



Reinvention story

Revolutionizing Banking Infrastructure with Agentic AI-driven Legacy Modernization

80% Faster Legacy-to-modern Code
Transition Sets New Benchmarks in
Software Development



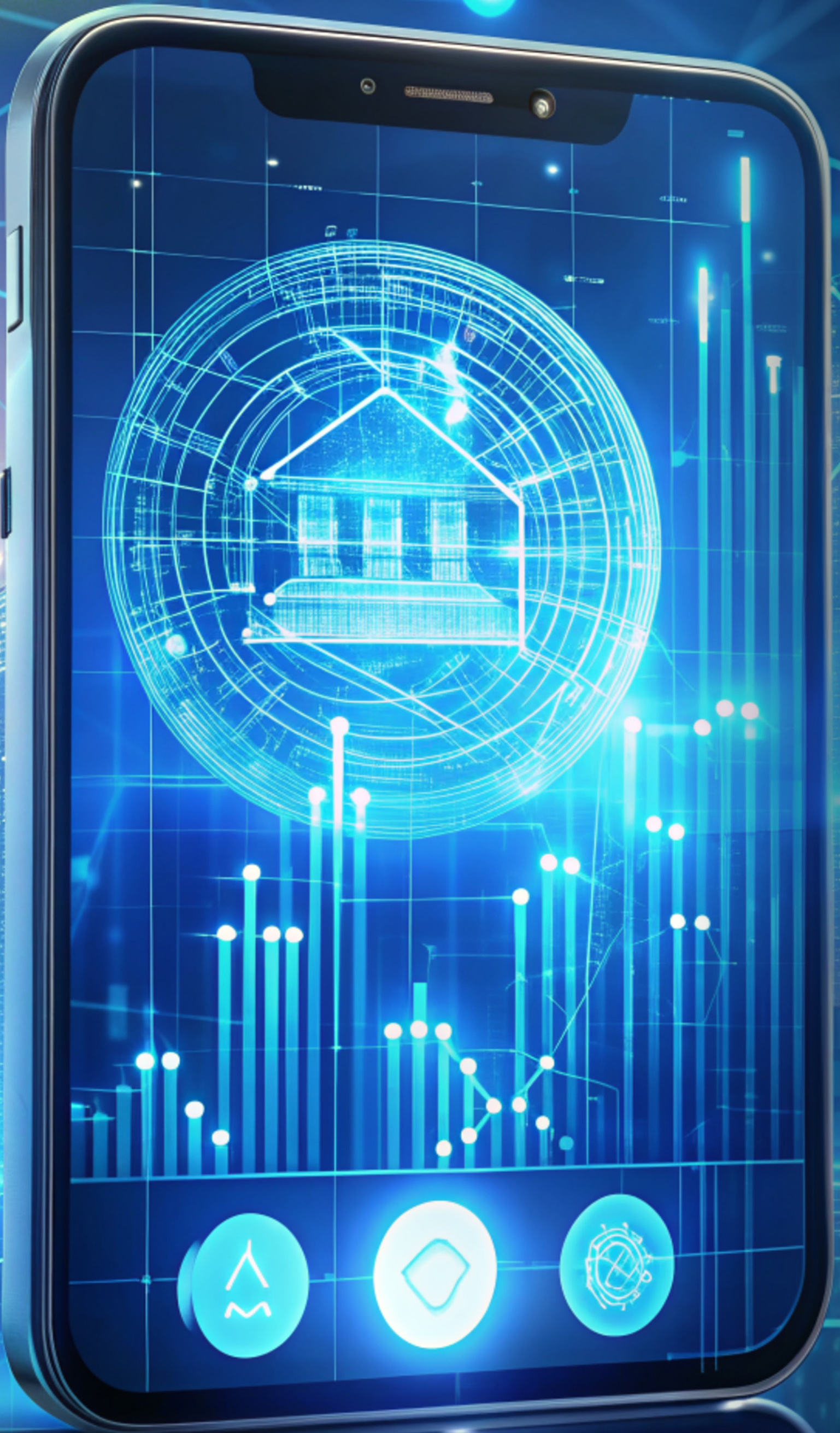
Banks must embrace agility and innovation to stay competitive and meet evolving customer expectations in today's fast-paced digital landscape.

Unfortunately, traditional banking systems are saddled with outdated architectures and operational processes that act as powerful barriers to progress. These legacy systems inflate maintenance costs, stifle innovation, and expose banks to critical security vulnerabilities, risking their reputation.

With customers demanding more flexibility and seamless experiences, banks must act swiftly to avoid losing their valuable deposits to financial institutions that offer greater adaptability.

Despite the complexity, cost, and time associated with modernization, banks have no choice but to embark on this transformative journey.





