Case Study
Swissquote Bank

Achieving extreme efficiency and scalability with T24 in Java and the Temenos Platform Framework
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This study shows how Swissquote, the leading Swiss online financial services provider, has managed to secure extremely high levels of efficiency and scalability throughout its banking value chain by implementing Temenos T24 in Java and the Temenos Platform Framework.

The results are remarkable: as of late 2013, Swissquote served over 205,000 customers with a back- and middle-office office team of only 41 people, and 99.9% of its processes were completely automatized with straight-through-processing (STP).

The benefits of the core renovation have fallen through to the bank’s overall performance; after seeing its operating profit margin contract in the three years to 2010 (the year of the T24 go-live), Swissquote’s margins expanded in the first half of 2013, as costs remained in check while revenue grew.

T24 in Java and the Temenos Platform Framework have played a central role in boosting the bank’s cost-efficiency and revenues. First, by fully leveraging the industry-standards platforms of its pre-existing environment, Swissquote has achieved extremely high levels of automation, flexibility, scalability and vendor-independence.

Second, by freeing up Swissquote’s IT resources from mundane tasks, the bank has been able to re-focus on revenue-generating initiatives, exception management, and keeping its end-user virtual interface at the cutting edge - Swissquote is Switzerland’s most visited financial platform with 10 million pages displayed every day.

With Temenos T24 in Java and the Temenos Platform Framework, Swissquote is well set to preserve its position as a leader in innovation and customer experience in the virtual financial services space.

“At Swissquote, automation is essential; it increases the quality of the service for our clients, as well as the efficiency and the productivity of the bank. We chose T24 running in Java to give us a highly efficient and highly scalable platform to support our business. To give you a measure of efficiency, we run with 99.9% straight-through processing, and only have 41 back and middle office employees serving more than 205,000 customers.”

Lino Finini - Head of Back Office & Banking Applications - Swissquote
Swissquote – the leading Swiss online financial services provider

Swissquote, a licensed bank since 2001, is Switzerland’s leading provider of fully-integrated online financial and trading services. It has become an extremely efficient business, supported by Temenos T24 in Java and the Temenos Platform Framework. As of mid-2013, the bank served over 205,000 customers with a back- and middle-office office team of only 41 people, and 99.9% of its processes completely automatised with straight-through processing (STP).

Swissquote’s cutting-edge Java-based online customer portal, developed and continually enhanced by an internal team, has become Switzerland’s most visited financial platform with 10 million pages displayed every day. The portal offers customers unlimited access in real time to their accounts and provides intuitive and cost-effective electronic dealing in forex, shares, funds, options, warrants and bonds, linking customers to over 60 stock markets across the world and all major liquidity providers. It also delivers specific services to asset managers and corporate clients.

In the three years to 2010, right through the financial crisis, Swissquote continued to attract a lot of new business: its customer base nearly doubled in size, driving double-digit compound annual growth in assets under custody. However, not immune to the downturn in the financial markets, its operating income growth stagnated during this period. At the same time, the bank’s operating cost base inflated by 55% in the wake of an acquisition, putting the bank in a quandary: sustained client and asset growth on the one hand, contracting margins on the other.
Core replacement frees up skills for innovation

Conscious of the need to protect its margins - not least to fund continuous improvement of its unique virtual customer portal - Swissquote prescribed ongoing cost optimization and rigorous cost control as a priority for the bank, alongside the need to relentlessly invest and innovate in both front- and back-office technology. CEO Marc Bürki and CTO Paolo Buzzi both believed that the way to unleash innovation by Swissquote’s IT development team, while managing costs, would be to boost employee efficiency at all levels of the company.

Swissquote identified two principal ways in which to achieve this. First, the bank would need to streamline its processes and automate all regular and repetitive tasks, so as to free up back- and front-office staff to focus on business and technical innovation and on revenue-oriented and exception-focused tasks. Second, the bank would need to eliminate all resource-consuming technical and operational challenges typically associated with fast growth and innovation, on both the technical and business fronts.

As of 2010, the main barrier to achieving this was Swissquote’s legacy core banking system that was more of an accounting and performance management system than a complete core banking solution. It suffered from technical limitations in terms of architecture and functional evolution: excessively rigid, it required many specialized resources for development and integration tasks, thus limiting the bank’s scalability and responsiveness to changes in market and regulatory requirements. For instance, a team of four full-time specialists was dedicated to implementing new regulatory requirements in the system. Overall, the “black box” nature of the legacy system caused the bank to be more dependent than it wished on the vendor.

