

elastic | BBVA

SUCCESS STORY

SPAIN | FINANCIAL SERVICES | ELASTICSEARCH

BBVA transforms global banking operations with Elasticsearch

BBVA is revolutionizing its banking services by leveraging Elastic to power real-time data search and applications. Elastic has become a key enabler for BBVA's personal banking platform, improving operational efficiency, enhancing the customer experience, and providing actionable insights across BBVA's extensive data ecosystem.

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Unrivalled search capability across extensive data stores

BBVA can now access 20 years of searchable transaction history and over 45 billion transactions, equating to 120 terabytes of data.

10x improvement in query response times

BBVA went from two to three seconds response times to 200 to 400 milliseconds for complex aggregations, enabling real-time visibility into customer financial data.

Long term cost-efficiency with scalable platform capabilities

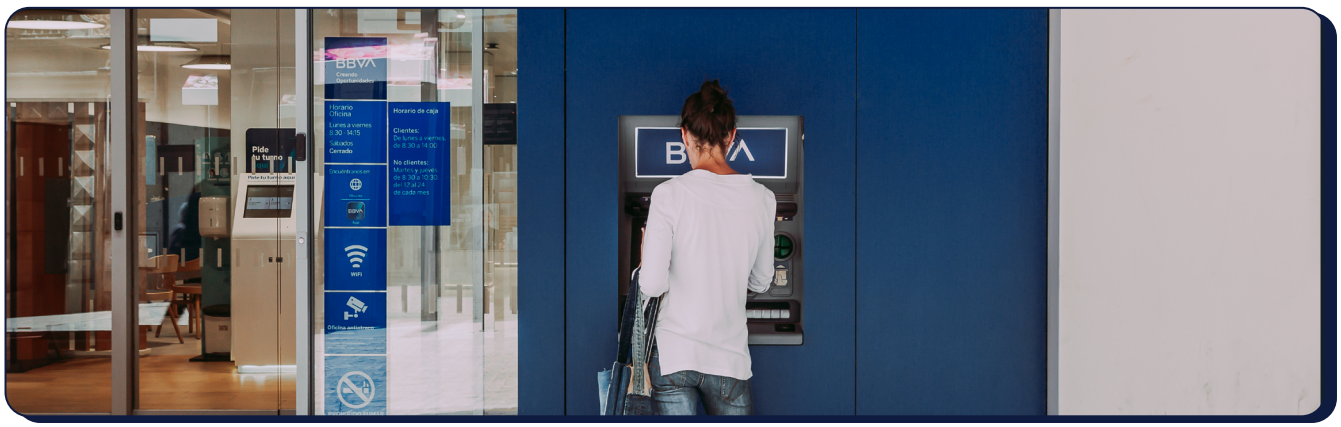
BBVA consolidated transaction data from 9+ systems, reducing mainframe load, infrastructure costs, operational costs, and developer overhead while improving performance.

From fragmented systems to a unified platform

In 2014, BBVA, a global financial services leader serving 80 million customers across more than 25 countries, faced a growing challenge: Customer transaction data was fragmented across disparate systems, limiting access to vital financial information.

David Jiménez Ausin, strategy senior manager at BBVA, explains: “There were around nine services, each containing information in different tables, on different systems with different ways of processing the information … it made it very difficult to have a complete and unified service.”

BBVA set out to create a single, comprehensive, and scalable platform for transaction inquiries, one that would also reduce mainframe load and operational cost. After extensive research of various technologies, the team turned to Elastic.



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A radical idea: treat banking data like logs

At first, it seemed unconventional. Elastic was widely viewed as a log search engine for IT use cases. But BBVA saw a parallel between a bank transaction and a system log: Both are sequences of events. That insight sparked a transformative idea: Put the transaction solution into a text search engine.

Using Elasticsearch, BBVA launched a small POC with just three years of data. The early results were promising: fast, text-based search across unified transaction data. Despite the technical challenges of the early Elastic versions (v0.9), the BBVA team worked closely with Elastic support to fine-tune the architecture for production.

