Agile and Lean: Organizations, Products and Development

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Abstract
Agile and lean management practices (which we define broadly to include Scrum, XP, Lean Startup and other related approaches) roughly triple the success rate of software projects over traditional management approaches [1]. Despite these results, the software industry continues to start new projects using traditional approaches. Because software projects contribute so broadly to the human condition, research on agile methods may produce significant productivity gains. The impact extends beyond software; agile manufacturing [2] and agile organizational strategy [3] share many fundamentals with agile software.

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

At the HICSS conference, we divided the papers into themes.


Specific agile activities are studied in the third session. In “Pair Programming vs. Solo Programming: What Do We Know After 15 Years of Research,” Alves de Lima Salge et al provide a meta-statistical study of research papers, concluding that pair programming significantly improves product quality and slightly increases development speed. In “Agile Big Data Analytics Development: An Architecture-Centric Approach,” Chen et al. describe how agile can help design and develop big data analytics projects and departments. In “Towards Technical Debt in Critical Software Development Projects: An Exploratory Field Study,” Ghanbari uses grounded theory to understand the forces that lead to technical debt in software projects.

The mini-track nominee for best paper and an open forum for discussing agile research challenges occupy the fourth session. In “Sensemaking and Complexity in Large-Scale Lean-Agile Transformation: A Case Study from Cisco,” Ken Powers describes how 200 employees perceive the impact of different impediments on agility, the progress of strategic initiatives and their organizational culture. In “Open Forum: Agile/Lean Research Challenges and Opportunities,” we discuss research opportunities and challenges.

3. References