The challenge

Countdown to Change

Our client, the Argentine subsidiary of an international bank, faced the critical challenge of migrating its legacy application. With a core banking system deeply embedded in the mainframe environment and built on COBOL/DB2, the bank confronted a diminishing pool of COBOL experts as experienced professionals retired. This increased reliance on **outdated technologies posed a significant risk**, as the days of COBOL were numbered amidst the transition to modern languages like Java, .NET, and Node.js.

The bank's operational backbone, consisting of approximately 60 million lines of code, had faithfully served its operations for decades. However, the **escalating cost** of maintaining this system became a growing concern, mainly driven by the need to acquire MIPS (Millions of Instructions Per Second) for mainframe transaction processing.

To address mounting costs and drive greater agility in launching new functionalities, the bank strategically **transitioned from its legacy architecture to a modern, cloud-based platform**. The objectives were clear: reduce operational expenses, expedite time-to-market for new services, and **future-proof the infrastructure** by adopting a more flexible and scalable system. However, the challenge lay in the initial projection that transitioning from legacy to modern architecture would span a decade using traditional approaches.

To fast-track the process, the bank joined forces with Globant, estimating a compression of the timeline from an anticipated ten years to an impressive three years. This collaboration employed three essential strategies to swiftly migrate legacy applications while adhering to predefined standards: bolstering manpower, implementing a follow-the-sun development model, and harnessing advanced **AI agent technology** to expedite coding and enhance operational efficiency.

“This project positions the bank to reduce operational costs and improve agility, setting a precedent for other financial institutions looking to modernize their legacy systems. By leveraging AI and innovative development strategies, we have demonstrated that even the most complex and entrenched systems can be transformed efficiently and effectively.”

Guillermo Meyer,
VP of Technology at Globant.

The Approach —————

Everything carefully at once

Globant focused on streamlining a module migration of the bank’s legacy COBOL, harnessing AI agents to automate analysis, documentation, prototyping, development, unit testing, and deployment. Through a pilot project, Globant’s team accelerated the time to market, effectively documented the critical knowledge embedded in legacy source code, and developed robust Java microservices aligned with the bank’s target architecture, all while maintaining the integrity of the original data storage.

The four-week project aimed for functional equivalence and better performance, needing good code management, stakeholder cooperation, and the proper infrastructure. Despite potential challenges like complex legacy code and current AI context limitations, Globant successfully transformed the legacy system module, tailoring the modernization to their requirements and following the bank’s coding standards and procedures.

The critical steps in the process of streamlining

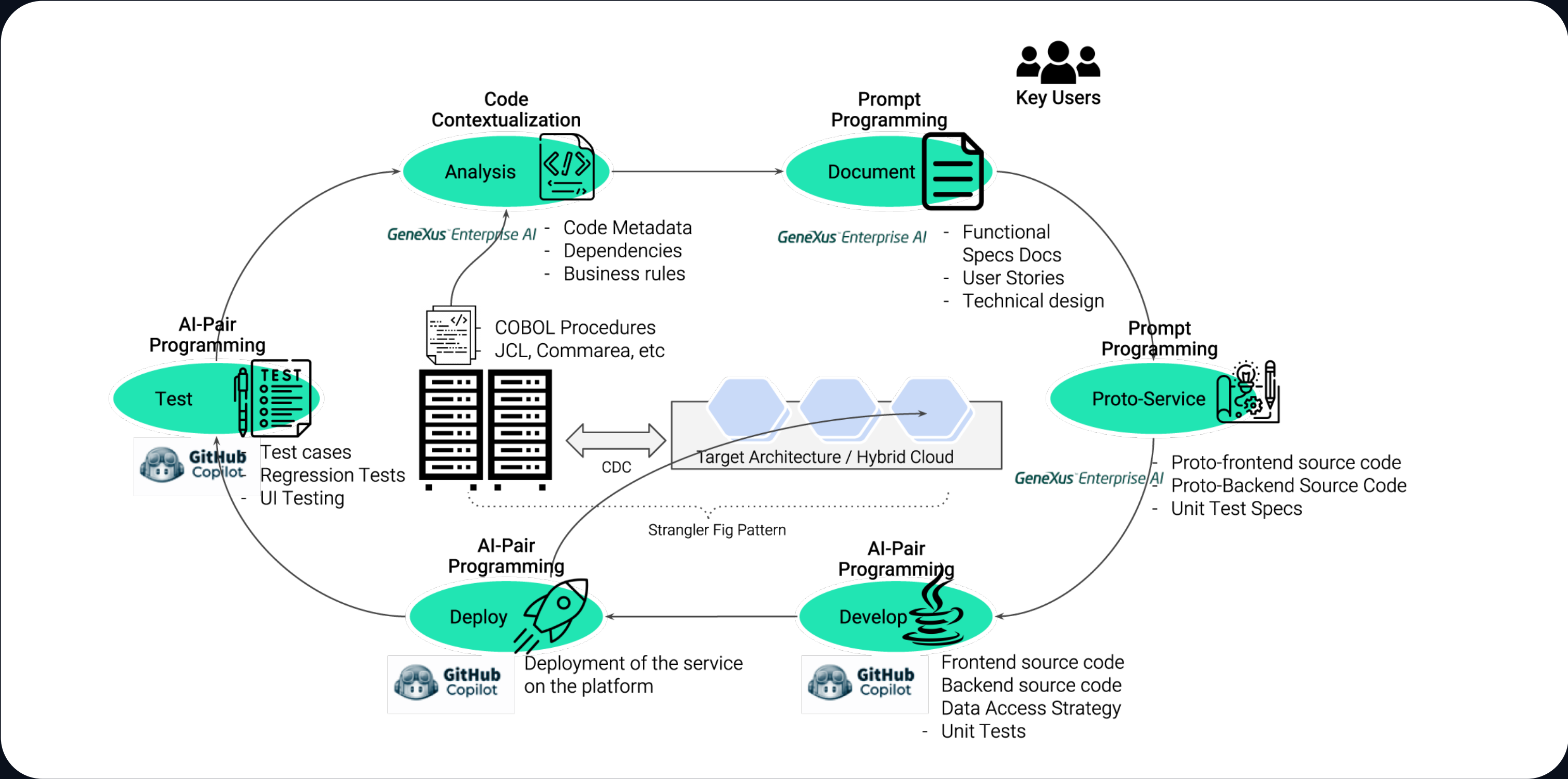
Contextualization and Analysis: Globant’s team began analyzing 11,600+ lines of COBOL code the bank provided, representing a typical transaction pattern. With AI tools, it was understood the code’s structure and dependencies, ensured that it could accurately document the business logic and processes embedded within the legacy system.

