Chapter 4.14
Project Management in Student Information Technology Projects

Maria Delia Rojas
Murdoch University, Australia

Tanya McGill
Murdoch University, Australia

Arnold Depickere
Murdoch University, Australia

ABSTRACT

Universities teach project management to information technology (IT) students. The project management principles that students previously have learned often are put into practice in a project course that is intended to give final-year students the experience of applying their knowledge to real or simulated projects. This article reports on research that investigated the use and usefulness of project management in student IT projects. The results show that there was a wide range in the application of project management practices, with students being more likely to produce the initial documentation associated with some of the project management knowledge areas than to make use of it throughout the project to monitor the project's progress. The results also showed that the number of project management guidelines applied in student projects was not linked to IT project success. However, there was a strong relationship between project management plan quality and obtaining a good software product.

INTRODUCTION

Universities all over the world teach project management to information technology (IT) students (Goold, 2003; Grundy, 1997; Stein, 2002). The project management principles and system development methodologies that students previously have learned often are put into practice in an IT project course that is intended to give final-year IT students the experience of applying theoretical concepts and practical techniques to real or simulated student projects (Grundy, 1997). The

research reported on in this article investigated the use and usefulness of project management in student IT projects.

Student projects usually are defined and scoped to run on a one- or two-semester basis within an academic program and are not as complex as industry projects (Jih, 2003). Within the time limitation placed on these projects, students have to plan, design, and implement their systems and create relevant documentation. While student projects are not comparable in size and complexity to industry projects, the rigor expected is the same as for industry projects. Past experience reveals that IT students find it difficult to manage their project for reasons such as lack of understanding of project management tools and techniques (Lowe, 2000; Pournaghshband, 1990).

The Project Management Institute's (PMI) 'Project Management Body of Knowledge' (PMBOK) provides a solid base of standards, procedures, and practices for managing all types of projects and is used by many organizations to apply project management principles to projects (Freedman, 2002). The goal of project management guidelines is for project managers to achieve better outcomes in projects. IT students also can make use of project management guidelines in order to try to achieve the same goal.

Project Management and the PMBOK Guide

Project management is "the application of knowledge, skills, tools, and techniques to project activities to meet project requirements" (Project Management Institute, 2000, p. 6). The PMBOK Guide is a handbook that provides broadly accepted knowledge and practices that are generally applicable to most projects. There has been widespread consensus as to the value and usefulness of these guidelines (Schwalbe, 2004). The PMBOK Guide consists of five project management process groups and also is divided into nine key sections called the project management knowledge areas. These knowledge areas are divided further into their component project management processes, which describe the activities that need to be fulfilled for each knowledge area. In addition, each of the nine knowledge areas has specific project management tools and techniques that help to carry out the activities in each process. The project methodologies and practices presented in the PMBOK Guide are used to control and manage projects and cover every aspect of project development.

The Role of Project Management in IT Projects

Generally, project management is considered important for three reasons. First, project management can clarify a project's goals because it makes the project manager produce documentation that identifies the project's unique characteristics, which have to be addressed throughout the project. Second, project management will enable a project manager to identify the required resources, thus assuring the project's stakeholders that resources are being managed effectively. Finally, project management can help to succeed in the achievement of both project and organizational goals.

There has been some research into the value of project management in IT projects. An early study by Pinto and Slevin (1988) tested the importance of factors that are believed to be critical to project success. Each of the critical factors was tested independently against project success, and the results showed that having a project schedule and plans was significantly related to project success. They concluded that project managers need to create project schedules and plans and to use them on a regular basis.

More recently, the Standish Group's (2001) CHAOS project investigated the scope of software project failures and the major factors that cause software projects to fail. The results showed that project success rates have increased since 1994, which partially is attributable to better project