ENHANCING PROJECT MANAGEMENT WITH KNOWLEDGE MANAGEMENT PRINCIPLES

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ABSTRACT

In many organizations, projects are unique endeavors that require special functions. Project managers, who are filling the void of middle management, often do not possess the advantages of a learning curve in performing individual project analyses. This is where project managers have the potential to benefit greatly from well-defined knowledge management (KM) practices. KM is the concept of combining the expertise, wisdom and insights of those individuals who have come to their wisdom the hard way. This research proposal addresses the issues that have been barriers to the integration of KM practices for project mangers. In particular, it discusses both explicit and tacit benefits of KM for project managers as well as motivating factors for its adoption.

INTRODUCTION

Today, almost every organization gets involved in many projects, leading several business executives and experts to declare that "Project management is the wave of the future." Stewart (1996) proclaims that the corporate jungle has a new species, the *project manager*, who will fill the void created by the extinction of middle management. More and more firms are realizing that managing projects can be a vital part of everyone's job.

The concept of knowledge management (KM) has been around for decades, but most organizations accept it only as theory and have not put it into practice. It has been difficult for many firms to evolve their organizational thinking from an information focus to a knowledge focus. Throughout the past several decades, information systems practices were sufficiently developed to accomplish efficient production of information. Problems arose when information was in abundance, but key individuals possessing that information did not or would not share it with others who stand to benefit from its discovery.

This research focuses on the partnership of project management practices and KM principles. Together, their contributions can bring project management to a new frontier for application.

PROJECT MANAGEMENT

Project management has long been associated with operations management, and is an important topic in the Operations Management curriculum. By definition, a project is a complex, non-routine, one-time effort limited by time, budget, resources, and performance specifications designed to meet customer needs (Gray & Larson, 2003).

In many organizations projects are unique endeavors that require special functions where the advantages of a learning curve are not available. Thus, organizations often seek project managers with experience as a replacement for their shortcomings. The term "experienced project manager" does not necessarily imply that a project manager has the exact skills required to do the task at hand, but

generally means that he/she has completed similar tasks which he/she can draw upon to complete the task at hand.

KNOWLEDGE MANAGEMENT (KM)

Dunn and Neumeister (2002) define KM as a systematic approach to managing and leveraging an organization's knowledge assets, which may include knowledge of the organization's customers, products, market, processes, finances and personal services. The Gartner Group, an international technology consulting group, defines and offers KM as a discipline that encourages a mutually supported method to create, capture, organize, and use information (Duffy, 2000).

Koskinen (2004) categorizes KM into two components to support project management communication and implementation. First, *explicit knowledge* is knowledge that can be embodied in a code or a language, and, as consequence, it can be communicated easily. The code may be words, numbers, or symbols like grammatical statements, mathematical expressions, specifications, manuals, and so forth. In addition, *tacit knowledge* presents knowledge based on the experience of individuals. It expresses itself in human actions in the form of evaluations, attitudes, points of view, commitments, motivation, etc. Polanyi (1966) summarizes the essence of tacit knowledge in the phrase, "We know more than we can tell." To distinguish between the two, explicit knowledge is about *why* things work, and tacit knowledge is about *what* things work.

ISSUES IN PROJECT MANAGEMENT

In general, any project can be assessed in three dimensions: time, cost and quality. Olson (2004) argues that most projects will meet any two of the dimensions, but very few meet all three. Issues identified for missing one of the dimensions include:

1. Non-Reporting of unplanned events.
2. Change orders.
3. Late completion of tasks.
4. Poor quality.
5. Lack of project tracking skills.
6. General project variances.

CURRENT METHODS TO MANAGE THE ISSUES

Below are three of the most currently recognized methods for mitigating many of the issues in the midst of a project. Positive and negative arguments of each are addressed.

Critical Chain Buffers

Goldratt (1997) offers critical chain project management (CCPM) to mitigate issues, where a project's focus is not only on critical activities, but on activities that might become critical. He suggests eliminating dues dates, which themselves become reasons for delay. His primary means of insuring that critical activities are completed on time is to use buffers, which are added time in the schedule to protect against unanticipated delays, and to allow for the early start of tasks. It is not slack time, but blocks of time that are not expected to be used as work time. These blocks of time are dedicated to covering highly probable contingencies, and are closely watched so that if they are not needed, subsequent activities can proceed at the earliest time possible.