Documentation Extraction: Using GeneXus Enterprise AI, our AI Accelerator Platform that enables businesses to rapidly adopt and develop AI solutions, integrating seamlessly with existing systems, Globant extracted technical-functional specifications from the COBOL code, capturing the business rules and processes locked within the system for decades. This

documentation was then validated with the bank’s IT team to ensure accuracy.

Service Prototyping: With the extracted documentation and using GeneXus Enterprise AI, Globant generated Java skeletons and service prototypes. Unlike traditional COBOL-to-Java transformation processes that result in a monolithic codebase, our approach focuses on creating a modular, service-oriented architecture. This allowed for greater flexibility and scalability in the new system.

Accelerated Development: To accelerate the process, the team leveraged the generated service prototypes and enhanced their development workflow with AI tools like GitHub Copilot. This approach allowed for the rapid development, testing, and deployment of new services within the bank’s target environment using containerized microservices. The entire PoC was completed in just four weeks, demonstrating a significant acceleration in the development process—reducing an estimated 560 hours of traditional development time to just 105 hours.



Results and Impact

From Abstract Insights into Tangible Success

The pilot project was a success, confirming that the Agentic AI-driven approach could bring multiple benefits. Legacy migrations in banking typically take years, but Globant's innovative approach has drastically transformed this process.

Globant rearchitected over 11,600 lines of code into 4,921 lines of Java microservices in just 105 hours, compared to 560 hours with traditional methods. Our strategy led to:

- **A 77% increase in code documentation and archaeology efficiency.**
- **An 86% boost in unit testing speed**
- **An 80% acceleration in Java coding.**

This groundbreaking transition from legacy to modern code establishes a new benchmark for software development productivity. With the pilot project completed, the bank is now finalizing its target platform definition. The next phase involves migrating additional transactions, which will further reduce the bank's reliance on the mainframe and pave the way for complete migration in the following years.





“Globant’s AI-driven modernization reduced our legacy migration timeline from ten years to three, significantly cutting costs and boosting agility. This transformation is a game-changer for our banking operations and future-proofing our infrastructure.”

CIO of the Argentine subsidiary of a major international bank

Conclusion

A New Legacy Infrastructure Through AI Agents and Innovation

Our collaboration with the bank has solved an immediate problem and laid the foundation for future innovation. As the banking industry continues to evolve, this project is a model for how AI and modern development practices can revolutionize legacy infrastructure, making banks more resilient, scalable, and ready for the future.

About Globant:

At Globant, we create the digitally-native products that people love. We bridge the gap between businesses and consumers through technology and creativity, leveraging our experience as an AI powerhouse. We dare to digitally transform organizations and strive to delight their customers.

- We have more than 28,900 employees and are present in 33 countries across 5 continents, working for companies like Google, Electronic Arts, and Santander, among others.
- We were named a Worldwide Leader in AI Services (2023) and a Worldwide Leader in CX Improvement Services (2020) by IDC MarketScape report.
- We are the fastest-growing IT brand and the 5th strongest IT brand globally (2024), according to Brand Finance.
- We were featured as a business case study at Harvard, MIT, and Stanford.
- We are active members of The Green Software Foundation (GSF) and the Cybersecurity Tech Accord.

For more information, visit www.globant.com

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