



UPMC Enterprises Helped a Health Care Tech Startup Overcome Critical Application Security Challenges and Drive Success

Overview

A robust security and vulnerability assessment allows startups to identify potential risks early, protect intellectual property, and comply with regulations such as HIPAA. The increasing complexity of the health care landscape, including data-rich value-based care, AI-driven health solutions, and the Internet of Medical Things (IoMT), has expanded the attack surface, leaving the health care industry with many potential vulnerabilities. Startups that prioritize security not only mitigate these risks but also enhance their market position by establishing trust with investors and customers in a sector where data protection is paramount.



Challenge

In 2021, a health care technology startup engaged UPMC Enterprises Technology Services to conduct a Security and Vulnerability Assessment across the company's technical assets and processes, ahead of a major deployment within a large integrated health care system. The assessment revealed significant security, technical, and operational challenges. Over 3,000 SQL security risks and 11,000 bugs were uncovered, with 55% of the company's source code identified as duplicative. Furthermore, the on-premises data management strategies were found to be vulnerable, and the offshore development team lacked the necessary expertise to resolve these issues in time for deployment. The startup recognized that it lacked the internal technical security expertise required to address these problems. The company was at risk of losing a major customer, presenting a significant financial and operational threat, and urgently required substantial technical security assistance to meet its deployment timeline.



Solution

Following a Security and Vulnerability Assessment, UPMC Enterprises Technology Services addressed the identified security concerns. The team employed analytical tools to conduct a comprehensive security test, ensuring all vulnerabilities were identified and categorized into four areas: Vulnerabilities, HIPAA Logging, Application Logging, and Authorization Security. Using Agile methodology, the team organized and prioritized security fixes, while implementing automated vulnerability scans to detect any new issues that emerged during remediation. Given the tight timeline, the team worked concurrently on refactoring the source code for efficiency and debugging the 11,000 bugs alongside the security improvements. To prevent future issues, the team implemented unit testing, helping to stabilize the application and improve quality assurance practices.



Impact

UPMC Enterprises' expertise in health care technology proved instrumental in the startup's successful turnaround. Within the six-month engagement, the company transitioned from uncertainty over its ability to meet deployment deadlines to being well-positioned for rapid growth. By the conclusion of the engagement, the startup had passed all security, common vulnerabilities and exposures, and bug assessments, audited its application, and implemented stringent access authorization protocols. The Security and Vulnerability Assessment team's methodical approach to addressing security risks, combined with their integration of automation and quality assurance, not only remediated the startup's technical debt but also stabilized its application and improved its development culture. These strategic changes eliminated significant barriers to growth and contributed to the company's ongoing success.



Contractor engagements are timeboxed, so they don't have a vested interest in the long-term success of what they build. All of the technical members of the UPMC Enterprises team who went into this engagement have battle scars. Their experience and professionalism allowed them to walk into the caves, find the dragons, and deal with them. They were invested in our success – and it showed.”

- Chief Technology Officer,
Health Care Technology Startup



The Security and Vulnerability Assessment Service of a health care technology startup identified over 3,000 SQL security issues, 11,000 bugs, found that 55% of its code was duplicative, and identified major cultural issues amongst the company's offshore dev team on the eve of a major deployment.

UPMC Enterprises Technology Services offers a comprehensive suite of services to help your business solve problems, create innovative solutions, and deliver outcomes.

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