Chapter 6

A Learning Organisation Approach to Software Project Management:
Promoting Knowledge Transformation and Interprofessionalism through Crowd–Funded Agile Development

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ABSTRACT

This chapter explores how a learning organisation differs from a teaching organisation, such as that each person holds responsibility for their own learning, yet are supported and guided by those who wish to help them further their personal development. This chapter aims to develop a software project management methodology, based on existing approaches, which can accommodate all people, regardless of ability. The model developed, called the C2-Tech-S2 approach, is specifically designed for projects that use crowd-funding and agile development, particularly in environments based around the Cloud. A pilot study is carried out to demonstrate the 'technology' stage of this model for assessment using the 'support' stage. This finds that all stages of the model need to be applied in a project, because on their own the stages may not produce the most effective outcomes in terms of increased participation.

INTRODUCTION

Tight budgets for some software projects, where income can be sporadic is leading to the need for a significant rethink of how such initiatives are approached. The use of crowd-funding is often suggested as a means to gain interest in and capital for software production, and is in fact one of the means recommended by the Welsh Government. Such projects, however, pose challenges for existing project management methods, as the development cycle does not simply go from start to finish, but is somewhat a

sporadic form of iterative development. This chapter therefore suggests that adopting an agile approach to software development that it will be possible for innovative software projects where finance is scarce to get off the ground without a hugely uncertain development model where it would not be known whether there would be anything at the end should funds cease to exist. It is therefore necessary for existing software development models to be rethought to take account of crowd-funding and agile development approaches – something this chapter attempts to achieve. Agile development is a successful method for project management, evolving with the same alacrity, but organisational culture also needs to change (Berger, 2007). This chapter shows how to address such change.

The Learning Organisation

A learning organisation is a place where people are continually discovering how they create their reality (Gibb, 1997). Many would naïvely think that a school or university is a learning organisation, when not all are, even if they are all teaching organisations. A university which only hires staff who already have all the experience needed for a particular job is not a learning organisation, as actual learning organisations invest in the development of their staff, choosing them on the basis of what they could achieve and not only with reference to what they have already achieved. Thus, a learning organisation is one that facilitates learning for all of its members, and thereby continuously transforms itself and knowledge within it (Rowley, 1998). What is central to the concept of a learning organisation is both organisational learning, defined as the intentional use of learning processes to continuously transform the organisation, and the related concept of knowledge (Thomas & Allen, 2006). Whilst a teaching organisation will focus on the knowledge transformation of its customers (i.e. students), a learning organisation invests in the personal development of all those that are part of it. Even so, whilst learning organisations are founded on the learning process of individuals in the organisation, individual learning does not necessarily lead to organisational learning (Wang & Ahmed, 2003). A whole organisational strategy that applies a learning culture to include customers, suppliers and other significant stakeholders, is essential (Barlow & Jashapara, 1998).

Crowd-Funding and Agile Development

Consumers engage in virtual new product developments mainly because they consider the engagement as a rewarding experience (Marchi, Giachetti, & De Gennaro, 2011). Different types of co-creation are evolving, from the discrete participation in 'crowdsourcing' to 'extreme and mass collaboration' models that offer deeper levels of engagement and participation (Kerrigan, 2010). Crowd-funding, is a collective effort by people who network and pool their money together, usually via the Internet, in order to invest in and support efforts initiated by other people or organisations (Ordanini, Miceli, Pizzetti, & Parasuraman, 2011). Agile software development is most suited to those organisations that embrace interprofessionalism, which involve several specialist teams of individuals who contribute to the overall project whilst otherwise maintaining their independence. Contingent working is highly suited to interprofessional environments, as those individuals with targeted skillsets can be brought in when required and then allowed to continue working for other clients when not engaged.

The 1990s fashion of focus groups has been in many cases given way to 'crowd-sourcing,' which is where across the Web a gathering a mass of people for the purpose of generating new ideas or solutions, have been rewarded by the paying profits to seekers and solvers (Blight & Ainley, 2008). Out of

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