Study findings also indicated as tenure increased, job satisfaction decreased. Lastly, the study findings indicated work environment plays an important role in shaping worker job satisfaction.

The high turnover rates within the Lockheed Martin Test and Readiness Group may be caused by several factors, including overall job satisfaction with tasking, work group structure, work environment, and group dynamics. This action research project will investigate the underlying causes of employee turnover within the group.

Method

The Lockheed Martin employee turnover issue presents a unique opportunity for the company to initialize an organization development process through action research. Cummings and Worley (2001) define organization development (OD) as the process of applying behavioral

science knowledge and practices to help organizations achieve greater effectiveness through planned change. By methodically gathering data on the issues underlying the turnover problem, an OD consultant can accurately diagnose the issues and recommend a change intervention.

Action Research Methodology

According to Patton (1990), action research can be used to solve a specific problem within an organization. The action research becomes a part of the change process by engaging the members of the organization in the diagnosis and resolution of their problems. Cummings and Worley (2001) stated action research models focus on planned change as an iterative process, whereby initial research determines the first action. This action is then assessed and evaluated to provide additional information for further action. Action research stresses methodical data gathering and informed diagnosis prior to action planning and change implementation. For resolving the Lockheed Martin turnover issue, an action research project could be assimilated into the work environment without undue disruption to the normal routine of the employees. The methodical data gathering required for an action research project will ensure an appropriate intervention is chosen to ameliorate the turnover issue.

Action Research Model

Pearce and Robinson (1989) defined an action research model in six steps (see Table 1).

Table 1

Pearce and Robinson's Six-Step Action Research Model

Step #1	Activity
Step 1	Recognizing a problem
Step 2	Diagnosing the situation
Step 3	Identifying the problem and admitting it exists
Step 4	Selecting and "owning" a solution
Step 5	Planning and implementing the change
Step 6	Evaluating the change

Action research in this model starts with recognizing the company has a problem that needs to be corrected. By identifying an issue exists, the process of organization development can begin. For Lockheed Martin, the problem of turnover has already been identified as an issue that needs to be corrected. The second step of the Pearce and Robinson action research model includes diagnosing the situation. This action research proposal begins with the second step of this model. Once the real problem has been identified, the third step of the model comprises getting the team members and other people involved in the problem to take ownership of the problem. As Pearce and Robinson (1989) stated, real organizational development is derived from people truly owning the problem, accepting that they are part of the problem, sharing responsibility for the consequences of the problem, and actively participating in implementing the changes to correct it.

The fourth step entails getting the people involved to not only own the problem, but also to own the solution. Employee ownership helps to ensure the success of the chosen solution (Pearce & Robinson, 1989). The fifth step entails implementing the change solution chosen and owned in the previous step. Once the change has been implemented, the final step includes evaluating the change. As Cummings and Worley (2001) state, action research is iterative. Evaluation of the change comprises an objective analysis of the success or failure of the change. If a change is not successful, corrective action or a new diagnosis should be implemented (Pearce & Robinson).

OD Consultant Entry and Contracting Process

For the Lockheed Martin turnover issue, I will be acting as an internal consultant during the planning and implementation of the change intervention. Benefits of an internal consultant include ready access to the affected employees and an ability to maintain and utilize already established relationships with fellow employees (Cummings & Worley, 2001). As an employee acting as an internal consultant, I have an excellent understanding of the organization's culture and technical jargon, which will enable efficient data gathering and will ensure the cost to the company is minimized. While acting as an internal consultant, it will be important to garner

support from upper management in implementing any type of change within the Lockheed Martin Test and Readiness Group. According to Cummings and Worley, real efforts toward organization development require either a verbal or written agreement to further clarify the expectations of the change process.

Data Gathering Methods

To accomplish the data gathering effort of this action research, several data gathering methods will be used to ensure a comprehensive understanding of the issue is attained prior to implementing change. According to Nadler (1977), there are four major methods of data collection; questionnaires, interviews, observations, and secondary data or unobtrusive measures. To determine the appropriate intervention for the turnover issue at Lockheed Martin, three of the four data gathering methods will be used. Observations as a data gathering method will not be used because, as Nadler stated, this particular method requires a trained observer to avoid excessive observer bias in interpreting the observed behaviors. Additionally, observations on employee behavior may not provide any further data on the turnover issue for the Lockheed Martin team. Factors influencing job satisfaction and turnover, such as employee feelings on initial job expectations and financial compensation, are not easily observed.

Questionnaires. Initial data gathering on the turnover issue will be conducted through the use of questionnaires. As Nadler (1977) stated, questionnaires are useful to obtain information on employee perceptions and feelings toward specific organizational issues. To facilitate coding the respondent's answers, questionnaires are usually fixed-response. The most widely used scale for quantifying answers is the Likert-type item, where individuals are asked to respond to a question on a scale of varying degrees of agreement or satisfaction. As Nadler described, fixed-response questionnaires allow the respondent to do his or her own coding, that can then be easily and quickly summarized and analyzed. Unfortunately, since questionnaires have a fixed structure, they are not adaptive to the needs of the respondent. A fixed questionnaire may miss an issue since a question relative to that issue was not addressed.

For the turnover issue, I will develop one fixed-response survey questionnaire to assess overall job satisfaction of the current Test and Readiness Group members, group members from the other Denver teams, and Test and Readiness employees who have already left. According to McClelland (1994a), questions should be written in a clear and concise manner and should focus on a singular subject requiring only one response. Each question will address one factor related to job satisfaction, such as how well the job measures up to the employee's initial job expectations, aspects of the physical work environment, financial compensation, the intrinsic aspects of the job, aspects of group management, or the group dynamics of the Test and Readiness Group.

McClelland (1994a) stated a pre-test should be conducted to proofread the questionnaire for typographical errors, misleading statements, or neutral wording. This pre-test of the survey questionnaire will be accomplished by a fellow Denver employee from one of the other teams. To establish a framework for the validity and reliability of the data gathered from the questionnaire, a pilot test of the draft questionnaire will be conducted with four senior engineers of the Denver-based program to assess the questionnaire for vagueness in terminology or researcher bias.

Once the questionnaire has been proof-read by a fellow Denver employee and pilot-tested by the four senior engineers, it will be given to the existing six Test and Readiness Group members to assess their current job satisfaction and provide insight into their reasons for staying with the group. In addition to the existing team members, the survey will also be provided to six of the eight former employees to determine the reasons for their job dissatisfaction that eventually led to their departure. Since these six team members left the group to join other Lockheed Martin programs, they can still be contacted easily. The remaining two employees left Lockheed Martin and moved out of state, so these former employees do not have a current address registered with the company and, therefore, can not be easily contacted. To establish a basis for analysis with the job satisfaction levels of other Denver-based groups, the survey will

also be administered to the 20 Lockheed Martin employees in management and other lateral groups.

Prior to administering the questionnaire to the separate groups of respondents, each questionnaire will be marked with an “A” for current T&R employees, “B” for former T&R employees, or “C” for other Denver group members, to enable classifying the answers per each group. A five point scale (strongly agree, agree, neither agree nor disagree, disagree, and strongly disagree) will be used. Data analysis of the questionnaire will be accomplished by tabulating how the answers from each group of respondents (current employees, former employees, and other group members) add up and compare with each other. This method of data analysis represents a quantitative summation of the responses to a typical Likert type scale, as defined by Fink and Kosecoff (1998).

Interviews. Interviews can provide a valuable source of information as they allow an interactive question and answer session between the action researcher and the individual. According to Nadler (1977), interviews are generally formatted with a series of leading questions, followed by secondary questions designed to further elucidate the answer to the primary question. Due to the interactive nature of the interview, the questions serve more as a guideline, rather than a script. Unlike questionnaires, an interview offers the opportunity to adapt the line of questioning to the responses of the employee. An employee can explain why he or she is dissatisfied. Nadler also stated interviews can facilitate an empathic environment for the respondent, such that, the respondent is more willing to share negative information about the organization with the interviewer. Additionally, the open structure of an interview may uncover other issues related to the problem that had not been previously considered as a factor.

For the turnover issue at Lockheed Martin, the interviewing phase of data collection will occur after the initial results of the questionnaires have been tabulated and analyzed. From the areas of emphasis for measuring job satisfaction (initial job expectations, the physical work environment, financial compensation, the intrinsic aspects of the job, aspects of group management, and the group dynamics), the interview phase of data gathering will primarily

focus on the top three areas of dissatisfaction as identified in the analysis of the questionnaires to further probe employee feelings on those factors. Appendix A includes an example interview for the turnover issue at Lockheed Martin. Since the initial data gathering from the questionnaire has not yet been completed, the sample questions provided in the appendix assume the various topics of employee dissatisfaction have already been ranked. To ensure other relevant data is not excluded, the secondary focus of the interview will ensure the employees are queried at least once on the remaining factors determining job satisfaction. The interviews will not exceed one hour in duration, to ensure employee commitment and to ward against excessive fatigue in responding to interviewer questions. I will interview all of the Test and Readiness Group team members, as well as 5 employees from the 20 members of the Denver-based groups. To preserve some form of randomness in selecting the 5 employees, I will perform a systematic sampling of the 20 employees. According to Fink and Kosecoff (1998), systematic sampling entails selecting a number and then choosing names from a list relative to that chosen number. For the interviews with the rest of the Denver employees, I will use an alphabetized list of the 20 names, and starting with the third name on the list; will select every fourth name thereafter. By using this method I will ensure a systematic sampling of 5 employees from two groups.

