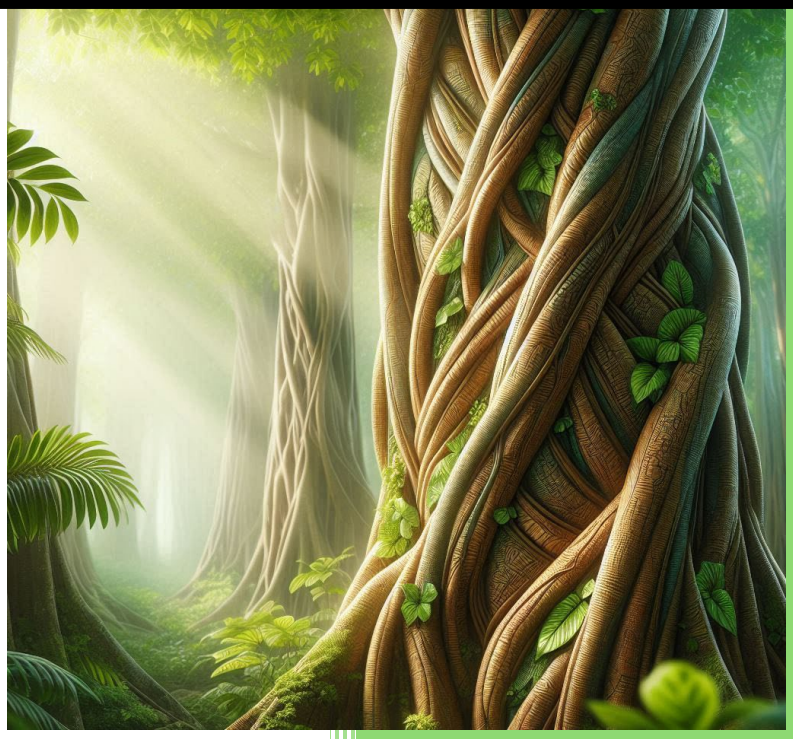
2025

Module 6.2: Case Study: Strangler Pattern at Blackboard Learn (2011)



Steve Stylin

Bellevue University

6/27/2025

In the case study presented in Chapter 13, “Strangler Pattern at Blackboard Learn (2011)” of the "DevOps Handbook," the author explores the Strangler Pattern implemented at Blackboard Learn during a significant transformation of their software architecture. The primary focus was on the gradual migration from a legacy system to a more modern architecture, enabling Blackboard to enhance its product offerings without incurring overwhelming risk or disruption to existing services.

- **Legacy System Challenges:** Blackboard Learn operated on a monolithic architecture, presenting issues in terms of scalability, maintainability, and overall flexibility. The constraints of outdated technology hindered the need for updates and new features (Kim, Humble, Dubois, & Willis, 2021).
- **Strangler Pattern Implementation:** The Strangler Pattern, inspired by the behavior of strangler figs that grow around existing trees, was employed to replace parts of the legacy system incrementally. Rather than a complete shutdown of the existing architecture, the team focused on creating new features in a modern framework while slowly phasing out the older components (Bliki: Strangler Fig, 2024) (What is the strangler fig pattern, and how does it work?, 2025).
- **Building Blocks Architecture:** The introduction of Building Blocks Architecture allowed teams to enhance code modularity. This approach encouraged the development of small, self-contained modules or services that could be developed, tested, and deployed independently. Consequently, teams could innovate rapidly while ensuring that the existing functionalities remained intact.

4. Lessons Learned:

- Incremental Change is Key: A gradual approach enabled Blackboard to minimize the risks associated with radical changes while gradually improving the system.
- Focus on Modular Design: Building Blocks Architecture proved critical in improving code modularity, leading to easier maintenance and easier adoption of DevOps practices.
- Cross-Functional Collaboration: Successful implementation involves collaboration between various teams, ensuring alignment on goals and fostering a culture of continuous improvement.

DevOps Integration: As Blackboard Learn transitioned to a more modular structure, integrating DevOps practices helped streamline deployment processes, enhance team communication, and respond more promptly to user feedback.

The Strangler Pattern case study on Blackboard Learn illustrates that significant architectural migrations can be achieved through incremental changes and a modular design approach. By adopting the Building Blocks Architecture, the team significantly improved code modularity, promoted a culture of collaboration, and laid the groundwork for ongoing innovation and adaptability in their development practices.

References

Retrieved from https://martinfowler.com/bliki/StranglerFigApplication.html

Kim, G., Humble, J., Dubois, P., & Willis, J. (2021). *Architect for low-risk releases* (Second Edition ed.). IT Revolution.

Retrieved from https://www.techtarget.com/searchapparchitecture/tip/A-detailed-intro-to-the-strangler-pattern