

ABSTRACT

Transforming user requirements into implementable systems is a challenge in software development, especially when those requirements are ambiguous. This study aims to transform ambiguous requirements into documents and system models through an iterative validation process, with a case study on the development of the Empowr application, a web-based outsourcing startup. In the context of startups that demand speed and accuracy in creating products amidst uncertainty, this study uses the Lean Startup method with a focus on the build stage as an adaptive thinking framework in developing products in stages and continuously validated. Meanwhile, the Agile Collaborative–Model Driven Development (AC-MDD) approach is used to facilitate the iterative and collaborative preparation of system artifacts. The research inputs are in the form of user requirements, BPMN, and the results of informal discussions, while the output is a document according to the ISO/IEC/IEEE 29148:2018 standard and a system model using Unified Modeling Language (UML) and Entity relationship diagram (ERD) that is validated through an iterative cycle. Through this process, all artifacts were successfully validated with the product owner and declared in accordance with business needs. This research shows that a collaborative and iterative approach is effective in producing systems that are relevant to user needs.

Keywords: lean startup, agile collaborative-model driven development, functional requirement, Unified Modeling Language, Entity relationship diagram