As Nadler (1977) stated, to correlate data between interviews, the information gathered during an interview must be coded and correlated by the researcher to form an interpretation of the data. For the Lockheed Martin interviewing phase, each interview will be recorded and later transcribed to facilitate coding. According to McClelland (1994b), recording the interview can introduce concerns over confidentiality, so the intent to record must be provided prior to the interview. Additionally, the interviewer must gain agreement on being recorded from the employee. Distilling the transcribed interview into coded themes will be accomplished after all the interviews have been conducted and will be done by three separate Lockheed Martin employees, one current employee, one former employee, and one employee from another group.

Secondary data and unobtrusive measures. Nadler (1977) defined secondary data as the information collected from sources other than the respondents. Examples of secondary data include detailed reports on turnover, absenteeism, tardiness, as well as company reports and employee exit interview data. Using secondary data as the final data gathering method will provide, as Cummings and Worley (2001) stated, a relatively objective view of organizational functioning. This form of data is usually free from observer or respondent bias, and therefore, is more readily accepted as “real” data.

Since six of the employees who left the group merely transferred to another division within Lockheed Martin, these individuals did not complete an employee exit interview. For the two employees who left the company, both employees should have completed exit interviews. To further analyze the turnover issue at Lockheed Martin, those two exit interviews will be reviewed and coded by the same three employees used to analyze the transcribed interviews. Any correlations or contradictions in the data gathered during the exit interview and the more recent turnover interviews will be analyzed.

Data Reliability, Validity, and Triangulation

As Nadler (1977) stated, the best way to compensate for any deficiencies inherent to data gathering methods is to use a variety of methods to ensure a complete picture of the organizational issue is painted. By using the data gathered from questionnaires, interviews, and secondary data, it is possible to triangulate the data between the methods and ensure no biased information distorts the analysis on the turnover issue. Gill and Johnson (2002) defined triangulation as using different research methods in the same study to collect data to ensure the validity of any findings. Internal data validity is the extent to which conclusions regarding cause and effect are warranted. Previous research findings on turnover have indicated a correlation exists between job satisfaction and turnover intent. In analyzing the data gathered for the Lockheed Martin turnover issue, I would expect data validity if the gathered data corroborated previous research findings on the linkage between satisfaction and turnover.

Finally, data reliability is defined as the extent to which a measure represents the true value of a variable (Cummings & Worley, 2001). Clearly defining how the data will be consistently converted into information about a variable assures data reliability. The use of multiple data gathering methods also enhances data reliability, in that multiple measures of the same variable will be performed. Additionally, Cummings and Worley emphasized using multiple items to measure the same variable within the same data gathering method. For example, on the survey questionnaire, multiple questions on the various factors associated with job satisfaction, such as satisfaction with tasking, work group structure, work environment, and group dynamics, increases the accuracy of the measurements of a specific variable.

Collaborative Team

To further assure unbiased data analysis prior to recommending a change intervention, a collaborative team of Lockheed Martin engineers will be formed. Having multiple people review the gathered data will ensure the subsequent analysis is free from consultant bias and reflects a joint interpretation. This team will be composed of six engineers, equally divided between both management and the Test and Readiness Group, including the internal consultant. By involving members from both management and front-line workers, the resulting joint diagnosis of the problem assures a global view of the problem and subsequent change intervention. By forming a collaborative team, the change effort will have ownership from the employees involved in the change plan, as well as the requisite management approval. As Pearce and Robinson (1989) stated, ownership is critical to the success of any planned change effort.

Summary

Through methodical data gathering and subsequent analysis by the collaborative team, an appropriate intervention can be planned and implemented. By using the iterative steps of action research, the planned change will be evaluated throughout the implementation process, allowing corrective action, if needed, to further improve the results of the change action. By implementing this action research proposal, the company has an opportunity to implement an organization development process that will allow the Denver group to gain a better understanding of why Test

and Readiness employees leave more frequently than do employees from other groups.

Factors influencing employee turnover, such as job satisfaction, physical work environment, financial compensation, aspects of group management, and group dynamics will be examined to help the company learn how to better retain its talent. For an advanced technology company like Lockheed Martin, retaining its intellectual talent has become one of its toughest challenges in the current business world. Additionally, by improving employee retention, the Test and Readiness Group will improve its effectiveness and enhance its ability to achieve mission success.

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Appendix A

Introduction: Our Test and Readiness (T&R) Group loses an average of two employees per year. In a nominal group of six employees, this turnover rate equates to losing and re-training a third of our work force every year. Since we struggle to acquire and retrain new individuals, I want to better understand why employees leave the group. By gaining a full understanding of the causes for employee turnover, I hope to implement a change that will allow better retention of our intellectual talent. To do this, I am researching employee job satisfaction, a widely-held indicator of turnover intent. This research project will entail using secondary data, as well as questionnaires and individual interviews with the Test and Readiness group and the two other groups in Denver. A collaborative team of employees and management will analyze the data and recommend an appropriate change intervention.

As you may recall, an anonymous survey questionnaire was recently distributed, which all the Denver team members completed. From the initial results of that questionnaire, the Denver team members raised several concerns on their individual job satisfaction levels. During this interview, we will be focusing on the top three areas of dissatisfaction as identified in the preliminary analysis of the questionnaires. These three areas include job content, organizational commitment, and management style. A secondary focus, as time allows, will ensure you are allowed an opportunity to discuss any other factors related to your own personal job satisfaction level. The interviews will not exceed one hour in duration. Your answers will remain strictly confidential, as no identifying information will be requested during the interview.

To facilitate analyzing the results, we will need to record this interview, to allow for future transcription and detailed analysis. Again, within the transcribed data, no identifying data on the respondent will be included. My intent with this interview is to uncover the issues driving employee turnover so that we can improve the group situation and retain our talent. Your complete honesty will only facilitate this process.

Before beginning: Do you have any questions about this interview?
Do you have any objections to being recorded?
If not, please sign this authorization letter.

Topic 1 – Job content: The content of your job includes your daily tasks, your routines, processes, and procedures necessary to accomplish the program charter for the group (test and readiness). With that definition in mind, how does the content of your job meet your expectations? Is your experience with accomplishing the functions of the group congruent with your expectations? If not, please explain any differences. What would you recommend to improve the way in which the group performs its functions?

Topic 2 - Organizational commitment: Organizational commitment is defined as the organization or program's dedication to ensuring you are fulfilled as an employee. Aspects of organizational commitment include clearly defined career paths, opportunities for promotion and continuous learning, and other items that help you feel fulfilled as an employee. With that in mind, do you believe our organizational commitment is sufficient for your needs as a valued employee?

Topic 3 - Management style: Can you recall a recent negative experience relative to our leadership? Can you recall a positive experience? What would you ask leadership to do to get them to better meet your needs as a valued employee?

Final Question: If you could change anything in the group that you believe would increase your job satisfaction, what would it be and why? You can mention as many items as you want.

QUESTION 1

Evaluate the significance of gender issues in leadership. How do men and women differ in their behavior and effectiveness? What can women and organizations do to increase women's advancement, enabling more women leaders to reach the top?

Abstract

Gender plays an important role in how others perceive a leader's ability and also affects the amount of influence a leader has over subordinates. The phenomenon of the glass ceiling or glass walls can impede a female leader's ability to reach the highest levels within a corporation. The evidence for and against gender differences, and the impact of a glass ceiling are examined. Lastly, advice on being a more effective female leader and tips for career advancement are provided.

Women in Leadership: A Discussion

In 2002, women represented 48% of the workforce (U.S. Equal Employment Opportunity Commission, 2004), but only 15.7% of corporate officer positions in Fortune 500 companies (Catalyst, 2002). Furthermore, women hold only 7.9% of the highest corporate officer titles, represent 5.2% of top earners, and lead only six Fortune 500 companies (Catalyst). With nearly half of the American workforce comprising women, it only makes sense to include more representation from women at all levels within a corporation. Anything less represents a fundamental inequality between the sexes. Incorporating women at all levels may even improve a company's bottom line. In a four-year study of 353 companies in the Fortune 500, those with the most women in top leadership, defined as jobs within three positions of the CEO, had a 35.1% higher return on equity and 34% higher total shareholder return than those in the bottom quarter (Feeney & Lewis, 2004). The study found that those in the top quarter had 20.3% women in high positions, while organizations in the bottom quarter averaged only 1.9% women. Although some studies may suggest that there is no leadership difference between the genders, gender plays an important role in how others perceive a leader's ability and also affects the amount of influence a leader has over subordinates. Lastly, the phenomenon of the glass ceiling or glass walls can impede a female leader's ability to reach the highest levels within a corporation. This thesis reviews the evidence for and against gender differences, and examines the impact of a glass ceiling. Lastly, advice on being a more effective female leader and tips for career advancement are provided.

Leadership and Gender

Northouse (2004) defined leadership as the process by which an individual influences a group of other individuals to achieve a common goal. Throughout history, men have dominated the realm of leadership as kings, priests, great artists, and intellectual geniuses. Women were not recorded as prolifically in historical accounts as their male counterparts until the 1970s, where historians attempted to restore women to history (Klenke, 1996). Historical female leaders, such as Joan of Arc, Elizabeth I of England, and Harriet Tubman, defied the notion that superb leadership was best accomplished by a man. By studying the contributions of female leaders, several questions

on gender and leadership were raised. Numerous studies ensued to determine what gender differences, if any, exist between men and women with respect to leadership. For this discussion, gender is different from biological sex. Gender reflects the assumptions about the nature and character of males and females. It is also used to designate social relations between the biological sexes. As Unger and Crawford (1992, as cited in Klenke) stated, gender is what culture makes of the raw material of biological sex.

Significance of Gender in Leadership

Studies on gender and leadership have diverged significantly, with one side seeking evidence to minimize the impact of gender on leadership and another group seeking to maximize its effect (Klenke, 1996). This fundamental schism in research has produced contradictory evidence supporting widely divergent views on the role of gender in leadership.

