

Proposal

Master Thesis Research Proposal – A Simple One-pager Abstract

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Title – SAIL: A Scalable AI Lifecycle Framework for Coordinated AI Adoption in Software Organizations

Purpose – The purpose of this paper is to develop and evaluate SAIL, a structured framework that enables software

organizations to adopt AI in a coordinated, scalable, and reusable manner. The expected outcome is a plug-and

play AI adoption model with clear guidelines for use case mapping, staged implementation (Awareness → Pilot

→ Scale → AI-Native), governance, and cross-team reuse—providing practical value for CTOs, engineering leads, and innovation managers.

Research gap – While literature addresses enterprise architecture (Bernard, 2012), digital transformation (Warner

& Wäger, 2019), innovation diffusion (Rogers, 2003), dynamic capabilities (Teece, 2007), and resource-based

view (Barney, 1991), there is no integrated, use-case-driven framework designed specifically for scalable AI

adoption across software teams. Existing models focus on isolated AI pilots or generic transformation strategies,

lacking mechanisms for coordination, reuse, and progressive scaling. This study fills that gap by proposing and

conceptually validating SAIL as a practical, theory-informed framework tailored for software organizations.

Research question – How should AI adoption in software organizations be structured to ensure scalability,

coordination, and reusability across diverse use cases?

Theoretical lens – The study is grounded in five key theoretical foundations: (1) Enterprise Architecture (EA)

(Bernard, 2012) for systemic integration; (2) Digital Transformation (Matt et al., 2015) for organizational readiness; (3) Innovation Diffusion Theory (Rogers, 2003) to understand adoption dynamics; (4)

Dynamic

Capabilities (Teece, 2007) for strategic agility in sensing, seizing, and transforming AI opportunities; and (5)

Resource-Based View (RBV) (Barney, 1991) to treat AI assets (models, data, knowledge) as valuable, rare, and

hard-to-imitate resources. These lenses collectively inform SAIL's design and evaluation.

Design/methodology/approach – This research follows a conceptual, theory-driven methodology using design

based research (Hevner et al., 2004). The approach includes: (1) a comprehensive literature review synthesizing

theories on AI adoption and organizational change; (2) framework development defining SAIL's pillars (use case identification, adoption staging, governance, implementation roles, evaluation & reuse); and (3) conceptual evaluation through theoretical application to realistic AI use cases (e.g., code generation, documentation automation, sprint planning). For each use case, I will outline step-by-step how SAIL guides: identification → prioritization → pilot design → scaling path → governance → reuse. This demonstrates SAIL's internal coherence, scalability, and practical utility without primary data collection.

Time plan – Submit proposal: End of this week

- Finish literature review and start empirical part: By the end of September
- Submit your master thesis: By the End of the year

Expected challenges & limitations – As a conceptual study, the main limitation is the absence of real-world validation. However, the use case walkthroughs are designed to simulate realistic organizational contexts, enhancing practical plausibility. A key challenge is ensuring the framework remains both theoretically rigorous and accessible to practitioners, which will be addressed through iterative refinement and alignment with industry relevant examples.