“Partnering with Elastic Consulting was instrumental in addressing our bank’s complex technical challenges,” says Ausin. “By taking the time to clearly understand our strategic objectives, the Elastic team was able to align closely with our vision. Their consultants provided expert guidance throughout the engagement, helping us navigate key obstacles and achieve our desired outcomes.”

From proof of concept to production-scale deployment

Instead of querying DB2 systems for customer transactions, BBVA built an online insertion process where new transactions were immediately ingested upon customer login. This reduced DB2 loads, improved responsiveness, and dramatically cut infrastructure costs.

“We enabled online insertion,” says Ausin. “As soon as the customer logged in, the system was already querying Elastic, not DB2. That change alone brought significant cost savings and performance improvements.”

The Elastic-powered interface also introduced full-text search, advanced categorized text aggregation, and custom enrichment options, transforming how customers could explore their financial history. Ausin and his team could immediately see benefits to the bank’s customers. “Our customers could now search not just by amount or date, but by any keyword from any transaction field. That was a big leap forward,” he says.

> When we started, we were surprised; no one believed a text search engine could handle large-scale financial queries. But time has proven us right. I encourage other institutions to try Elastic. It could be a game-changer.
>
> **David Jiménez Ausin**
> Strategy Senior Manager,
> BBVA

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Powering global banking customer experience with scalable search

Elastic allowed BBVA to eliminate expensive, unscalable NoSQL setups for financial health queries. Aggregations previously too slow or too costly became performant and cacheable with Elasticsearch. Previously, customers were able to search and download 10 years of account history. Today, that window has doubled. Customers now have access to nearly 20 years of financial data.

Elastic's high-performance search engine enables fast, intuitive queries, from basic transaction lookups in 5 milliseconds to complex financial health summaries in under 400 milliseconds. These capabilities give BBVA real-time visibility into system health and application performance, ensuring reliable, responsive service across channels. Ausin says, "With Elastic, we have improved our search retrieval speed by 10x. What used to take 2 to 3 seconds in other systems now takes 200 to 400 milliseconds. So, we moved everything to Elastic."



Secure, scalable, and future-ready with Elastic on-prem

BBVA now runs a 150-node Elastic cluster in production, with autoscaling, advanced resource management, and built-in security. Security and compliance are essential, especially under evolving regulations like DORA, the EU's Digital Operational Resilience Act that came into effect in early January, 2025.

Ausin cites the importance of banking compliance: "Elastic now has a very robust security layer. It's been extremely valuable in handling security and compliance with DORA. Since we are a systemic bank, this is a top priority," he says.

BBVA is also piloting Elastic's frozen tier and searchable snapshots to optimize storage and reduce the number of active nodes while still offering full query access to older data.

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Fast innovation, low development cost

With the Elastic Stack's flexibility, BBVA can rapidly launch new features with minimal dev overhead. By keeping the development cost very low, Ausin's team can update the mapping, load the data, and put the system back online easily.

Elastic's adaptability also benefits internal teams, from teller operations to architecture groups, and positions BBVA to explore future AI use cases.

"Whether it's for customers or internal teams, we are very satisfied," says Ausin. Thinking about future use cases, Ausin is excited by Elastic's capabilities. "I believe Elastic still has a lot to offer. We see many positive surprises ahead in which we see great potential and believe that the integration of new features will be quite seamless with the help of the Elastic team," says Ausin.

From disruption to a digital foundation

What began as a relatively small POC with a text search engine became a core pillar of BBVA's global banking operations. Today, Elastic supports customer self-service, operational analytics, security compliance, and long-term cost efficiency, all at enterprise scale. Ausin has advice for anyone else considering Elastic: "Don't hesitate — just try it. Give it a chance!"

"When we started, we were surprised; no one believed a text search engine could handle large-scale financial queries," Ausin says. "But time has proven us right. I encourage other institutions to try Elastic. It could be a game-changer."

"Today, Elastic is not only used for querying transactions in our bank but also for many other projects, serving both customers and internal teams in our architecture department," he concludes.

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David Jiménez Ausin
Strategy Senior Manager,
BBVA

Start your free trial

See for yourself how your business can benefit from Elastic in the Cloud, with a free 14 day trial.

Get started

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