Evidence Disproving a Gender Leadership Difference

One of the early studies seeking to prove minimal gender differences in leadership was conducted by Gregory Dobbins and Stephanie Platz in 1986. Dobbins and Platz (1986) performed a meta-analytic review of 17 previous studies examining gender differences in leadership. Their study findings indicated that male and female leaders exhibited equal amounts of initiating structure and consideration and have equally satisfied subordinates. Male leaders were rated as more effective than female leaders, but only in laboratory settings. The findings did not support that there were significant differences in leadership behavior or subordinate satisfaction based on the leader's gender. Dobbins and Platz further suggested that future studies in gender differences in leadership behavior and effectiveness were not necessary. Instead, they proposed that future studies should examine the processes through which gender stereotypes and implicit gender theories bias raters' evaluations of men and women leaders.

Billing and Alvesson (2000) questioned the notion of feminine leadership and gender labeling. They found the separation of feminine versus masculine styles of leadership to be misleading and somewhat risky in terms of gender equality and social development. By gendering leadership, researchers are propagating a gendered division of labor that encourages women and

men to continue to follow gender stereotypes, which runs against the equality ideal.

Billing and Alvesson recommended against tying masculine and feminine attributes to a person's sex, and would rather have seen these traits as part of a broader spectrum of behavior that both males and females could implement to improve their effectiveness. Rather than being stuck in a prescriptive gender orientation, an individual leader could pick and choose a specific leadership style along the continuum from directive to participative, more logical to more emotional, or from competitiveness to cooperation, based on the context of the situation at hand.

In 2002, Vecchio provided additional research that minimized the impact of gender on leadership. Through a meta-analytic review of numerous gender and leadership studies, Vecchio believed claims of comparative gender advantage, where one gender was proven to have a leadership advantage over the other, were based on stereotypic reasoning and were overstated. He believed the research supporting a gender advantage relied too heavily on assumptions that strong polarities in leadership styles existed. He concluded with the belief that a gender advantage perspective is actually a step backward in explaining social behavior in work settings, and he recommended that future studies of leadership and gender/sex in the short-term contact settings (laboratory) be curtailed in favor of studying intact, continuously performing groups in the field.

Vecchio (2003) also disputed the claim that women have a leadership advantage based on their gender and further stated that studies in gender advantage leaned toward a lack of objectivity and empirical rigor. He argued several female researchers presumed women were advantaged because their leadership style was collaborative and empowering, while men were disadvantaged because their leadership style revolved around command-and-control and the assertion of power. Vecchio believed these claims ignored the overlap of gender in terms of their behavioral repertoire and individual adaptability. His review of applicable literature indicated that any claims to a female leadership advantage were an overstatement.

As recent as 2004, researchers were continuing to prove that minimal gender differences within leadership styles existed between men and women. Powell, Butterfield, Alves, and Bartol (2004) studied 380 students to address the question of how a leader's gender, his or her leadership

style, and the gender of a leader's followers (subjects) affected the evaluation of leaders.

The results of this study did not clearly favor male or female leaders, but rather, the study findings suggested that the effects of gender in evaluations are more complex than either leadership or gender theories have previously conveyed.

Evidence Supporting Gender Leadership Difference

As a rebuttal to the studies that sought to minimize the impact of gender on leadership, Eagly and Carli (2003b) pointed out a major defect in the Dobbins and Platz (1986) review. The 1986 study included previous studies with research designs that were inappropriate to drawing conclusions about gender differences in leaders' style and effectiveness. Dobbins and Platz included seven studies (41% of their total sample size) where male and female behavior had been made artificially equivalent by either providing participants with standardized written descriptions of male and female leader behavior, or by using males or females specially trained to lead in a particular style. Contradicting these earlier study findings, Eagly and Carli presented meta-analytic evidence that women were slightly more likely than men to lead in the ways that experts considered particularly effective.

Gender differences were also seen between leadership levels, with the Eagly, Karau, and Makhijani (1995) study illustrating that men fared better than women in line management positions, while women fared better in middle management, suggesting that the skills required to fulfill managerial roles varied with the hierarchical level of the role. Eagly et al., surmised that since women were perceived to be more socially adept than men, they may be better suited to fill middle management roles, which require greater human relations skills.

Furthermore, Eagly and Carli (2003a) rejected Vecchio's 2003 argument as an oversimplification of their analysis as simply arguing for female advantage. They stated that their meta-analytic research proved that while female managers manifested a small advantage in leadership style, they faced a disadvantage from prejudicial evaluation of their competencies as leaders, especially in male-dominated leadership positions. Eagly and Carli provided evidence that women were generally perceived as possessing less leadership ability than equivalent males and that

women's leader behavior was evaluated less favorably than similar behavior enacted by men. Lastly, they asserted additional research was needed to further elucidate the relationships between gender and effective leadership.

Gender as a factor in emerging leadership. In a study of 30 female college students, Golub and Canty (1982) found that females were less likely to assume leadership when paired with males. The experimental group of females played the leadership role only 33% of the time when paired with males, as compared to 60% of the time when paired with females. The results of this study are attributed to the influence of sex-role norms. The males in Western societies were more likely to fill the leadership roles, not because they possessed more dominant personalities and chose to take the leadership role. Rather, a more insidious process prevailed, whereby both male and female participants decided jointly that the male should assume the leadership role in accordance with societal sex-role prescriptions. In essence, the presence of male peers inhibited the female test subjects from assuming the leadership role.

Eagly and Karau (1991) found that when leadership was defined in masculine terms as task-oriented, men tended to emerge as leaders more than their female counterparts. When leadership was defined in social terms, or as more feminine or relationship-oriented, men's advantage disappeared and women tended to emerge as the leaders. Male leadership was more likely in short-term groups and in groups carrying out tasks that did not require complex social interactions. For longer term groups, the tendency for males to emerge as leaders was lessened, presumably, because gender roles became less important as organizational roles were taken into account.

Gender as a factor in subordinate evaluations. In a study of 168 students, Butler and Geis (1990) hypothesized that female leaders would elicit more negative nonverbal responses from other group members than male leaders offering the same initiatives. Male and female subjects participated in 4-person discussions in which male or female confederates assumed leadership. During the discussion subjects' nonverbal responses to the confederates were coded from behind one-way mirrors. Female leaders received more negative affect responses and fewer positive responses than men offering the same suggestions and arguments. Female leaders received more

negative than positive responses, in contrast to men, who received at least as many positive as negative responses. Butler and Geis found that intellectually assertive female leaders received fewer pleased responses for their contributions and more displeased responses from fellow group members than male leaders offering similar levels of contributions. Indeed, for assertive women, it appeared that simply offering a substantive contribution was enough to elicit the displeasure of other group members. In this study, men were accorded more legitimacy credit than women for their contributions, and less resentment. The results suggested that training women to be "more assertive" (or less assertive) will not eliminate discrimination.

A meta-analysis of 221 separate portions of 61 studies yielded a slight tendency for female leaders to be devalued relative to male leaders when leadership or management was carried out in stereotypically masculine styles, particularly when this style was autocratic and non-participative (Eagly, Makhijani, & Klonsky, 1992). Study findings also indicated that female leaders were devalued more strongly than their male counterparts when the females directly or autocratically asserted their authority. Eagly et al. posited the devaluation of women was stronger when female leaders occupied male-dominated roles and when the evaluators were men. A later meta-analysis of 88 studies conducted by Eagly et al. (1995) proved that male and female leaders were rated as equally effective, although, men were rated as more effective than women in roles that were defined in more masculine terms. Men were also rated as more effective when subordinate evaluators were more male-dominated.

Gender and social influence. Gender plays a significant role in social influence as one's ability to influence others contributes greatly to one's effectiveness as a leader (Carli, 2001). Since leadership has been defined as the process by which an individual influences others to achieve a common goal (Northouse, 2004), achieving substantial social influence can enhance career development up the leadership ladder. Carli, in a meta-analytic review of 29 previous studies, determined men are generally perceived as more influential than women. Additionally, men display more resistance to female influence than their female counterparts would, which helps to maintain a power advantage over women. According to Carli (1998, as cited in Carli, 2001), direct

disagreement by a woman was more likely to evoke hostility or tension than when a man exhibited the same behavior. Carli also found the counter-intuitive revelation that self-promoting women were less influential and were rated as less likable than modest women, even though they were seen as more competent.

Gender role incongruity. Eagly and Karau (2002) theorized that the perceived incongruity between the female gender role and the more masculine-perceived leadership role led to two forms of prejudice. The first prejudice is one in which women were perceived less favorably than men as potential occupants of leadership roles, while the second prejudice led to a less favorable evaluation of the actual leadership behavior of women than men because such behavior was perceived as less desirable in women than men. In their studies, they ascertained that women leaders who conformed to their gender role produced a failure to meet the requirement of their leader role; while conversely, conforming to their leader role produced a failure to meet the requirements of their gender. Likewise, the more agentic (aggressive, ambitious, controlling, and forceful) a leader role was defined or the more completely a woman fulfilled the agentic requirements of leadership, the more likely women leaders were to elicit unfavorable evaluations because their behavior deviated from the norms of the female gender role (communal, helpful, kind, and sympathetic).