“At a time when Swissquote needed to protect its financial margins, the outstanding level of efficiency and scalability of T24 in Java allowed our IT development team to refocus its energy on revenue-generating initiatives while keeping operating costs in check.”

Paolo Buzzi - Chief Technology Officer - Swissquote
To address this major constraint to growth, Swissquote decided in 2010 to replace its antiquated core banking system with a modern third-party solution. Above all, the bank sought a cutting-edge core banking application entirely dedicated to powering the best possible banking business and which would be ready for immediate deployment on the latest generation of standard technical platforms which Swissquote already used.

A pre-requisite was that the new solution be Java-based to be able to fully leverage the industry standards on which Swissquote’s existing environment is built. This would ensure that the new core banking system fit right into the bank’s existing environment to create a seamlessly integrated, highly automatized and massively scalable value chain from end to end. Importantly, by addressing both these requirements, Swissquote would avoid the expense and dependence associated with taking on a vendor-specific technical platform.

Of the four vendors examined, Temenos was the only one to offer a fully operational industry-leading core banking application whose cutting edge functionality is fully implemented in the Java version. Also, Temenos was the only contender able to demonstrate a tried-and-tested framework – the Temenos Platform Framework – which mediates Temenos T24’s banking business capabilities and the commoditised technical resource management capabilities provided by Swissquote’s application servers. Moreover, only Temenos was able to present a comprehensive long-term technological roadmap for its platform framework.
The deployment model at Swissquote

At Swissquote, Temenos T24’s Java business logic resides and executes entirely in a JEE application server, which helps it connect extremely efficiently with the database and with the message broker which integrates T24 and Swissquote’s sophisticated front-end system. In this particular set up, the Temenos Platform Framework leverages Swissquote’s installed message broker rather than using the application server’s – which the bank could have chosen to do had it preferred.

Sources
1. Temenos T24 is database independent and supports, Oracle, DB2, SQL Server. Swissquote uses an Oracle database.
2. Using JEE server’s MDB capability: Message Driven Beans (MDB) are Java EE components that run T24 core banking functions asynchronously on separate threads to optimise the use of memory and processor to obtain excellent performance.
Outcome - extreme efficiency and scalability with minimal disruption

With Temenos T24 in Java and the Temenos Platform Framework, Swissquote was able to rapidly build a hyper efficient and scalable banking value chain which leverages the full power of Java and best-in-class application servers. The bank has effectively set itself up, with minimal disruption, for extreme efficiency and virtually unlimited expansion.

By fully utilizing the capabilities and standards of the Java Enterprise Edition (JEE) application server to unleash Temenos T24’s industry-leading business logic, the bank has significantly boosted the efficiency of its core banking system. Immediately upon go-live, Temenos T24 powered 99.9% straight-through-processing of the many tens of thousands of daily transactions for the bank’s hundreds of thousands of accounts.

As a result, the bank has achieved the primary objectives of its core system renovation: it has freed up staff to focus on innovation and revenue-generating tasks and removed the last barriers to sustainable growth which remained. As of mid-2013, Swissquote’s growing customer base totalled 205,000 but its middle- and back-office employee count stood at just 41. This outstanding level of efficiency is reflected in the bank’s financial performance: in the first half of 2013, the bank’s net revenues increased by 5% year over year while operating expenses remained flat, causing the operating margin to improve by 20%.

Crucially for the future, Swissquote now possesses an end-to-end banking platform with excellent scalability, given that the deployment will be able to use as many application servers running Temenos T24 as necessary. Swissquote is confident that, despite the choppy waters of today’s financial markets, it is well set to grow the variety and complexity of its offering and continuously improve its customer portal while preserving its margins.

“Leveraging the Temenos Platform Framework, T24 in Java was seamlessly fitted into our pre-existing standards-based systems environment. This was a very valuable achievement for us as we wanted to preserve our cutting-edge virtual customer experience while substantially increasing the level of innovation, efficiency and scalability of our entire business. Now that we have accomplished this, we feel that we have a powerful platform for profitable growth for the years to come.”

