Agile and Lean: Organizations, Products and Development

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Abstract

Agile development methods and their associated practices have become well-accepted within industry, and the success of projects using these methods is higher than traditional methods [1]. However, the optimal environmental parameters that suggest a fit between a project's requirements and needed outcomes, and the use of agile methods is still a matter requiring further research. This is due to the fact that software projects contribute broadly to the human condition, and their success or failure can have significant impacts on individuals, organizations, and society at large. The impact extends beyond software; agile manufacturing [2] and agile organizational strategy [3] share many fundamentals with agile software. As such, we see the continued research into agile methods of software development and other management areas to be a critical area with wide ranging impacts.

1. Introduction

The Agile/Lean mini-track explores agile methods and their effects on quality, speed and communication. We solicited research papers and experience reports that explored agile development, lean product management and agile/lean organizations.

2. Sessions

The mini-track has two sessions at HICSS 50.

Agile Working and Agile Thinking are the focus of the first session. In "Towards an Innovative Validation-Driven Approach to Lean Product Development" Al-Baik et al. describe an emerging model for validating requirements in Lean software development. Software systems often are built to include large numbers of features that are never used. The proposed model emerges from Action Research and seeks to establish a protocol for organizations to understand which requirements are most crucial, with the intention of delivering truly "lean" software more quickly, and with less waste. "Challenges in Transitioning to an Agile Way of Working" (Hekkala, et al.) reports a case study of challenges to transitioning to the use of agile methods Their paper stresses that organizations with long traditions of waterfall development have long traditional organizational norms and processes that must be modified to change to the use of agile methods. Common problems with agile transitions were present in their case, but several unique findings emerged from as well. In "Trading Discipline for Agility? Questioning the Unfaithful Appropriation of Agile Software Development Practices", Akbar Saeed challenges the notion that agile methods are not disciplined, but instead that discipline emerges from new sources in agile method like XP.

Specific agile activities are studied in the second session. In "Artifacts for Agile User-Centered Design: A Systematic Mapping," Garcia et al provide a review and mapping of the literature on integrating Agile methods with UX design processes. In "Understanding the Relations Between Iterative Cycles in Software Engineering," Terho et al. describe a study in which they open up the black box of agile iterations, and provide a framework for understanding that different types of iterations in agile methods – each with a distinct purpose, and explore the relationships between the iteration types. Finally, our mini-track's nominee for best paper, "Are More Frequent Releases Always Better? Dynamics of Pivoting, Scaling, and the Minimum Viable Product," Anderson et al. report the results of a simulation that investigates the forces that drive the dynamics of release length, and the outcomes of releases under different environmental pressures. uses grounded theory to understand the forces that lead to technical debt in software projects.

3. References

[1] J. Johnson, *CHAOS Report,*" Standish Group, 2011.

[2] R. Dubey, and A. Gunasekaran. "Agile manufacturing: framework and its empirical validation." *The International Journal of Advanced Manufacturing Technology* 76.9-12 (2015): 2147-2157.

[3] C.A. Lengnick-Hall, and T.E. Beck. *Resilience capacity and strategic agility: prerequisites for thriving in a dynamic environment.* UTSA, College of Business, 2009.

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