Within the same gender stereotypes of communal or agentic qualities, Heilman (2001) posited that the scarcity of women at the upper levels of organizations was a consequence of gender bias in evaluations. The prejudices associated with gender bias devalued women's performance, denied them credit for their successes, or penalized women for being competent. Heilman's research illustrated that despite producing identical work product as a man, a woman's work was often regarded as inferior. Unless the quality of the work product was incontrovertible, a woman's accomplishment was undervalued as compared to that of a man's. Heilman further stated that when women were considered to be competent at male sex-typed work, the women were more disliked than men performing the same function. Women successful at male sex-typed roles were often personally derogated, viewed as counter-communal, and disliked. Lastly, physical attractiveness in

female leaders may also heighten negative reactions, increase dislike, or cause jealousy due to perceived preferential treatment.

Leadership Style Differences between Men and Women

Gender Stereotypes in Leadership Styles

Gender stereotypes contain status beliefs, or shared cultural schemas about the status position of the group. Gender status beliefs associate greater status worthiness and competence with men than women (Ridgeway, 2001). When a female leader attempts to exert authority over others, she violates the hierarchical nature inherent to gender status beliefs. That violation causes negative reactions in the subordinates. Assertive and self-directed women in mixed-sex groups are disliked or perceived as untrustworthy, thereby achieving less influence over the group as compared to similarly acting men or less assertive women (Carli, 1990, as cited in Ridgeway). Follower resistance affects a leader's perceived effectiveness.

In 1990, Eagly and Johnson (1990) performed a meta-analysis of 162 studies on leadership styles to determine if there were gender stereotypic differences between the leadership styles of men and women. In general, Eagly and Johnson found that leadership styles were slightly gender stereotypic. The strongest evidence Eagly and Johnson gathered was the tendency for women to adopt a more democratic or participative style, while men tended to adopt a more autocratic or directive style. This finding occurred in all three kinds of studies analyzed (in the laboratory, in organizational settings, and in assessment studies). Lastly, the stereotype that men would have a greater tendency to a leadership style focusing on task accomplishment, while women would lean toward a leadership style focusing on interpersonal relationships was not proven in organizational settings, although in laboratory and self-assessment studies, some gender stereotypic tendencies were noted between these two styles of leadership. Eagly and Johnson further suggested that leaders of either sex emphasized task accomplishment when they were in a leadership role which was congruent with their gender. Their findings suggested that being out of role in gender-relevant terms may cost leaders some decline in their tendency to organize activities to accomplish relevant tasks.

Using data collected from 1984 to 2001, Robinson and Lipman-Blumen (2003) discovered that traditional gender role stereotypes no longer existed in today's business world. They saw shortsightedness in previous research that solely focused on styles of leadership between men and women as power and control versus collaboration and nurturance. Based on their broader spectrum of goal-oriented behavior, Robinson and Lipman-Blumen wanted to explore the behavioral differences between male and female leaders. Using nine behavioral styles, they found no significant gender difference in six of the styles, including collaboration and contribution. For competitiveness, the researchers found men scored higher on these two behaviors, while women scored higher in intrinsic style, or measuring one's own performance against an internal standard of excellence. This last finding countered the belief that women tended to be more interested in people than tasks. Robinson and Lipman-Blumen also found that men scored higher than women on the vicarious style, or the behavior of deriving a sense of achievement through the accomplishments of others with which one was associated. This finding also contradicted the stereotype that women, more so than men, would score higher on this passive relational scale. The researchers also found that over the three decades studied, the gap in competitiveness between men and women had decreased, but not because women had become more competitive to catch up with male managers, but rather because male leaders had become less competitive while the level of female competitiveness had remained relatively stable. The authors attributed this surprising finding to the evolving socialization of male managers that allowed them to become more flexible in leading through more feminine, relational styles.

According to the expectation states theory, Wagner and Berger (1997, as cited in Ridgeway, 2001) predicted the effects of gender status beliefs on performance will be exhibited when men were more participatory, more confident, and more influential than women in performing tasks that were stereotypically masculine, such as engineering. Conversely, when the task was stereotypically feminine, such as child care or education, women acted more assertively and were more influential than their male counterparts. In instances where the performance expectations for either sex were equal, gender differences in task-related behavior disappeared.

On the axiom of democratic leadership (allowing subordinates to participate in decision-making) to autocratic (discouraging such participation), Eagly and Carli (2003b) found that women, more so than men, tended to lead democratically and that men, more so than their female counterparts, tended to lead in a more severely task-oriented and autocratic manner.

Transformational, Transactional, and Laissez-faire Leadership Styles

Eagly and Johannesen-Schmidt (2001) investigated the leadership styles of male and female leaders with a meta-analysis of 47 previous studies on leadership style differences between men and women. They measured each participant within a scale for transformational, transactional, and laissez-faire styles of leadership. Transformational leadership is a process by which a leader engages with others to create a connection that increases the motivation and morality in both the leader and the follower (Northouse, 2004). It involves a high level of leader influence that encourages followers to achieve more than what is normally expected of them. In the Eagly and Johannesen-Schmidt study, women exceeded men on three of five transformational measures. Women performed better in demonstrating attributes that motivate respect, in exhibiting optimism and excitement about goals, and in focusing on development and mentoring followers to better attend to individual needs. By meta-analyzing 45 studies of transformational, transactional, and laissez-faire leadership styles, Eagly, Johannesen-Schmidt, and van Engen (2003) found that female leaders were more transformational than their male counterparts, which suggests the transformational style of leadership is not distinctively masculine.

Other than transformational leadership, another effective, but not as inspiring form of leadership is transactional leadership. As Kuhnert (1994, as cited in Northouse, 2004) defined, transactional leaders exchange things of value with subordinates to advance both the leader's and the follower's personal agendas. Women outscored men on one of three transactional factors, as women valued contingent reward more than their male counterparts (Eagly & Johannesen-Schmidt, 2001). A later study by Eagly et al. (2003) corroborated these findings that female leaders, more than male leaders, preferred to reward their followers for good performance. Conversely, men exceeded women on the transactional factors of active management-by-exception and passive

management-by-exception. Management-by-exception (MBE) is a style of leadership that involves corrective criticism, negative feedback, and negative reinforcement (Northouse). A leader using an active MBE style of leadership would closely monitor his or her followers for any mistakes or rule violations, and would then take correction action after an infraction. Conversely, Northouse defined a leader who preferred to use a passive MBE style of leadership as one who would only intervene after standards have not been met or problems have arisen. The findings in the Eagly and Johannesen-Schmidt study suggested that male leaders, more than their female counterparts, paid closer attention to follower's mistakes and waited until these problems became severe before attempting to intervene. Additionally, male managers were absent or otherwise uninvolved with the individuals at critical times prior to making the mistakes. Men also tended to prefer a laissez-faire style of leadership, more so than their female counterparts (Eagly & Johannesen-Schmidt). Laissez-faire leadership is truly the absence of leadership, wherein a leader foregoes all responsibility, delays decisions, provides no feedback, and makes little to no effort to help followers satisfy their needs (Northouse). Study findings from Eagly and Johannesen-Schmidt suggested that a female manager's more transformational style and greater use of contingent rewards may improve organizational effectiveness.

Eagly et al. (2003) further stated that women may favor a transformational leadership style because it provided them with a means of overcoming the dilemma of role incongruity, or the tendency for the demands of the female gender role and leader roles to be contradictory to each other. The studies on the incongruity between roles has shown that women can be disliked and regarded as untrustworthy in leadership roles, especially when they exerted authority over men, which may point to a different standard being applied to women than men for judging leadership performance adequacies. By using a transformational style, women may be able to avoid the overly masculine impression they caused by exercising hierarchical control and engaging in the more masculine behaviors associated with stereotypical leadership styles (Eagly et al.).

In studying how leader gender, leadership style, and subject gender affected the evaluation of leaders, Powell et al. (2004) found male transformational leaders were evaluated more positively

than female transformational leaders, although males were generally evaluated as being more transactional than females, where transactional leadership was viewed more negatively. Overall, female leaders were not evaluated as producing consistently better outcomes, contrary to what had been suggested by previous research evidence.

Lastly, Aldoory and Toth (2004) used a quantitative survey and qualitative focus groups to investigate preconceptions of leadership styles, gender differences in perceptions, and opinions about the gendered nature of leadership in public relations. From the survey, women rated themselves lower in terms of being a leader than men did, but in general, the survey did not reveal significant gender differences in perceptions of leadership style. Both men and women were rated as being capable of effective leadership. The focus group participants perceived women as making better leaders in public relations due to their socialization skills, like empathy and collaborative tendencies, which better align with the transformational leadership style. Furthermore, study participants, both men and women, indicated a strong preference for a transformational leadership style over a transactional leadership style.

Women's Advancement Issues

According to Carli and Eagly (2001), women lack access to power and leadership as compared to men. While the overall proportion of women managers increased from 16% in 1970 to 42% in 1992, women have not significantly gained in the top management positions, from a 3% occupancy rate for top women managers in 1979 to a 5% occupancy rate in 1991 (Powell & Butterfield, 1994). In more recent labor force estimations, women leaders only hold 7.9% of the highest corporate officer titles (Catalyst, 2002). The phenomenon that prevents women from reaching the highest levels within organizations has been labeled the "glass ceiling" (Morrison, White, & Van Velsor, 1987). Morrison et al. defined the glass ceiling as a transparent barrier that kept women from advancing above a certain level in corporations. This barrier existed for women simply because they were women and not because they lacked the talent to handle the job at higher levels. According to Carli and Eagly, the *Wall Street Journal* ("The Corporate Woman," 1986) introduced the concept of the glass ceiling as an invisible but powerful barrier that allowed women

to advance only to a certain level. In 1991, the U.S. Department of Labor defined the glass ceiling as “artificial barriers based on attitudinal or organizational bias that prevented qualified individuals from advancing upward in their organization” (as cited in Powell & Butterfield). To further study the glass ceiling, Powell and Butterfield researched the career appointments of men and women to federal government positions from January 1987 to February 1992. Their findings contradicted the belief that a glass ceiling existed for women, as gender did not play a significant role in the decision-making process for candidate selection. Four factors other than gender significantly influenced panel evaluations of candidates. These factors included previous or current employment in the hiring department, highest grade, years at highest grade, and years of full-time work. Powell and Butterfield hypothesized that the federal government’s stringent emphasis on procedural fairness ensured gender bias did not enter into the selection process.

