



Securing 45 Million Lines of Code: A CodeSign Integration Case Study

SUCCESS STORY | CODESIGN



Business **need**

The client wanted to enhance the security and integrity of its software applications, particularly those used by brokers and internal systems. The primary objectives were:

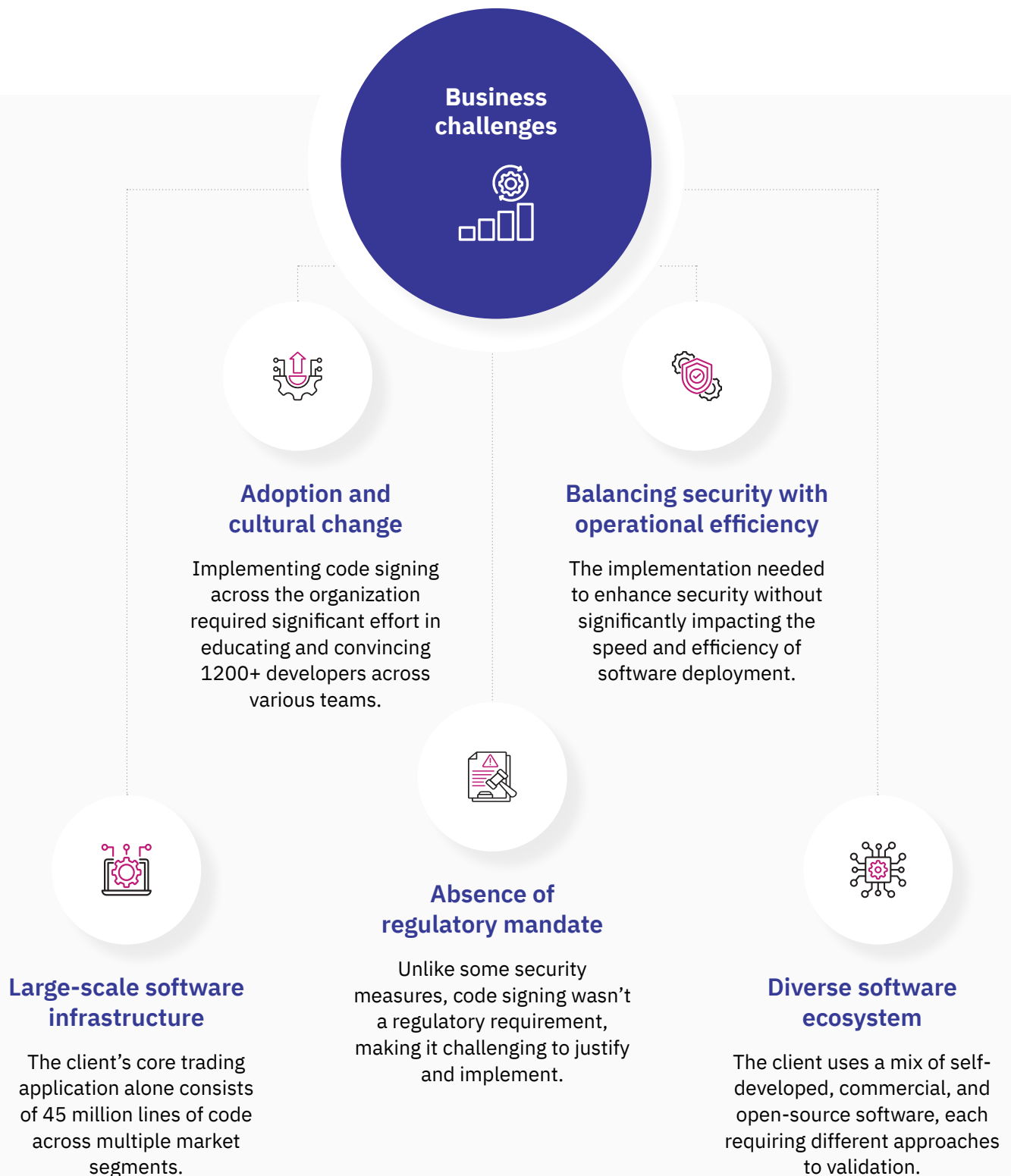
- To ensure that the software distributed to brokers is genuine and hasn't been tampered with.
- To validate all software running within the client's internal systems, including self-developed, commercial, and open-source software.

These needs arose from the increasing scale of operations, the growing complexity of cyber threats, and the importance of maintaining trust, transparency, and data integrity in the financial markets.

Business challenges

Implementing code signing at the stock exchange presented a multifaceted set of challenges that spanned technical, organizational, and cultural domains. These challenges underscored the complexity of introducing a new security measure in a large, established financial institution with critical operations. From managing an

extensive codebase to driving organizational change, the client faced several hurdles in realizing its code-signing vision. The following points highlight the key challenges encountered during this transformative project:



Business **solution**

Aujas implemented a comprehensive code-signing solution with the following key features:

- **Third-party certificate-based signing:**

Implemented a system where an independent third party signs the code, enhancing trust and verifiability.

- **End-to-end validation**

Ensured the software remains tamper-proof from development to deployment on brokers' systems.

- **Internal software validation**

The code signing process was extended to all software running within the stock exchange, including internally developed, commercial, and open-source applications.

- **Automated signing process**

Streamlined the code signing procedure to minimize development and deployment pipeline friction.

