

12-12-2022

The Agile Development Approach: An Exploration Using Task Design

Jon W. Beard
Iowa State University, jwbeard@iastate.edu

Follow this and additional works at: https://aisel.aisnet.org/treos_icis2022

Recommended Citation

Beard, Jon W., "The Agile Development Approach: An Exploration Using Task Design" (2022). *ICIS 2022 TREOs*. 90.

https://aisel.aisnet.org/treos_icis2022/90

This material is brought to you by the TREO Papers at AIS Electronic Library (AISeL). It has been accepted for inclusion in ICIS 2022 TREOs by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

The Agile Development Approach: An Exploration Using Task Design

Jon W. Beard

Iowa State University

jwbeard@iastate.edu

Agile approaches to product development and project management have become dominant in information systems design and development in recent years (e.g., 85% of survey respondents report using Agile in their work: Rigby, Elk, & Berez, 2020). Several approaches that have now been categorized as agile were emerging in the 1990s, and many agile aspects had been around for several decades before that. These new perspectives were driven by the growing recognition that information systems development was working with a flawed predictive approach that too often resulted in projects that failed to meet the time, budget, or scope criteria; some projects were being cancelled outright even after large investments in time and effort (cf. Charette, 2005). The publication of the ‘Agile Manifesto’ (2001) organized and consolidated adaptive innovative thinking and was the primary catalyst for agile’s emergence as a dominant approach. Key features for agile are a team-focused structure; significant user involvement; learning about product requirements (i.e., product discovery) as the project evolves through iterative, incremental development; and the rapid delivery of value through working software.

There is a strong theoretical foundation for some of the enthusiastic success that agile has delivered. With the growth in the ubiquitous nature of information technology it is important to understand some of the characteristics of the analysis and design work that helps to support successful software (or product) development. Task Design (also known as ‘Job Design’) is a theoretical approach that focuses on several key variables in the design of work. Task Design has two broad foundations. The first foundation is in the Job Characteristics Model defined by Hackman and Oldham (1976) which focuses on the psychological variables of task variety, task significance, job identity, autonomy, and feedback. The second foundational perspective is Salancik and Pfeffer’s (1978) Social Information Processing approach which emphasizes the effects of the social context of work and the consequences of past choices and actions. This research uses these two models to explore the perceptions and effects of the agile environment (primarily from a Scrum approach). This investigation includes all aspects of a Scrum approach, starting with the development of a vision, identifying the potential users’ personas, mapping a tentative path toward product completion, developing and refining the project backlog, executing the design and development effort through sprints, exploring the daily sprint stand-up, as well as the sprint review and retrospective. Task design may also provide some insight on how and why the incremental product release(s) are fraught with some uncertainty in implementation and security issues as indicated by the growth in DevOps and DevSecOps.

Keywords: Agile, Product Development, Project Management, Job Design, Task Design, Social Information Processing

References

- Agile Manifesto, 2001. “Manifesto for Agile Software Development.” <https://agilemanifesto.org> (Accessed October, 10, 2020).
- Charette, R.N. (2005, September) “Why Software Fails: We Waste Billions of Dollars Each Year on Entirely Preventable Mistakes.” *IEEE Spectrum*, 42(9), 42-49.
- Hackman, J.R. & Oldham, G.R. 1976. “Motivation through the Design of Work: Test of a Theory,” *Organizational Behavior and Human Performance*, 16, 250-279.
- Rigby, D., Elk, S., & Berez, S. 2020. *Doing Agile Right: Transformation without Chaos*, Boston, MA: Harvard Business Review Press, referencing “Developer Survey Results, 2018,” Stack Overflow, <https://insights.stackoverflow.com/survey/2018#development-practices> (Accessed December 9, 2019).
- Salancik, G.R. & Pfeffer, J. 1978. “A Social Information Processing Approach to Job Attitudes and Task Design,” *Administrative Science Quarterly*, 23(2), 224-253.