



Case Study

Unlocking Business Growth through Platform Modernization leveraging the Digital Business Methodology (DBM)

Client: Major Global Banking Institution

Key highlights



Reduction in load time from 30 seconds to under 2 seconds, leading to higher customer satisfaction.



Successful adaptation to complex regulatory and compliance standards across **100+** countries.



Enabled seamless processing of **2 billion** payment transactions annually.



99.99% availability of online portal and API with zero downtime deployment.



Ability to experiment new business features thru A/B testing.



Background

The client, a renowned global banking institution operating in over 100 countries, faced challenges with a 25-year-old monolithic application serving as the online banking and payment platform catering to commercial clients. Outdated technology, underperforming user interface, and difficulties in adapting to evolving compliance and regulations led to lower growth in revenue and put pressure on client satisfaction. The service caters to over 100 countries and it was critical to maintain its availability across multiple time zones while adhering to stringent security requirements and complying with frequently evolving country-specific regulations.

Previous attempts of transforming the platform led to wrappers and overheads adding unnecessary layers of complexity and kept degrading the overall performance. It was difficult to keep up with necessary upgrades with a high maintenance cost. Even small improvements were getting expensive and time consuming. This challenge is often faced by businesses when transformation is approached only from a short-term technology perspective. Fundamentally, the business needs to take the lead and ownership, and the focus needs to shift from a technology refresh to digital business outcomes that would improve collaboration, agility, speed, and scale.

The As-Is State of the Platform

From a C-based client-server application, the banking platform transitioned to Java in the early 2000s, employing Java Applets. Despite its innovation and creative design patterns, this shift retained a monolithic structure. Over the next decade, features were added, resulting in many millions of lines code and 1000+ tables added onto the same platform.

After about a decade, global expansion prompted a move to a Web UI and simpler REST APIs. The implemented solution, spanning five years, introduced SOAP services, .NET generated HTML pages, and REST API layers, creating a complex architecture with too many hops in the call chains. Despite commercial success, the new UI and API faced criticism from new clients, and existing users were dissatisfied with its sluggish performance compared to competitors.

When this project began, the application constituted over 50 million lines of code and 3000+ tables in a single Database. Additionally, teams entrenched in Waterfall SDLC and traditional tools exacerbated issues. This case study highlights the hurdles of a transformative journey in a swiftly evolving digital landscape.

Modernization Goals

Altimetrik's SRE practitioners conducted a comprehensive organizational SRE assessment and laid out a structured plan to transform their TechOps by building automation capabilities to reduce the operational toil.

Develop a modern and responsive UI with high performing APIs for a seamless customer experience.



Decompose the giant single database into meaningful multiple databases.



Ensure 99.99% high availability and Zero Downtime globally.



Support for 5X of peak load with Auto Scalability and Auto Failover.



Transform the application into high performing microservices.



Accelerate time-to-market for compliance and regulatory updates.



Enable experimentation with features in controlled production environment.

The Solution: Applying the Digital Business Methodology (DBM)


DBM guides us to accurately capture the Business and Technology vision, focus on prioritized smaller (bite-sized) incremental results and accelerate delivery for faster completion.

- A 3-month discovery phase identified business needs and aligned them with tech teams.
 - 1st month - workshop and brainstorming with business and tech teams to build more collaboration and alignment.
 - 2nd month - solutioning using Domain-Driven Design (DDD) based decomposition of the application and data model.
 - 3rd month – refining and reviewing the solution and charting a prioritization path for an incremental approach.
- Utilized Domain-Driven Design (DDD) to decompose the application and data model. Prioritized features based on user personas and traffic patterns.
- Multiple business feature transformations and optimizations beyond app modernization. Overcome SDLC challenges, revamped DevSecOps processes, introduced containerization, and standardized private cloud setup.
- Implemented 60+ microservices, decomposed the giant database into 14 meaningful databases, and adopted an event-driven async architecture.

While outlining the solution, we simultaneously focused on addressing the core Software Development Lifecycle (SDLC) problems including revamp of the DevSecOps processes and tools and imparting SAFe Agile training across the board. Our team of practitioners set the DevSecOps and Agile tools with a planned training program executed for more several team members. More details on this part of the exercise can be found [here](#).

The client brought in Altimetrik as a strategic digital business partner with the deep technology knowhow and skills. This included deploying one run-ahead team and five Scrum teams for initial development, later expanded post phase 1. This is aligned with the core principle of the Digital Business Methodology, optimizing resource utilization without a significant upfront increase in headcount.

Leadership on the client side actively fostered collaboration and a change in mindset among teams accustomed to traditional approaches, leveraging quick wins to expedite the transformation journey and facilitate team expansion.



From a technical perspective, the following steps were implemented to enhance the system's robustness and flexibility:

- Employed Domain-Driven Design (DDD) for the creation of 60+ appropriately sized microservices and 14 meaningful databases.
- Utilized the Strangler Pattern to deploy new services on the existing UI while maintaining compatibility with new UI services.
- Developed an adaptive and responsive UI using Angular materialistic designs, ensuring a consistent codebase across various devices.
- Implemented stateless REST services run in Docker containers.
- Leveraged the optimal NoSQL structure of MongoDB for payment transactions data.
- Executed custom data replication with tuned performance and conversion from RDBMS to NoSQL.
- Adopted Kafka messaging for event-driven high performance and throughput.
- Established common libraries and standardization to ensure consistency and eliminate duplications.
- Introduced a custom-built Service Proxy to manage Strangler and common behaviors like A/B testing, service authentication, and routing.
- Set up infrastructure for Auto Heal and Auto Scale to handle up to 5X of transaction traffic load efficiently.

Altimetrik's practitioner-led approach also helped mitigate several project-level challenges such as process and standardization related delays, business and technology alignment, and other strategic decisions.

The Outcomes

The focus of this platform modernization initiative was to enable our client to fully grasp the inherent benefits of functioning as a Digital Business, specifically with a cutting-edge Digital Banking Platform. This serves as a prime example of how Digital Business represents a transformative leap beyond conventional, resource-intensive, siloed, and technology-centric digital transformation projects.

Below are some of the key outcomes:

- Pilot deployment of the new UI and 10 microservices in 6 months.
- Processing 2 billion payment transactions annually in near real-time.
- Under 2 seconds load time for the online banking dashboard.
- Faster API responses <250ms and bulk file processing validation within 5 minutes.
- Positive feedback from clients, indicating delight with the significantly improved performance and intuitive user experience.

This case study showcases how the application of the Digital Business Methodology successfully transformed the client's outdated banking platform, leading to enhanced performance, customer satisfaction, and readiness for future growth.

About Altimetrik

Altimetrik is a data and digital engineering services company focused on delivering business outcomes with an agile, product-oriented approach. Our digital business methodology provides a blueprint to develop, scale, and launch new products to market faster. Our team of 5,500+ practitioners with software, data, cloud engineering skills help create a culture of innovation and agility that optimizes team performance, modernizes technology, and builds new business models. As a strategic partner and catalyst, Altimetrik quickly delivers results without disruption to the business.