Lino Finini - Head of Back Office & Banking Applications - Swissquote

Sources
3 The JEE application server manages the technical resources for connectivity, scalability, clustering, database connectivity, and security/authentication which applications need to run as efficiently as possible.
4 The bank can choose whether or not to leverage the application servers’ clustering capabilities.
T24 in Java: the benefits of a standard platform

1. By fully utilizing the standards and capabilities of the JEE application server, the bank can significantly boost the productivity of its core banking system. The Java version of T24 utilizes the application server’s facilities to their utmost; it executes entirely within the JEE Enterprise Java Bean container and is only dependent on JNDI, JMS and JDBC.

2. As T24 in Java has been developed according to the open, industry-standard JEE specifications and standards, it can be deployed in any JEE application server, making it vendor- and platform-independent. We test the product daily in WebSphere, WebLogic and JBoss, and could approve for another JEE server on demand.

3. As the Temenos Platform Framework uses industry-standard JEE specifications and standards, the bank can leverage its existing commodity JEE application server skill set, sparing the bank the need to hire or train vendor-specific technical specialists, thus generating substantial cost-efficiencies. Furthermore, it reduces risk by reducing the bank’s dependence on specific skill sets.

4. Because a Temenos Platform Framework deployment can use a virtually unlimited number of JEE application servers, T24 in Java provides excellent scalability and exceptionally strong resilience. This can be accomplished with two types of deployment, represented in the diagrams below. In the first setup, by executing T24 business logic inside the standard JEE application server, the clustering capability of the JEE application server is leveraged, giving excellent scalability and resilience through multi-processing. In the second setup, JEE application server clustering configuration is not used and the workload balancing is done through the use of an external message broker (JMS or WebSphere MQ).

5. The Java environment comes with many integration facilities such as connections with databases or messaging systems, and thus provides the bank with a high level of flexibility. A real advantage of the Temenos Platform Framework is that it uses Java Database Connectivity (JDBC) technology provided by the JEE application server and so can benefit from connection pooling making the database access faster.

Sources
The Temenos Platform Framework and enterprise architecture

At any time, a bank will have multiple projects changing its information system. Without ensuring that each of these projects not only achieves its own ends but also adds to the information system as a whole, it is very easy for the bank to be much less than the sum of its parts. Banks need to oversee all changes to their information systems to ensure that they optimise the bank as a whole. This is called enterprise architecture. At Temenos, we believe that the architecture of our products is, and always has been, a great strength. The Temenos enterprise architecture consists of six frameworks covering Integration, Interaction, Platform, Component, Design and Data.

The Temenos Platform Framework as implemented by Swissquote enables Temenos products to concentrate on best of breed banking function rather than duplicating existing middleware. It enables the source code to run as a native application in Java. The product - in this case Temenos T24 for core banking - runs as a message driven bean, and the JEE application server (WebSphere, WebLogic or jBoss) is responsible for the resource management. Temenos only depends on JMS and JDBC (and JNDI) to run in a JEE application server.

Temenos also runs in the Azure cloud and supports public, private and hybrid cloud deployment. Temenos is committed to both cloud and on premises deployment so as to provide the lowest cost platform for our banking customers.

Together, the six frameworks enable Temenos products to run on multiple platforms (Java, C and the Cloud) in a fully modular and componentised packaging, with an event-based code-free integration capability, built, configured and changed using model driven development, for deployment with both in-memory OLTP and column store optimised OLAP data models and servicing user agents specifically built for banking roles going across Temenos, non-Temenos and third party services.6 This makes Temenos products a world-class choice for standard software for any bank of any size.

Sources
6 As of mid-2013, the following elements of the Enterprise Architecture were still under development: in-memory and column store capabilities, and packaging T24 as OSGi bundles rather than a single JAR.
About Temenos

Founded in 1993 and listed on the Swiss Stock Exchange (SIX: TEMN), Temenos Group AG is the market leading provider of mission-critical software systems to retail, corporate, universal, private, Islamic, microfinance and community banks, wealth managers, and other financial institutions.

Headquartered in Geneva with 59 offices worldwide, Temenos software is proven in over 1,500 customer deployments in more than 140 countries across the world. Temenos’ products provide advanced technology and rich functionality, incorporating best practice processes that leverage Temenos’ expertise around the globe. Temenos customers are proven to be more profitable than their peers: in the period 2008-2010, Temenos customers enjoyed on average a 30% higher return on assets, a 46% higher return on capital and an 8.5 percentage point lower cost/income ratio than banks running legacy applications.

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