IS Project Management Contemporary Research Challenges

Maggie McPherson
University of Sheffield, UK

INTRODUCTION

Although project management is often said to have its roots in other traditional fields, such as construction, Morris (2002) asserts that modern project management practices have their origins in the 1950s US aerospace agencies. Much has been written about Information System (IS) / Information Technology (IT) project initiatives in both the public and private sectors. In fact, many information systems frequently fall short of their requirements, and are, more often than not, costlier and arrive later than anticipated, if indeed they are completed at all. For instance, according to a report for the Organization for Economic Co-operation and Development (2001), failures of major IT investments and key systems development projects have raised concerns for the achievement of service improvement through information technology. Additionally, it has been argued that failures in IT projects are more common than failures in any other aspect of modern business (Nulden, 1996). The widely-cited Standish Group (1994) study, carried out in the US, classified IT projects as follows:

- **Resolution Type 1 (Project Success)**: The project is completed on-time and on-budget, with all features and functions as initially specified.
- **Resolution Type 2 (Project Challenged)**: The project is completed and operational but over-budget, over the time estimate, and offers fewer features and functions than originally specified.
- **Resolution Type 3 (Project Impaired)**: The project is cancelled at some point during the development cycle.

The report estimated the success rate was only 16.2%, while challenged projects accounted for 52.7%, and impaired projects (cancelled) amounted to 31.1%. Since large complex projects in any area are difficult to organize, it could be said that the level of abstraction required often leads to a lack of understanding between all stakeholders involved with the project. Callahan and Moretton (2001) describe software design as being "in the code". They assert that since it is not visible, it makes it hard to use software design as a focal point for development project coordination and integration, unlike many physical designs which can be made visible to all project participants. As a result of this "invisibility", managing the development of an IS project is arguably more problematic than project management within the manufacturing sector because software development is often a highly conceptual and complex process.

Indeed, a lack of adequate project management knowledge could be said to be a major contributing factor to unsuccessful IS projects. For instance, as project managers should be aware, unless specific objectives and clear-cut end points have been set, it can be difficult to know if a milestone has been reached and indeed if the required end-product has been produced. However, making use of proprietary tools such as Microsoft™ Project is sometimes mistakenly thought of as project management, whereas real project management expertise goes beyond the mere production of Gantt or Pert (Program Evaluation Review Technique) charts, which simply represent project activities in the form of bar charts or flow diagrams. As Mandl-Striegnitz et al. (1998) point out, important project management techniques include estimation of costs and explicit identification of risks. Clearly, there is a need for more in-depth research to gain a better understanding relating to the complex role of project management within the whole IS design and development process. This discussion considers how these problems affect contemporary IS project management research and explores the methodological approaches open to researchers carrying out investigations in this area.

BACKGROUND

In order to better understand the challenges facing researchers of Information Systems Project Management (ISPM), it is necessary to explore what is meant by some of these terms. As stated by the American National Standard for Telecommunications (2000), an IS is "an organized assembly of resources and procedures united and regulated by interaction or interdependence to accomplish a set of specific functions, whether automated or manual, that comprises people, machines, and/or methods organized to collect, process, transmit, and disseminate data that represent user information". In its simplest terms, an IS can be described as a human activity or social system, which may or may not involve the use of computer

systems; although, these days the former is more likely. According to Stoner et al. (1994), management can be regarded as a process of planning, organizing, leading and controlling the efforts of staff and other resources in order to achieve organizational goals, and the Association for Project Management (2000) describes a project as a distinct set of coordinated activities "… with definite starting and finishing points, undertaken by an individual or organization to meet specific objectives within defined time, cost and performance parameters". By combining these terms, a definition for ISPM could be said to be the process of managing the creation of an IS through the establishment of project goals; organizing, leading, co-coordinating the efforts of staff processes and tasks; and controlling other resources to achieve a set of agreed objectives.

Since IS projects are frequently comprised of multi-disciplinary teams of people, a definition of what is meant by a team in this particular context is called for. Geddes et al. (1993), regard a team as comprising those individuals who have a significant contribution to make to the successful achievement of the project, whether this is through technical or specialist expertise; sponsorship, political support or sponsorship; or expectation of, and interest in, outcomes. Programmers and associated staff are often selected according to their ability to demonstrate the appropriate technical knowledge, which does not guarantee proficiency in managing successful projects. Despite the emphasis on team leadership ability, senior developers/project managers are often promoted from the programming team, with a continued emphasis on technical expertise (Mandl-Striegnitz et al., 1998).

In reality, IS project managers must not only be able to plan and break activities down into components that can be understood and to control tasks and monitor risks, but must additionally be able to consider people and process issues requiring significant team-building skills. Although IS may be implemented by staff with technical competence, they may well lack the necessary abilities to evaluate organizational contexts and analyze corresponding behaviors.

Nevertheless, since 1994 there has been an improvement in project management outcomes. By 2001, the Standish Group published another report stating that project time and cost overruns had reduced significantly. Although this improvement in project results was confirmed by a UK-based survey (Saur & Cuthbertson, 2004), the authors acknowledged that their sample could have been unrepresentatively experienced, signifying a continued need for further research.

CRITERIA FOR ISPM SUCCESS

Referring to the Standish Group report "Extreme Chaos" (2001), it seems that lessons can be learned from the successes and failures of past projects which warrant further study. From extensive research, the Standish Group identified ten criteria for project success:

1. Executive support
2. User involvement
3. Experienced project managers
4. Clear business objectives
5. Minimize scope
6. Standard software infrastructure
7. Firm basic requirements
8. Formal methodology
9. Reliable estimates
10. Other criteria such as small milestones, proper planning, competent staff and ownership

In the UK based study, Sauer and Cuthbertson (2004) reported a higher project success rate than the US Standish Report (1994). Nevertheless, Sauer and Cuthbertson suggested that in order to continue this general improvement, the following recommendations ought to be adhered to:

- Project managers should:
  - •Structure projects into smaller units
  - •Select the right team and involving them in decision making
  - •Invest time and effort in self-development
- Senior IT managers should:
  - •Establish a project management focus in the organization
  - •Identify the right person for project management role
  - •Create appropriate career paths
  - •Be accountable through more effective performance management
- Senior business managers/sponsors should:
  - •Develop client understanding of project management
  - •Engage more actively with projects for which they have responsibility

Some reasons for the improvements described above were costs being cut, better tools being created to monitor and control processes and, not least, project managers becoming better skilled with better management processes being used, giving rise to optimism for the future of project management. Despite the change for the better as highlighted above, the Standish Group (2001) considered "Nirvana" still to be a long way off, indicating a need