Many dismiss this method, arguing that experienced project managers have known the principles behind CCPM for a long time, and its uniqueness is in its terminology rather than in its substance. Raz et. al. (2003) begin their argument by accepting the CCPM assumption that all task

owners overestimate task duration by a certain safety factor, and that the time duration of the actual execution of each task will expand to fill the time allotted. Raz et. al. (2003) also argues that if a method exists for portioning tasks into completion times and safety factor times, then it should have been used in the first place.

Risk Management

Every project manager understands risks are inherent in projects. Gray and Larson (2003) define *risk* in the context of projects as *the chance that an undesirable event will occur along with all of its possible consequences*. Risk management attempts to recognize, manage and possibly remedy potential and unforeseen trouble spots that may occur when a project is implemented. Risk management, as part of the project planning process, attempts to identify as many risk events as possible (what can go wrong), minimize their impact (what can be done about the event before the project begins), manage responses to those events that do materialize (containment plans), provide remedies for the event or events (previously determined solutions), and provide contingency funds to cover risk events that actually materialize.

Disappointingly, risk management is not generally performed well in most organizations. Unplanned events are more often than not missing from the risk management portfolio. In addition, informal interviews with project managers indicate that risk management is performed more as a reactive measure than a proactive one.

Project Assessment and Evaluation

The general accepted method of project assessment and evaluation is the Earned Value (EV) system (Gray & Larson, 2003). The usefulness of the EV system depends on data from the work breakdown structure (resources, time and cost estimates, and a time phased budget for each task) and new estimates of percent complete work that are realistic and as accurate as possible.

Similar to risk management, project assessment and evaluation are not generally performed well by most organizations, and are considered one of the most neglected areas of project management. It holds people accountable and allows for traceability. Thus, it has negative connotations for many and is frequently resisted.

In several cases, modifying a project's scope creates change orders that produce significant status report variances. Such occurrences are often subject to creative baseline revisions leaving many to question the results of this self-assessment technique.

APPLYING KM TO THE ISSUES

The most profound aspect of KM is that, ultimately, an organization's only sustainable competitive advantage lies in what its employees know and how they apply that knowledge to business problems. The addition of KM repositories to project management enhances an organization's ability to:

1. Think in broad terms.
2. Capture issues for study/observation.
3. Take independent remedies and address issues in an interdependent fashion.
4. Catch issues that have traditionally "slipped through the cracks."

KM BENEFITS

KM is a practice that makes sense for improving project management. It is the concept of combining the expertise, wisdom and insights of those individuals who have come to their wisdom the

hard way. If the wisdom could be captured and shared within the project management community, it would make sense that organizations would benefit infinitely. Such benefits occur in both explicit and tacit forms.

Explicit KM Benefits

1. Past data on completed projects, milestones, and work packages are obtained.
2. Interdependencies among tasks due to shared resources are addressed.
3. Identification of real risks and the methods used to alleviate them are known.

Tacit KM Benefits

1. Can conduct interviews to determine what processes/methods were successful.
2. Interviews to determine what actions didn't work can also be conducted.
3. Allows for quicker movement down a task's learning curve.

BARRIERS TO KM

Having explored the nature of KM as an important tool for organizations, our research must also address barriers that inhibit its effectiveness. The question is: "How can project managers be motivated to share the knowledge gained from their experiences?" The typical culture shared by many project managers is not one that rewards the sharing of ideas and wisdom. Promotion and job security are functions of a project manager's ability to generate original ideas, and apply them in unique ways. In such a case, knowledge can be thought of as a belief that is justified and then internalized. Therefore, it can be lost, shared, or hoarded. A simple remedy might be to provide financial motivation for documenting projects at completion.

CONCLUDING REMARKS

Peter Novins (2002), a vice president at Cap Gemini Ernst & Young, summarized the characteristics of KM in an e-Business presentation. His remarks were that good KM should have three characteristics. First, it needs to address a real business problem that everybody agrees is a problem. Second, an organization cannot sustain a KM system without some kind of community interest or practice that provides content and accepts responsibility for continuing to build and share the content. Third, KM systems have to make it very, very easy for people to get the content they need.

In the current complex business environment, projects are viewed as critical building blocks for organizational success. As projects are continuously combined with new information, we conclude that it is necessary to continue to make contributions to research in project management in cooperation with research in KM.

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