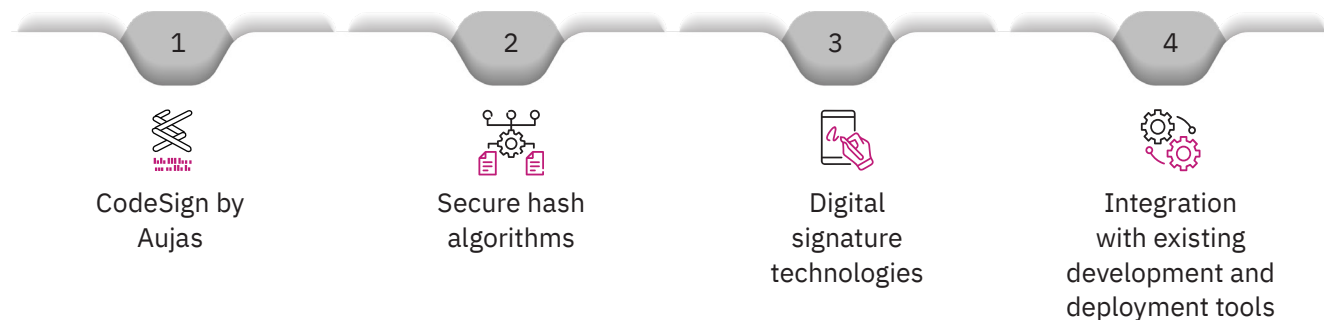
- **Educational initiatives**

Conducted extensive training and awareness programs to ensure adoption across all development teams.



Technology **stack**

The technology stack included:



Project **differentiator**

The code signing implementation stood out in several ways, demonstrating the exchange's commitment to security and willingness to go beyond standard practices. These differentiating factors set the client

apart in the financial services sector and positioned it as a leader in proactive security measures. The unique aspects of this project include:

Comprehensive scope

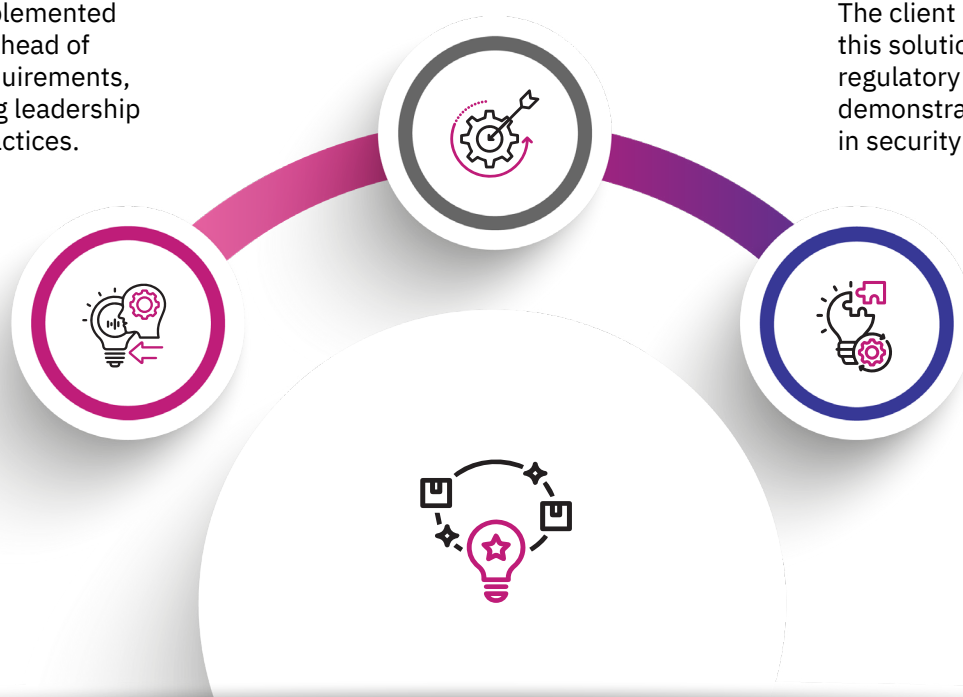
The project aimed to cover not just externally distributed software but all software running within the client's systems.

Proactive approach

The client implemented this solution ahead of regulatory requirements, demonstrating leadership in security practices.

Scale of implementation

The client implemented this solution ahead of regulatory requirements, demonstrating leadership in security practices.



Business **impact**

Implementing code signing at the stock exchange yielded significant benefits that extended beyond mere technical improvements. This initiative had far-reaching implications for the client's operations, reputation, and strategic positioning in the market. By enhancing trust and security, the client mitigated potential risks and strengthened its foundation for future growth and innovation. The business impact of this project can be observed across various dimensions:

Enhanced trust

Code signing assures brokers and regulators that the software distributed by the client is genuine and untampered.

Improved security posture

By validating all running software, the client significantly reduced the risk of supply chain attacks and malicious code execution.

Alignment with core values

The implementation reinforced the client's commitment to trust, transparency, and data integrity.

Future proofing

By proactively implementing advanced security measures, the client has positioned itself ahead of potential regulatory requirements.

Market differentiation

Enhanced security measures could differentiate the client in the competitive financial markets.





Conclusion

The client's implementation of code signing represents a significant step in enhancing the security and integrity of its software ecosystem. By ensuring that all externally distributed, and internally used software is verifiable from the stock exchange, the client substantially mitigated the risk of tampering and malicious code execution. This project also demonstrates Aujas Cybersecurity's commitment to maintaining the highest standards of security and trust, which are crucial in the financial services industry. While the implementation faced challenges, particularly in scale and adoption, its successful execution positions Aujas Cybersecurity at the forefront of security practices implementation experts in the stock exchange sector.

About **Aujas Cybersecurity**

Aujas Cybersecurity -An NSEIT Company empowers clients with enhanced security resilience by minimizing the potential for attacks, threats, and risks. We specialize in architecture risk analysis, comprehensive threat modeling, rigorous penetration testing, and secure coding guidelines. By partnering with us, you can strengthen your security defenses and maintain a robust security posture.

For more information, visit us at www.aujas.com or write to us at contact@aujas.com.

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