



Conceptualising the lessons-learned process in project management: Towards a triple-loop learning framework

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Abstract

In order to improve success rates of project management, this conceptual paper proposes the inclusion of knowledge management and organisational learning through projects as core aspects of the process, from both individual and organisational perspectives. The lessons-learned process within the project management profession is scrutinised in an attempt to provide new models to overcome the difficulties that inhibit success. Empirical research data from 66 practitioners in an online qualitative survey have influenced the development of our conceptual model. We review single- and double-loop learning systems within the organisation environment, and develop a triple-loop of learning for projects that forms the basis of a new framework. This research will enable future development of processes for utilising the lessons-learned throughout the project life-cycle and the organisation.

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1. Introduction and background

Flyvbjerg (2014) notes that over a 70-year period project cost overruns remain high, often exacerbated by benefit shortfalls of between 20% and 50%. But Project Management (PM) success can no longer be determined only by the ‘iron triangle’ measures of time cost and quality, as Williams (2016) noted that both research and practice are moving towards multi-dimensional definitions involving objective and subjective criteria. However, as Rolstadas, Tommelein, Morten Schiefloe, and Ballard (2014, p. 656) concluded:

“The recipe to PM success has yet to be found, and there will probably be no single best solution. Success depends on many factors that may shift from project to project and from organisation to organisation”.

Our research question examines: “How improvements in the lessons-learned process can increase project success and develop organisational learning”.

The lessons-learned process is intended to capture the results and experiences from successes, failures, and near-misses, and absorb them in to the organisational structure for future use. However, although lessons are often identified their capture and categorisation face problems of both available time and process, while their application in future projects appears limited. Meredith and Mantel (2010) determine the project manager’s role as one of learning from their own and others’ experience, utilising lessons-learned for early warning signs (EWS) and for pretested remedies. First in the list of fundamental causes of project failure being “no use of earlier project final reports that contained recommendations for future projects” (Meredith and Mantel, 2010, p. 558).

Many organisations only partially engage in the lessons-learned process, allocating a project manager’s time and investing money in a database, but gaining little or no visible benefit. There is limited guidance in the Bodies of Knowledge (BoKs) or PM

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handbooks on the implementation of a lessons-learned process, but several successful organisations that have invested in the cultural and processual aspects, generate a return on their investment.

This paper aims to identify issues surrounding the lessons-learned process and offer a framework for putting knowledge management and organisational learning together as a core process within the whole life of the PM activity - from planning through to closing reports. This unique combination will enable the capture and application of lessons to be recognised and managed as benefits to both project and organisation. By preventing recurrence of problems, project-based organisations can make significant savings in their future projects against the traditional measures of time, cost and quality.

Project managers require a consistent organisation-wide database to enable the retrieval of relevant lessons. Such systems typically face two problems: the integration of new knowledge with existing, and the removal of obsolete knowledge from the database (Wijnhoven, 2003). Knowledge management systems require maintenance to prevent their falling into disuse due to obsolete information, or through the lack of context around information which leads to misinterpretation (Hasan and Crawford, 2003). However, experience of developing expert systems and intranets for knowledge management has shown that people underestimate the complexity of such a project (Wijnhoven, 2003).

This paper focuses on the project process and its situation within the organisation, by conceptually representing it as a triple learning loop, developed from the work of Argyris and Schön (1996) in the field of organisational learning. The contribution to knowledge provides a firm platform from which to develop a framework to integrate the lessons-learned process into the parent organisation through a range of procedures, to provide the necessary learning management modules for the BoK.

The remainder of the paper is organised as follows: Section 2, current professional guidance, and Section 3, literature review. Section 4 provides the definitions of knowledge and learning, and Section 5 organisational and individual learning. Section 6 determines the project learning requirements to enable the empirical data collection and analysis process for Section 7. Then a lessons-learned framework is presented in Section 8 with project represented conceptually in Sections 9, 10 and 11, as single-, double- and triple-loop learning activities, respectively. Section 12, contains discussion of the project learning framework and in Section 13 future developments are examined.

2. Current professional guidance

Professional institutes recommend establishing a knowledge bank that centralises information gained by individual project managers, as it enables the passing of information between projects. All PM professionals work on a three-stage process to maintain a lessons-learned knowledge bank by:

- accessing previous lessons during project planning and delivery phases,
- keeping project logs to record lessons throughout the project duration, and

- writing lessons-learned reports both during project and at project closure.

Williams (2003) observed that, in practice, project review processes were rarely in place, project success and failure was rarely analysed, and suggested that learning did not happen. The Association for Project Management (APM) includes the following relevant key actions in its BoK to be undertaken during and after a project (Association for Project Management, 2012):

- preparation and dissemination of lessons-learned to be defined in the communications management plan,
- storage of the information to be clearly defined in key documents to ensure classification and accessibility to data,
- post-project review to be part of the project control process, and
- audit trails for archived information to provide additional support for lessons-learned documents.

The Project Management Institute (PMI) BoK includes the lessons-learned document as a requirement at the closure point of any phase or project (Project Management Institute, 2013). There is also a requirement for a ‘corporate knowledge base’ for storing and retrieving all project documentation including lessons-learned. The lessons-learned documents are referred to as inputs to or outputs from many of the project processes in the detailed activities throughout the PM process. Likewise, the PRINCE2 framework (Office of Government Commerce, 2009) includes the same principles as the BoKs for the three-stage process detailed above. The APM identifies the lesson-learning process as a key indicating factor of organisational maturity and part of professional development (Association for Project Management, 2012), while the PMI includes the updating of organisational procedures and policies with the lessons-learned process (Project Management Institute, 2013). Despite the clear guidelines, there are contradictory views regarding the use of the lessons-learned process in projects, and the identification of aspects causing the difficulties.

Recent studies have indicated where some of the problems lie: knowledge transfer and learning occur through social and situated learning, and de-coupling the lessons-learned process significantly reduces their value (Hartmann and Dorée, 2015); six individual elements must be in place for the lessons-learned knowledge model to work - learning, culture, social activities, technology, process and infrastructure (Duffield and Whitty, 2015). While these studies point towards the requirements for a learning focus within PM, the lessons-learned process is not yet situated within the project organisation in a theoretical framework from which to implement as a practical process.

Irani (2010) posits whether success really exists and, if everything else is just a degree of failure. There are many definitions of project success and PM success, but the APM recognise the following high-level success factors as main contributors to PM success (Association for Project Management 2012, p. 32):

- “Defining clear goals and objectives
- Maintaining a focus on business value

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