**Case study: Evolutionary Architecture at Amazon (2002)**

**Amazon’s Shift from Monolith to Service-Oriented Architecture**

Amazon once faced major limitations with its original monolithic architecture. As the system grew, it became tightly coupled, making it difficult for teams to work independently or deploy changes without affecting other parts of the application. This structure slowed innovation and limited scalability.

To solve this, Amazon adopted a Service-Oriented Architecture (SOA) (p. 184 [1]). They broke the large application into smaller, independent services that could communicate over a network. Each team was given full ownership of its service, allowing them to work more autonomously. The transition followed key principles like treating services as products, focusing on automation, creating loosely coupled components, and designing for failure. It was a gradual process that began with identifying logical boundaries in the monolith and splitting it into manageable services. This shift empowered teams to innovate and deploy faster, since they had full control over their services. It also made the overall system more resilient and easier to scale.

Amazon’s experience highlights several lessons. Moving to SOA improved scalability and agility. Giving teams ownership encouraged innovation. Decoupling services reduced the impact of failures (Increased Reliability [2]). Taking an evolutionary approach allows for steady progress. Lastly, organizational changes were necessary to fully support the new architecture.

In summary, Amazon’s move to SOA helped it overcome the limitations of its monolithic system and positioned the company for continued growth and innovation.

Sources:

1. Kim, G., Humble, J., Debois, P., Willis, J., & Forsgren, N. (2021). *The DevOps handbook: How to create world-class agility, reliability, & security in technology organizations* (2nd ed.). IT Revolution Press. (pp. 184–189)
2. https://medium.com/@hellomeenu1/why-amazon-prime-video-reverted-to-a-monolith-a-case-study-on-cloud-architecture-evolution-bd2582b438a5