

ABSTRACT

The relationship between software architecture and cost structure has an important impact on the operations of a food delivery startup like Santapan. Santapan health-focused food delivery operations in Indonesia with the rising prevalence of health issues like diabetes. Santapan aims to provide healthy meal options tailored to users' health needs. In the early stages of product development, designing an efficient business model is critical for startup success. Lean Canvas aligns Santapan's strategy with market needs while considering cost management. This research evaluates two popular software architectures, monolithic and microservice, and their implications on Santapan's operational costs, scalability, and performance. The study uses the Architecture Tradeoff Analysis Method (ATAM) to evaluate architectural decisions and their alignment with business requirements. When comparing the cost-effectiveness, scalability, and performance of both architectures, this paper provides insights into the decision-making process regarding architecture options in the early stages of a startup. The findings suggest that monolithic architecture offers a more cost-effective solution during the early phase, but microservice provide better scalability but at higher operational complexity and costs. By choosing a cost structure using the Lean Canvas and choosing the right architecture with the Architecture Trade-off Analysis Method (ATAM), Santapan can more easily determine a good architecture to use in the initial phase of a startup.

Keywords: *Architecture Trade-off Analysis Method (ATAM), cost structure, software architecture, lean canvas, microservice, monolithic.*