Boatwright and Forrest (2000, as cited in Stelter, 2002) attributed the glass ceiling as the rationale for why there are more males than females in leadership positions. According to the glass ceiling theory, it is the social model of expectations and beliefs that undermine women’s attempts to attain leadership roles. The gender status beliefs that associate greater status worthiness and competence with men than women create legitimacy reactions that penalize assertive women for violating the expected gender role, which provokes negative reactions and resistance to their leadership (Ridgeway, 2001). In addition to the legitimacy reactions for assertive women, women were rated less favorably in competence when compared to men (Eagly & Mladinic, 1994, as cited in Ridgeway). The combination of legitimacy and competence issues creates an invisible web of comparative devaluation that ensnares many women on their road to top management. Ridgeway purported this was the principle cause for explaining the glass ceiling. The cumulative effect of these seemingly small impediments to women’s advancement insidiously prevented women from attaining a higher percentage of top leadership positions.

In a study of the sub-roles inherent to management, Atwater, Brett, Waldman, DiMare, and Hayden (2004) measured whether men or women engaged in gender-typing of these roles. Examples of management sub-roles include allocating resources, delegating, strategic decision-

making, planning and organizing, problem solving, disciplining, punishing, providing corrective feedback, developing and mentoring, recognizing and rewarding, motivating and inspiring, communicating and informing, and supporting subordinates. Of the 19 sub-roles examined in this study, 13 of them were definitely considered as either masculine or feminine. Respondents rated the management sub-roles of allocating resources, delegating, disciplining, strategic decision-making, problem solving and punishing as more masculine. Conversely, the sub-roles of providing corrective feedback, planning and organizing, developing and mentoring, recognizing and rewarding, motivating and inspiring, communicating and informing, and supporting were rated as more feminine. As Atwater et al. stated, women managers may be seen negatively when they needed to engage in masculine sub-roles. Research has demonstrated that several of the masculine sub-roles, like strategic decision-making and resource allocation, were more important at higher managerial levels. This may explain why women have difficulty attaining top-level management positions, as women receive negative reactions when they act assertively or engage in typically masculine roles. Additionally, women were more likely to be rated as effective when they managed consistent with the communal and participatory styles expected of women. This style of management is better suited for first-line and middle management positions (Atwater et al.).

When women manage to break through the glass ceiling, they may often find they are walled out of more senior management positions. The glass wall, as defined by Morrison, White, and Van Velsor (1987), is another barrier of tradition and stereotype that separates women from the top executive level. This glass wall prevents women from joining the ranks within the inner sanctum of senior management, or the core business leaders who wield the greatest power. Morrison et al. likened promotion to general management as entry into the “club,” where prospective members were reviewed and assessed by the current members on criteria that were not always concrete. Studies have shown that top executives tend to promote people similar to themselves into leadership positions. Because of this tendency to associate with individuals similar to oneself, gender may always be a barrier to women when top leadership positions are filled by men (Hellwig, 1985, as cited in Morrison et al.).

According to Eagly and Carli (2003b), female leaders suffered some disadvantage from prejudicial evaluations of their competence as effective leaders. The success of women and men in leadership roles depended on context. Women were rated as less effective than men in male dominated positions and were also less effective as the proportion of male subordinate evaluators increased. Also, women fared well in middle-level leadership positions, as opposed to line or supervisory positions. These study findings were consistent with the characteristics of middle management requiring interpersonal skills for communal leadership.

Some researchers have argued that barriers for women in leadership were actually driven by organizational context, rather than leadership style differences. Wajcman (1996) asserted that powerful organizational imperatives dictate management style and goals which allow for few substantial modifications in management approach. She further expounded that women's experience of management suggests that it was still men who have the power to define what constitutes management. In fact, many women survived in management positions simply by adapting and surviving by being more "male" than the men. It creates an "iron maiden" stereotype of strong women working in male-dominated organizations who do not conform to the more usual feminine roles. Wajcman further argued that women who adopt a male role in their efforts pay a heavier price over those who choose to conform in practice to their gender roles. With several barriers in the way of advancing up the organizational ladder, there are several things that women and organizations can do to lessen the effects of gender bias.

Improving Women's Advancement

The dearth of women in top leadership positions lends itself toward a theory of male superiority in leadership and a reluctance, especially on the part of men, to give women power over others in a work setting (Eagly et al., 2003). A glass ceiling can impede a woman's ascent to top leadership, despite her potential and ability for leadership. Women with good leadership skills may find it useful to understand that they are more likely to emerge as leaders with socially complex tasks, in longer term groups, in mixed-sex groups larger than two, and with tasks requiring skills more commonly possessed by women than men (Eagly & Karau, 1991).

Yoder (2001) recommended a three-prong approach for making women more effective in leadership, which included what organizations could do, what women could do for themselves, and what changes to the context of leadership were needed to make it more congenial for women.

Actions for Organizations

Within the organization, there are several steps that can be accomplished which facilitate women's effectiveness. Companies provide the resources and direction necessary to counteract any gender bias or glass ceiling issues within the organization. Yoder (2001) stated that having adequate resources, both material and supportive, can expand a women's power base by allowing them the resources necessary to reward and help others in a way that improved a woman leader's effectiveness. Organizations can also legitimize a female leader by making her followers aware of her skills and competency to lead. Yoder asserted that organizations can enhance a woman leader's ability by not only offering her training to learn the appropriate competencies, but also by making group members aware of her expertise through openly legitimating a female leader's right to lead. Other specific actions an organization should consider include creating an inclusive environment, making the hiring, recruitment, and promotion process more equitable, and creating a mentoring program.

Creating inclusive environments. For a company, one of these steps includes fostering a more inclusive environment and encouraging diversity with commitment from the company's highest levels (McRae, 2005; 2004 SHRM Research Quarterly, 2004). The Federal Glass Ceiling Commission (1995) identified that successful glass ceiling initiatives included CEO support and were part of the strategic business plan, specific to the organization. A successful initiative would also be inclusive, in that, it should not exclude white non-Hispanic men. The initiative should address pre-conceptions and stereotypes, emphasize and require accountability up and down the line, and it should track progress.

Hiring and recruitment. As Powell and Butterfield (1994) hypothesized, placing a stringent emphasis on procedural fairness in the hiring and promotion process may help to ensure gender bias

does not enter into the selection process. Job postings should be both internal and supplemented with diversified external recruiting, so that a more diversified applicant pool can be interviewed (Segal, 2005). Creating concrete, objective outcomes for work performance can alleviate the biased tendency to undervalue the accomplishments of women as compared to men (Heilman, 2001). If organizations better structured the evaluation and promotion decision process at the senior management level, it may go a long way toward leveling the playing field for women competing for these positions.

Mentoring programs. Likewise, mentoring programs can open up advancement avenues for minorities that were previously unattainable. Although because individuals usually want to mentor people who remind them of themselves, it is important the mentoring program is formalized and available to everyone (Segal, 2005). Heery (1994) defined a model of corporate mentoring which included top management involvement, provided true equal opportunity, and was in step with recruitment. Heery's mentoring model stressed career paths that reflect goals and high standards that apply to all. Participants in a mentoring program should have clearly visible expectations of the mentoring experience and should also have regular contact. Conversely, Heilman (2001) believed mentoring programs may inadvertently promote gender bias by providing onlookers with a plausible explanation for a woman's success that does not reflect her competence. If a woman achieves success, the mentor may be credited with being the "brains" behind her performance.

Actions for Individuals

Responsibility for breaking through the glass ceiling should not rest solely with organizations, as individuals can have a tremendous impact on shattering any glass ceiling barriers. Steps individuals can take include modulating one's leadership style, exceeding performance expectations, performing a gap analysis of one's skills, and finding a mentor.

Modulating leadership style. Women leaders have to overcome the barrier of inherent gender status beliefs that cause subordinates to evaluate a female as less competent than a male manager (Ridgeway, 2001). To become more effective as leaders, women can tailor their assertive behaviors with positive social styles, such as communality and relationship-building that increases

their legitimacy as leaders (Carli, 2001). By speaking in a clear, fluent, and competent manner, female leaders will convey more competence, which will enhance a female leader's social influence with her subordinates.

Eagly and Karau (2002) recommended women leaders add more communal features to their leadership behavior, which will help to reconcile their gender to their leadership role. By including some behaviors that are expressive, friendly, and participative in their leadership repertoire, women might receive more positive reactions from coworkers and evaluators. The 2004 SHRM Research Quarterly Report (2004) recommended that women seeking to attain senior positions should develop a style with which male managers feel comfortable. In developing a style that male managers feel comfortable with, women leaders may attempt to emulate male behavior, but Eagly and Karau (1991) argued that a shift in emphasis to more task-oriented behavior with less focus on socially-oriented behavior is not often feasible for women.

By camouflaging dominant speech acts, women can enact leadership dominance more effectively and can minimize the status differentials between themselves and subordinates (Yoder, 2001). In an analysis of Hegelsen's case studies (Troemel-Ploetz, 1994, as cited in Yoder), effective women leaders remained in charge by breaking down status distinctions rather than by adopting a command-and-control style that relied on having and using higher status. To further breakdown status disparities, women leaders can also adopt a group-oriented rather than self-oriented motivational intent (Ridgeway, 1982, as cited in Yoder). Group-oriented leaders show concern over group outcomes. According to Yoder, women could also bide their time to allow themselves to become fully entrenched in a group before they attempted to innovate changes.

