

The paper, published in May 2015, appeared in the 2015 IEEE/ACM 37th IEEE International. The authors, affiliated with the Victoria University of Wellington, New Zealand, presented a comprehensive study delving into the nuanced relationship between software architecture and agility within the realm of agile development.

The authors collected data through a robust methodology primarily relying on face-to-face semi-structured interviews with 44 participants involved in agile architecture. These participants spanned diverse backgrounds, including highly experienced architects, senior developers, and managers, hailing from various organizational settings like independent software vendors, government departments, and product developers. The authors augmented the interviews with documentation like software architecture documents and models, supported by additional clarifications via email and phone discussions. This multifaceted approach ensured a rich dataset reflecting a wide spectrum of perspectives and experiences.

Key concepts outlined by the authors to elucidate their findings revolve around the forces influencing agile architecture strategies. They identified six forces impacting a team's context: Requirements Instability, Technical Risk, Early Value, Team Culture, Customer Agility, and Experience. These forces directly shape the strategies employed by agile teams in determining the extent of initial architecture design. Additionally, the paper introduced five distinct strategies for upfront architecture design: Respond to Change, Address Risk, Emergent Architecture, Big Design Up-Front (BDUF), and Using Frameworks and Template Architectures. These strategies serve as the guiding principles for agile teams in navigating the balance between agility and architectural planning.

The authors advocate for an emergent design approach when projects exhibit high levels of agility triggered by factors like the need for Early Value or when teams possess considerable agility due to their culture, experience, or customer alignment. Emergent Architecture, characterized by minimal upfront design focusing on immediate requirements and favoring quick market releases, aligns well with highly agile projects. Conversely, a BDUF approach is recommended when facing non-agile customer needs, competitive tenders, or demanding Architecturally Significant Requirements (ASRs) that necessitate a more comprehensive upfront design.

In essence, the authors' research provides a nuanced understanding of the interplay between agile development and software architecture. They advocate for adaptive strategies in architecture design that respond to the contextual forces influencing a project's dynamics, emphasizing the need for a balanced approach tailored to the specific needs and characteristics of each project.