Accelerating Product Development

A study in Blockchain-enabled Secure DevOps

DSCI DIGITAL SUPPLY CHAIN INSTITUTE

Bitfury

Aricent

Project Purpose

To improve revenue and profitability in software development processes, Secure DevOps methodologies, and geographically dispersed teams via blockchain-enabled workflows.

Participants

The Center for Global Enterprise's (**CGE**) Digital Supply Chain Institute (DSCI) is an industry group that creates best practices for digital supply chain management,

Aricent is a global design and engineering company innovating for customers in the digital era and is recognized for industry certified best practices and a steadfast commitment to excellence.

The Bitfury Group utilizes the Blockchain technology to allow companies to successfully digitize their assets and safely transact them over the internet – making the world safer, simpler and more efficient.

Background

As a part its research agenda, DSCI resolved to improve the industry's understanding of Blockchain and its applicability in digital supply chains.

In June 2017, DSCI engaged with Aricent – a Global Engineering Research & Design (ER&D) firm and institute member, to explore how blockchain could enhance software product development supply chains, and improve modern development operations (DevOps) processes. In collaboration with Aricent, DSCI partnered with Bitfury – a blockchain technology company to design and execute a DevOps focused blockchain PoC.

Overview

The requirement of Secure DevOps in global organizations poses unique challenges to its implementation. These challenges arise in terms of scaling the solution to manage workflow across large, diverse and geographically dispersed development teams. Seamless collaboration across disparate environments where automated processes and human developers can work

symbiotically is required. To address these issues, the team collaboratively envisioned and developed a technical solution (PoC) structured as a single blockchain-based system. The automated solution facilitates trusted product development, increases developer efficiency, and delivers increased transparency.

Objectives

- Generate revenue through product development lifecycle acceleration
- Improve profitability through process efficiency gains
- Increase transparency in collaborative (intra/multiorganizational) environments
- Enhance the Secure DevOps process utilized across the industry
- Create a competitive differentiator

Why Blockchain?

- Smart contracts ensure development processes and workflows are realized as intended within or across organizations.
- Entities can verify requirements, tests, or change requests are executed as agreed upon, in a tool or environment agnostic manner. No single entity can overwrite data or override the process.
- Stakeholders from Security, Compliance, Legal, etc. can verify compliance with policies (e.g. only builds with accepted open-source packages move ahead) for trusted, automated releases. A single interface allows for processing exceptions, with all deviations from process logged immutably.
- Seamless integration of software licensing and billing upon software product release

Results

Post Blockchain POC deployment, results were collected from projects over the course of a month and the following observations were noted:

- Improved cycle time by **34 %**
- Increased productivity by **29 %**
- Improved quality by **11 %**

Conclusion

Adoption of blockchain-enabled development techniques yielded significant quantitative and qualitative improvements. Blockchain-enabled workflows lead to faster product development cycles, and improved productivity - unlocking new revenue potential and generating increased profitability. The technology, and our solution, should achieve similar results when applied to large-scale projects across multiple industries.