Exceeding performance expectations. On an individual scale, women need to be exceptionally competent (Yoder, 2001). Women leaders who exhibited superior competence on a task, relative to the skills of the group, exerted more influence than less competent women or comparable males. The 2004 SHRM Research Quarterly Report (2004) also recommended that women seeking to attain senior positions should consistently exceed performance expectations and should seek out challenging and visible assignments. Melymuka (2002) further advised a female

leader should build a track record in a given functional area and establish credibility in the early years of one's career. She also recommended females learn to manage a small group first and then to increase the scope of their people management skills, the size of their team and the complexity of the tasks for which they are responsible. To further increase one's chances for success as an effective leader, Melymuka believed females should consciously explore other functions, gravitate toward the visible, difficult, and strategic tasks, and lastly, deliver above and beyond the results of other coworkers. Performance and results are paramount for success as an effective female leader.

Performing a gap analysis. To further define a woman's leadership capability, Lorenz (2003) recommended individual women perform an analysis to determine the gaps in their experience or training, to determine how they can correct them, through training or new job assignments. With these rather simple tips, an individual can make great personal strides in leveling the business playing field, and can change her mantra for the glass ceiling phenomena from "Woe is me" to "Says who?" (Melymuka, 2002, p. 36).

Finding a mentor. Lastly, the 2004 SHRM Research Quarterly Report (2004) recommended that women seeking to attain senior positions should obtain the support of an influential mentor. In a study review of nearly 30 Information Technology (IT) Leaders at 10 high-technology companies, Melymuka (2002) stated, many of the respondents indicated that finding a mentor was the key to discovering how the system works.

Changes in Context

Lastly, Yoder (2001) recommended changes in context for women in leadership to make the positions more amenable to women. One method to change the context of leadership is to ensure that more women are assigned to groups led by women. Studies have illustrated that women who operate in groups comprised of 85% or more men experienced negative consequences associated with tokenism (Kanter, 1977, as cited in Yoder), heightened visibility with associated performance pressures, social isolation, and gender role stereotyping (Yoder, 1991, and Zimmer, 1988, as cited in Yoder). It seems that when groups comprise 35-40% women, the atmosphere became distinctly

more congenial for female members. Yoder recommended gender balancing to change the context of leadership to make the situation more amenable to women leaders. One organization, the British Broadcasting Company (BBC) has made a concerted effort over the past decade or so, to pay more attention to its gender balance. In 1994, a survey of staff found that although a third of senior managers were women, women were still paid 25% less, on average, than male employees (Johnson, 2004). In response, the BBC initiated women-only training, specifically an 18-month career development program, known as the Women's Development Initiative. The BBC now boasts a roughly 50-50 gender balance, with 40% of its management being female.

Summary

Although some studies may suggest that there is no leadership difference between the genders, gender does play a significant role in social influence as one's ability to influence others contributes greatly to one's effectiveness as a leader (Carli, 2001). As Eagly and Carli (2003a) stated, female managers manifested a small advantage in leadership style, but they faced a disadvantage from prejudicial evaluation of their competencies as leaders, especially in male-dominated leadership positions. Eagly et al. (2003) found that female leaders were more transformational than their male counterparts, while study findings from Eagly and Johannesen-Schmidt (2001) suggested that a female manager's more transformational style and greater use of contingent rewards may improve organizational effectiveness.

According to Carli and Eagly (2001), women lack access to power and leadership as compared to men. The glass ceiling barrier existed for women simply because they were women and not because they lacked the talent to handle the job at higher levels. Yoder (2001) recommended a three-prong approach for making women more effective in leadership, which included what women could do for themselves, what organizations could do, and what changes to the context of leadership were needed to make it more congenial for women. Organizations should legitimize a female leader's right to lead by making her followers aware of her skills and competency to lead. To further level the playing field, organizations should also consider creating an inclusive environment, making the hiring, recruitment, and promotion process more equitable,

creating a formal mentoring program, and providing a more flexible workplace. On an individual level, women leaders should consider modulating their leadership styles, exceeding performance expectations, performing a gap analysis of their skills, and finding a mentor to improve their effectiveness as a leader. Lastly, by changing the context of leadership, the leadership position can become more congenial to females. While the evidence has shown an improvement in the standing of women as leaders, additional strides in the quest for equality of the genders can be achieved and should be pursued.

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QUESTION 2

How does inattention to project risks throughout the project lifecycle exacerbate successful project completion? What are the consequences of not implementing a formal risk management process? How do you shift an organization from no formal risk management procedures to formal ones?

Abstract

While there is a growing recognition that early, up-front identification of risks leads to a better chance of project success (Pavyer, 2004), it is estimated that less than half of existing projects actually embrace risk management (Rizzuto, 2002). Formal risk management at Lockheed Martin's field site in the United Kingdom (UK) has not been fully embraced throughout every level of the organization. By applying management emphasis on the importance of risk management, establishing an easy-to-use risk management tool, and providing risk management training for site personnel, this UK field site can transition to a formal risk management process.

Implementing a Formal Risk Management Process

Risk, as a normal condition of existence, is inherent in all activities. Projects are no exception, and frequently encounter risk. Just having the knowledge of risk offers the opportunity to avoid future problems. To make progress and leverage opportunities in project management, risk must be understood, managed, and reduced to acceptable levels. Risk management is the systematic process of identifying and responding to project risk (Project Management Institute, 2000). Ignoring project risks can adversely impact project costs, schedule, quality, and even project team morale, while the benefits of risk management include preventing surprises late in the project, thereby improving the likelihood of meeting the project's goals on time and within budget.

While there is a growing recognition that early, up-front identification of risks leads to a better chance of project success (Pavyer, 2004), it is estimated that less than half of existing projects actually embrace risk management (Rizzuto, 2002). Strategies for implementing an organizational culture change that embraces formal risk management procedures include applying management emphasis on the importance of risk management, establishing an easy-to-use risk management tool, and providing risk management training for site personnel. With these simple steps, a Lockheed Martin UK field site can successfully transition to a formal risk management process.

Risk Management

Risk

Risk is the potential harm that may arise from some present process or from some future event (Wikipedia, 2006). In professional risk assessments, the definition of risk also combines the probability of a negative event occurring with how harmful that event would be should it occur. Risk truly represents an understanding of the level of threat due to potential problems (Defense Acquisition University, 2001). Kerzner (2003) further clarified the relationship between risk and project goals by defining risk as a measure of the probability and consequence of not achieving a defined project goal. Risk can be both a quantitative and qualitative method for measuring uncertainty in achieving a project's objectives.

Another factor of risk is its cause. Certain hazards can be overcome by merely knowing about them and taking preventive action to overcome the risk (Kerzner, 2003). Good project management should be structured to identify hazards and allow safeguards to be developed to overcome them. This structure to identify hazards and devise safeguards is what comprises risk management. With sufficient safeguards in place, a risk can be reduced to an acceptable level.

Definition of Risk Management

Risk management is one of the nine knowledge areas associated with sound project management (Project Management Institute, 2000). Kerzner (2003) broadly defined risk management as the act or practice of dealing with risk, while the Project Management Institute (2000) more narrowly defined risk management as the systematic process of identifying, analyzing, and responding to project risk. Risk management is further clarified by PMI as the process by which one seeks to maximize the probability and consequence of positive events, while minimizing the probability and consequence of adverse events to project objectives. Cook (2005) described risk management as “management of the unknown,” where the uncertainty of risk is what makes risk events difficult to identify and manage. When done properly, a risk management process can reduce uncertainty, control costs, and improve decision-making ability within projects (Welcom, 2005). An early identification of project risks also improves the chances for project success in achieving its objectives. Risk management improves the ability to complete a project on time, within budget, and with maximum quality (Rizzuto, 2002). Alternatively, if a project team chooses to ignore risk, this will invariably lead to a situation where risk is managing the project (Cook). Without a formal, structured risk management process, projects will most likely experience unplanned events, which could result in unexpected expenditures, project delays, quality issues or failing to meet project or corporate objectives (Welcom).

Risk Management Process Description

Risk management includes five processes; risk management planning, risk identification, risk analysis, risk response planning, and lastly, risk monitoring and control (Project Management Institute, 2000). Each step in the process is equally important, and all five should be followed for

risk management to be a successful and robust process within project management. Risk management should be a continuous, interlocked, and iterative process throughout the lifecycle of a project.

Risk management planning. PMI (2000) defined risk management planning as the process of deciding how to approach and plan the risk management activities for a project. Kerzner (2003) further stated risk management planning establishes an organized, comprehensive, and interactive strategy for managing risks, which also enables a project manager to plan for adequate resources. Risk management planning establishes the first step in the risk management process, as it lays out the strategy for how a project team will handle risk, but this planning needs to continue to occur throughout the entire risk management process.

An important product of risk management planning is a project's Risk Management Plan (RMP), which formulates the risk road-map for how the project team will handle the risk management process. It should address the objectives and techniques that will be used in managing the project's risks, such as the reporting, documentation, communication requirements, and organizational roles and responsibilities. The RMP should also identify how risks will be assessed and rated, and should delineate procedures to consider in risk handling strategies (Kerzner, 2003).

Another important aspect of risk management planning is to provide training to project personnel. According to Kerzner (2003), the training should be performed by individuals with substantial "real world" experience in making risk management work on actual projects, so that the training is not viewed as merely an academic exercise with little to no applicability to the project team's situation. Both the training and the risk management plan should be tailored to fit the needs of the project and project team. With a well-defined risk management plan, the project team can objectively identify and appropriately assess the risks associated with the project.

