

# Chapter IX

## A Systematic Implementation of Project Management

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### ABSTRACT

*In contrast to ongoing, functional work, a project is a temporary endeavor undertaken to achieve or create a unique product or service(s). The project management knowledge and practices are best described as component processes—initiating, planning, executing, controlling, and closing. We have taken a closer look at project management by reviewing the types of methodologies and tools that exist in business today. We observed the major existing risk factors facing project management practices. We also evaluated the unique issues in delivering projects brought about by globalization. As we were extracting the information, it became apparent that there should be measures taken related to the project management process that could alleviate the some major risk factors in some way.*

### INTRODUCTION

A comprehensive management of employee, resources, analytics, customer relationship management (CRM), supply chain, and project management is of paramount importance for modern corporations. Businesses can plan, track, and analyze time and labor through applications for scheduling, time and attendance, leave, and labor. While companies can focus on a number of areas in their efforts to be-

come high performance organizations, this chapter discusses the role that effective project management practices play in this process.

Project management is the discipline of defining and achieving targets while optimizing (or just allocating) the use of resources—time, money, people, materials, energy, space, and so forth, over the course of a project (a set of activities of finite duration). In contrast to ongoing, functional work, a project is a temporary endeavor undertaken to

achieve or create a unique product or service(s). The project management knowledge and practices are best described as component processes—initiating, planning, executing, controlling, and closing (Westland, 2006; Jin, Koskela, & King, 2007).

We have taken a closer look at project management by reviewing the types of methodologies and tools that exist in business today. We observed the major existing risk factors facing project management practices. We also evaluated the unique issues in delivering projects brought about by globalization. As we were extracting the information, it became apparent that there should be measures taken related to the project management process that could alleviate the some major risk factors in some way. Our chapter illustrates a solution idea for the project management process, which may close the issue gap with regard to many globalization issues and other identified risks. The idea is to include a sub-process for project management as it applies to the project life cycle, that would benefit an organization internally for a parent organization, and also externally for their client's benefit.

## **BACKGROUND**

There are various methods of project management, which differ, based on the scope and the complexity of the project undertaken. The Gantt chart is a well known standard in project management. Henry Gantt (1861-1919) studied in great detail the order of operations in work. His studies of management focused on Navy ship construction during WWI (Mintzer, 2002). His charts, complete with tasks bars and milestone markers, outlined the sequence and duration of all tasks in a process. These chart diagrams proved to be a very powerful analytical tool for managers, that they remained virtually unchanged for nearly 100 years. The chart plots a number of tasks across a horizontal time scale. It is easy to understand and it allows all team members to maintain the status of their tasks against the projected progress.

Many new techniques have been developed, which emerged from two major network systems, the program evaluation and review technique (PERT) and critical path method (CPM) (Punmia & Khandelwal, 2005). PERT is the method of project scheduling and coordination based on an integrated logic network, first developed by the U.S. Navy in 1958 to plan and control the Polaris missile project (Burgher, 1964). PERT allows for randomness in activity completion times. PERT has the potential of reducing total project lead time as well as reducing the cost of the project. CPM was developed at about the same time, by Remington Rand and DuPont and is very similar differing only in the way in which they arrive at time estimates (Dalcher, 2004; Lechler & Ronen, 2005). In the history of management methods, it would be difficult to find any other techniques which have received as much widespread attention as that of these network methods for planning, scheduling, and controlling. These methods are still very widely used today to achieve the earliest possible completion time at the least possible cost.

CPM is a planning tool developed for more complex projects, as is PERT. CPM provides a graphical view of a project (Lechler & Ronen, 2005). CPM estimates the amount of time required to complete the project and shows which activities are critical to keeping to the projects schedule and which are not. CPM models the activities and events of a project as a network. The larger CPM network may be considered a series of linked conditional statements. Activities are depicted as nodes on the network and events that signify the beginning or ending of activities are depicted as arcs or lines between the nodes. The CPM model is able to discern which activities are dependent on each other. Determining the critical path is at the heart of the CPM model. The critical path is the longest duration through the project's full network. A delay in the critical path results in a delay in the project's total completion time. Opportunities may be to "crash" or accelerate a project's completion time by reducing the allotted time for one or more activities of

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