Risk identification. The second step in proficiently managing risks is to identify all risks that might affect a given project and to document the characteristics of those risks (Project Management Institute, 2000). Patterson (2004) further described risk identification as the process of defining risk categories and risk acceptance levels, and identifying any risk triggers, or events that signify a risk

is about to occur. Similar to risk planning, risk identification should also be iterative and should be performed throughout the risk management process for the duration of the project lifecycle (Project Management Institute). Project risks change and evolve as the project develops. Some risks are fully mitigated, other risks never appear, and new risks develop as the project matures.

Identifying risks can be accomplished in a variety of ways, to include brainstorming by project stakeholders, interviewing subject matter experts, or performing a strengths, weaknesses, opportunities, and threats (SWOT) analysis, to name a few (Project Management Institute, 2000). Ideally, the approach for identifying risks should be methodical, which will help to ensure a disciplined and consistent evaluation of risk issues (Kerzner, 2003). In the instances where the project team decides to identify risk through a brainstorming session, some strategies to make the meeting more productive include following a structured agenda, involving senior members with experience in risk management, including project sponsors, and considering a wide range of potential risk categories to facilitate brainstorming all possible risks (Rizzuto, 2002). Cook (2005) outlined three key attributes to use when identifying project risks: (a) the event, (b) the cause, and (c) the consequence. By breaking a risk down into these three attributes during the risk identification phase, a project manager can better assess a risk and its likely impacts and consequences during the risk analysis phase.

Risk analysis. The risk analysis process entails assessing the impact and likelihood of identified risks, prioritizing their effects, and estimating their implications on project objectives (Project Management Institute, 2000). It begins with a detailed study of the identified risks to gather enough information to judge the likelihood of occurrence and associated consequences to cost, schedule, or performance if the risk occurs (Kerzner, 2003). Risk analysis also explores the options, opportunities, and alternatives associated with the risk (Defense Acquisition University, 2001). Quantitative risk analysis aims to analyze numerically the probability and consequence on project objectives, as well as the extent of overall project risk (Project Management Institute). By using techniques such as the Monte Carlo simulation, quantitative risk analysis can determine the overall

risk exposure for the project and the probability of achieving a specific project objective.

Quantitative risk analysis generally follows qualitative risk analysis.

To qualitatively analyze risk, project team members or other stakeholders calculate the probability or likelihood of occurrence, and the consequence or impact should the risk occur. An effective way to analyze risk is through the use of a risk rating matrix. Risk ratings measure probability and consequence along a continuum of high, medium, or low, which can be used to identify an appropriate risk handling strategy commensurate with the risk rating. Risks with both a high impact and a high probability are likely to require further analysis and quantification, as well as aggressive risk management to successfully ameliorate the risk (Project Management Institute, 2000). Risks with a low impact and low probability may not need any specific risk handling strategy and may just be accepted and monitored by the project team. Once a risk has been assessed within a risk rating matrix, the project team can then prioritize the entire list of project risks. This prioritization will help to determine the best use of resources to develop risk responses. Usually, those risks deemed to be the most detrimental to accomplishing project goals, will require aggressive risk response planning.

Risk response planning. The fourth step in the risk management process, risk response planning, includes developing options and determining actions to enhance opportunities and reduce threats to accomplishing the project's objectives (Project Management Institute, 2000). This process ensures that identified risks are properly addressed by assigning individuals or parties to take responsibility for each risk response. There are several ways to address risk, including avoidance, transference, mitigation, and acceptance. Risk avoidance involves changing the project plan to eliminate the risk or otherwise protect project objectives from the risk impact. Reducing scope, adding resources or time, or adopting a more familiar approach are all ways to avoid risk (Project Management Institute).

Risk transference shifts the consequence of a risk and the responsibility of a risk response to a third party. While transferring risk removes it from the project's immediate risk registry, it does not actually eliminate the risk (Project Management Institute, 2000). Rather than transferring the

risk, a more proactive risk response is risk mitigation, which seeks to reduce the probability and/or consequence of an adverse risk to an acceptable level. Early action to mitigate the probability or impact of a risk is more effective than trying to repair the consequences after the risk has actually occurred.

Lastly, the risk response of acceptance is another valid method for responding to risk. By accepting the risk, a project team decides not to change the project plan to deal with a risk or has no other options identified as a suitable response strategy (Project Management Institute, 2000). While some might argue acceptance appears to be the most passive of risk management strategies, it can represent active risk response planning. When deciding to accept a risk up front, the organization or project team must be prepared to accept the consequences of the risk when it does occur (Mullaly, 2004). Active acceptance includes developing contingency plans to execute, should the risk occur, while more passive risk acceptance leaves the project team to deal with risks when they occur without much pre-planning for a response strategy (Project Management Institute).

Risk monitoring and control. Once an appropriate risk response is selected, risk monitoring and control activities keep track of identified risks, monitor risk responses, and evaluate the effectiveness in reducing risk (Project Management Institute, 2000). Since risks change as the project develops, new risks develop, and anticipated risks never materialize, risk monitoring and control should also be an ongoing process throughout the lifecycle of the project. Sound risk monitoring and control processes provide information that allows effective decisions to be made prior to the risk's occurrence. It also enables mid-course corrections in risk response strategies, to compensate for changes in the project's risk profile.

Benefits of a Risk Management Process

A formal risk management process provides numerous benefits to the project team, including a structured mechanism to provide visibility into threats to project success (Wieggers, 1998). By considering the potential impact of each risk item, the project team can focus on controlling the most severe risks first, which will allow the best allocation of resources to risk handling and mitigation activities. A team approach to risk management allows the various project

stakeholders to collaboratively address shared risks and to assign responsibility for risk mitigation to the most appropriate individuals. Weigers further stated that without a formal approach, risk management actions may not be initiated in a timely fashion, completed as planned, nor as effective as they would be with a risk management process in place. Actively participating in a risk management process helps to avoid preventable surprises late in the project, and therefore improves the likelihood of meeting the project's goals on time and within budget.

A formalized risk management process will also benefit the entire organization. Creating risk management processes carries a relatively low cost burden, with the tools available to help an organization model its risk categories, impact types, and tolerance thresholds (Pavyer, 2004). A reliable risk management tool can help overcome the issue of subjectivity in risk scoring by providing a knowledge base of the company's previous experience in this area. Lastly, a tool can be integrated with wider corporate planning applications, so that optimum visibility levels of project risks are propagated to the appropriate levels of the organization for resource allocation and project sponsorship. Pavyer further identified the most important benefits of a risk management process as (a) the ability to make better-informed decisions on project selection and resource allocation, (b) the ability to be confident that the best steps were being taken to assure company goals, and (c) the ability to ensure the best chance of minimizing project failure and ultimately improving the company's performance.

Additional company-wide benefits of a risk management process include creating lessons learned about the risk management process. By sharing what does and does not work to control risks across multiple projects within the organization, individual project teams can avoid repeating the same mistakes (Wiegiers, 1998). Compiling the lessons learned from risk management activities across the organization is extremely beneficial in that it allows individuals to pool their experience and identify the most common risks. With common risks identified, a company can improve its risk response capability through education, process improvement, and application of improved software engineering and management techniques. Wiegiers further stated that over time, a company can implement a checklist of risk items and mitigation strategies from multiple projects that can help

future project teams more easily identify risks to their own objectives and determine effective response strategies based on previous company experience.

Consequences of Not Managing Risks

Risks may not simply impact project costs, but can also impact schedule, quality, and even team morale. With higher levels of uncertainty, the likelihood of achieving project objectives on time, within budget, and within the required performance level can be affected. Project managers may not believe that establishing and implementing a risk management process will improve the overall management of the project as it is difficult to predict the potential risks and their effects on the project (Trumper, 2006). Likewise, since risk management tends to focus on negative events, project teams generally do not like to perform a self-assessment of things that could go wrong with the project (Smith, 2004).

In many instances when a risk management process is adopted, the risk management process tends to stop after a project team identifies and analyzes the risks associated with completing the project's goals. No further efforts to plan and execute an appropriate response or monitor and control the risk are undertaken (Mullaly, 2004). Stopping at the assessment stage of the risk management process does nothing to solve potential project problems (Cook, 2005). Without actually doing something to lower either the impact or probability of a project risk, project managers are only left with a sinking feeling of what could go wrong in the project without offering any solutions.

In other instances of ineffective risk management, project teams will brainstorm the list of risks, identify impacts and probabilities, and eventually generate a high-level strategy for how to deal with the risk if it occurs, but then the risk management process ends (Mullaly, 2004). Approving a risk plan is not actually managing risk. Action must be taken, strategies must be changed, and contingency plans developed so that these are ready to go if and when the risks loom imminent on the project horizon. On the extreme end of ineffective risk management, project teams may choose to ignore risks completely, which usually leads to a situation where risk is managing the project rather than the project managing its risks (Cook, 2005). A good example of problems in

the risk identification stage can be found in the project risk management efforts at Lockheed Martin's field site in the United Kingdom (UK). Stopping at the risk identification stage is the primary shortcoming with the risk management process at this field site. Formal risk management at this particular field site has not been fully embraced throughout every level of the field site's organization. For a project to have a better chance of success, formal risk management must become an integral part of project planning and execution (Alleman, 2005). Project risk management requires more than just the intent to manage risks; it requires cultural changes, processes and their use, tools, and the consistent application of all of these.

Organizational Development to Formal Risk Management

As a corporate entity, Lockheed Martin employs 135,000 people worldwide, providing products and services for the research, design, development, manufacture and integration of advanced technology systems (Lockheed Martin, 2006). At one of its UK field sites, Lockheed Martin employs nearly 300 individuals from various children companies. One group from its Integrated Systems and Solutions (IS&S) line of business has been specifically deployed to institute formal systems engineering principles throughout the site's corporate and support organizations. Risk management needs to be formalized and propagated throughout this field site, but resistance to implementing a formal risk management process has persisted. This effort presents a unique opportunity to implement an organizational culture change through organizational development.

Kotter and Heskett (1992) defined organizational culture on two levels. The first level reflects the underlying values shared by the people in an organizational group. These shared values tend to remain the same even if the membership in the group changes. The second level of corporate culture comprises the behavior patterns of an organization that new members are encouraged to follow. Stated simply, corporate culture is "the way we do things around here in order to succeed" (Schneider, 1994, p. 9). The field site's resistance to risk management falls within both layers of corporate culture. Performing risk management has not been viewed as a useful expenditure of resources (not valued), nor has it been institutionalized as standard procedure (not a normal behavior). Risk management is not how the organization achieves success; rather, it relies on

personal heroics, reactive issue resolution after a problem has occurred, and numerous schedule delays, cost increases, or technical descope challenges to achieve “project success.” The bar that signifies project success is routinely lowered until “success” is achieved. Culture change can take years to fully implement, but the process can be facilitated by implementing organizational development through planned change.

Organizational Development

Cummings and Worley (2001) defined organization development (OD) as the process of applying behavioral science knowledge and practices to help organizations achieve greater effectiveness through planned change. The 6-step action research process defined by Pearce and Robinson (1989) provides an opportunity for the Lockheed Martin IS&S team to implement an organizational change through organizational development. Recognizing a problem, diagnosing the situation, identifying the specific problem, selecting a solution, and planning and implementing the change (Pearce & Robinson) will enable the corporate and support organizations to transition to a formalized risk management process.

Shifting the UK Field Site to Formal Risk Management

At this field site, senior level management identified inadequate systems engineering processes as a pervasive problem throughout the site’s corporate and support organizations. Risk management is just one part of sound systems engineering and successful project management. Without a robust and formalized risk management process in place, numerous projects have experienced schedule slips, cost increases, or had to be re-engineered in cases where additional money could not be found to cover cost or schedule increases. These issues were initially risks that were realized late in the project lifecycle, since no formalized risk management process had been in place to identify and mitigate the risks early on. A formalized risk management process, with appropriate communication mechanisms, could have mitigated the biggest risks early in the project lifecycle, thereby ameliorating the worst of the cost impacts, schedule delays, or quality issues. In addition to quality, cost, and schedule impacts for each individual project, overall employee morale and employee retention at this field site have been impacted.

Currently, only the initial steps of a risk management process are implemented within the support organization at the UK field site. Individual project managers are tasked to identify the single top risk within their projects. These top risks (1 per project) are then quantified on a 5-point risk rating scale, from 1 (Low) to 5 (High). The respective values (1-5) for probability and consequence are then multiplied ($P \times C$) against each other to create the overall risk rating score for each identified risk. Notional risk mitigation strategies are developed, but it is at this stage that the risk management process at the UK field site begins to break down. In many instances, the risk handling strategy is not implemented until after the risk occurs and has become an issue. In other instances, another risk other than the primary one identified occurs, which negatively impacts the requirements, cost or schedule of the project. In this case, identifying only the top risk for each project still leaves the project vulnerable to the other unidentified, and therefore unplanned for, risks.

Overall, the current risk management process at this field site is performed without a comprehensive risk analysis and with minimal consideration for lowering risk to improve cost, schedule and technical performance. Risk mitigation steps are not actively pursued. Risk management seems to be a one-time occurrence upon project approval that is soon forgotten until the risk materializes. There could be several factors compounding the site's inability to adopt a formal, repeatable risk management process, to include insufficient management emphasis and support for risk management, insufficient education on how to effectively manage risks, and a lack of appropriate risk management tools. To minimize project failure and improve the site's performance, the corporate and support organizations need to adopt a formal, repeatable risk management process, using an appropriate risk management tool. Management should emphasize risk management's criticality to project success and provide the resources necessary to institute risk management process training.

Management emphasis. At the UK field site, management has emphasized the need for sound systems engineering, but the senior leaders have not truly endorsed risk management as a required daily task, nor have they provided the resources (tools and personnel) necessary to

adequately manage risk. As Conrow (2005) stated, both top-down (program manager-lead) and bottom-up (worker-level daily performance) are necessary to provide a suitable environment for effective risk management. Without adequate senior-level endorsement of and support for a formalized risk management process, the institutionalization of such a process can not occur. This lack of real endorsement is the single, greatest cause of the current haphazard risk management process in place at this UK field site. Without proper tools and trained personnel, risk management becomes a poster child for management “not walking the talk” of sound systems engineering.

Conrow (2005) further asserted that it is all too common for upper management to be disinterested in risk management or to send mixed signals to lower level personnel in the rank-and-file positions. Without working-level personnel assimilating risk management principles into their daily job function, it will be difficult at best to have successful risk management. Creating the proper culture on a program to inculcate risk management is more difficult, and thereby, more important than learning to master the tools and techniques for the process (Conrow). Learning how to follow a risk management process should not be overlooked as an important part of shifting an organization to a formal risk management process.

Risk management education. Another important aspect of successfully implementing a formal risk management process is to provide training to project personnel (Kerzner, 2003). Managing project risk is not an innate talent with which individual project managers are born. It is a learned behavior and a skill that gets easier with training and experience. Training will familiarize project managers with both the risk management process and the risk management tool. It inculcates risk management as a part of the normal project planning and control processes. Training in the risk management process should be performed by individuals with substantial “real world” experience in making risk management work on actual projects, so that the applicability of risk management can be demonstrated (Kerzner).

Educating project team members on risk management also can shift individuals from solely looking for negative events to leveraging positive events into opportunities within project

management (Alleman, 2005). Having individuals fully trained on project risk management can help to avoid the dangers of a blame culture and even liberate an organization's creative resources (Pavyer, 2004). Ensuring that team members genuinely understand the downstream benefits of risk management is critical to getting active participation in identifying risks and working mitigation steps (Patterson, 2004). With sufficient education and training, identifying and handling risk becomes a part of everyone's daily routine.

Risk management tools. Risk management tools can facilitate more effective and facile risk management within an organization's project teams. As Levine (2006) stated, the risk management process needs to be supported by easy-to-use tools that facilitate the identification of risk events, the determination of probability and impact of those risk events, the mitigation efforts needed to lessen those impacts/probabilities, as well as enhancing the communication of risk issues to all project stakeholders. Web-enabled enterprise risk management tools promote a level of collaboration among stakeholders that is needed to properly highlight and mitigate project risks (Cook, 2005). They also provide the visibility and management assistance needed for project managers to manage and reduce risks effectively. Moreover, integration of risk management tools with an organization's scheduling and cost management tools allows risks to be mapped to any level of the schedule hierarchy and cost data. By correlating risks to both schedule and cost, Cook further asserted that projects can benefit from combining qualitative analysis with quantitative risk management. With proper risk management tools, project managers are empowered to establish sophisticated risk management strategies that contribute to overall corporate success.

Smith (2004) emphasized the importance for implementing a risk management tool that allows flexibility to look at multiple impact types: (a) cost, (b) schedule, (c) technical, and (d) morale. Furthermore, a tool should provide the framework against which people can structure their work in managing risks. A tool should not mandate new procedures, nor should it require people to work in dramatically new ways. By doing so, the implementation of a new tool and the risk management process itself would be doomed to failure.

Lastly, while an electronic risk database is not mandatory for successfully implementing a formal risk strategy, it certainly eases the transition to proactive risk management. Managers can get immediate insight into how their projects stand in regard to risk (Williams, Walker, & Dorofee, 1997). Questions such as, “How many critical risks remain against a project?” can be easily answered with risk information that is accessible and easy to understand and retrieve. At the UK field site, individual project managers rely on paper documentation for risks, as each top risk is captured as a Microsoft® Powerpoint slide. Not only is this difficult to communicate as access to the information is limited, but the information soon becomes dated as it is not routinely updated. Implementing a reliable, facile risk management database would help to establish and institutionalize risk management as a necessary step in project planning and execution.

Other Strategies for Adopting Formal Risk Management

To make risk management explicit, the tasks for managing risk must be embedded in the project’s schedule, assigned resources, and tracked in routine status reviews (Alleman, 2005). The results of risk mitigation activities should be clearly visible and defined through qualitative assessment criteria. When team members see positive results proving the risk plan works, risk management starts to become an integral part of project planning and control. Senior management needs to emphasize the positive aspects of managing risks, so that team members see the connection between managing risk, improving results, and achieving better chances at success.

Summary

Risk, as a normal condition of existence, is inherent in all activities. Even though early, up-front identification of risks can lead to a better chance of project success (Pavyer, 2004), less than half of existing projects actually embrace risk management (Rizzuto, 2002). Formalized risk management truly is an essential control tool for sound project management and a vital instrument for better decision making. When done correctly, with sufficient and accurate information, formal risk management can provide a very useful means of reducing uncertainty within a project, which ultimately improves the chances of project success (Patterson, 2004).

Risk can pop up anywhere, thus it is impracticable to develop contingency plans for every possible risk. Developing and implementing a structured, repeatable risk management process provides the necessary framework for identifying and analyzing risk (Levine, 2006). By applying management emphasis on the importance of risk management, establishing an easy-to-use risk management tool, and providing risk management training for site personnel, the transition to a formal risk management process can be accomplished. Success in fully embracing a formal risk management process will be achieved when risk is no longer treated as a four-letter word, but rather, it is used as a rallying point to stimulate creative efforts (Williams et al., 1997).

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