Financial services company SIA provides Italy’s national payment platform. When its platform faced growing transaction volume and short-term peaks in demand, SIA decided to build a new solution based on Red Hat OpenShift Container Platform and open source technologies. With its new platform, SIA gained the scalability and flexibility to support business growth. SIA also eliminated planned downtime and simplified management to focus on more valuable work.

“With OpenShift Container Platform, we have the right technology to deliver our payment platform and to continue improving our services. No other solution provider in Italy can offer the same capabilities that we can.”

Stefano Menotti
Head of Digital & Data Driven Solution, SIA

Software and services
- Red Hat® OpenShift® Container Platform
- Red Hat Consulting

Hardware
- HPE BladeSystem servers
“We chose Red Hat OpenShift Container Platform because it was the best container orchestration solution to manage the peaks in demand we’re facing.”

Matteo Combi
Solution Architect,
SIA

Building reliable, scalable payment infrastructure

With annual revenues of more than €600 million, Italian-based technology company SIA is one of Europe’s leading providers of technology infrastructure and services to the financial sector. SIA’s offerings simplify sending and processing payments for banks, other financial service providers, and national tax authorities. It processes and clears more than 13 billion transactions per year across a complex banking ecosystem that includes ATMs, digital and mobile payments, credit cards, point-of-sale solutions, and real-time gross settlement.

One of SIA’s recent projects focused on creating a centralized payment platform for a European country’s government. All of the country’s credit institutions and payment service providers are registered in the platform and linked to the country’s central payment hub. SIA implemented this standard in its payment platform solution, a unique offering that provides a simpler, more secure way for citizens to complete financial transactions with government entities.

Originally built as a monolithic Java™ application running on Microsoft Windows, the platform was unable to respond to peak demand in payment processing requests — for example, before quarterly tax deadlines. To meet strict scalability and reliability requirements set by the customer, SIA decided to shift to a microservices- and container-based approach. This approach would also help SIA add new features and integrate payment types already supported by the customer’s payment platform, such as PayPal, without affecting other areas of the application.

However, SIA needed a platform that could effectively support this new approach and accommodate changing demand more efficiently.

“Over the last six years, transaction demands have grown substantially, so we decided to move to microservices and containers,” said Matteo Combi, Solution Architect at SIA. “We needed to guarantee high performance and availability, and we could not afford to interrupt services with any downtime for maintenance.”

Adopting a microservices architecture on a new platform

SIA worked with an external consultancy to assess its needs and provide recommendations for its new platform. Based on the firm’s advice, the service provider decided to build a solution using the Akka open source toolkit and runtime and the Scala programming language to build a microservices-based architecture running on Red Hat OpenShift Container Platform.

“We had already used Red Hat solutions for other projects and were very satisfied with them,” said Stefano Menotti, Head of Digital & Data Driven Solution at SIA. “We wanted to partner with a company like Red Hat because we know we can rely on them. We chose OpenShift Container Platform because it was the best container orchestration solution to manage the peaks in demand we’re facing.”

With help from Red Hat Consulting to set up its infrastructure, SIA now runs its payment application on the platform in its datacenter, comprised of HPE BladeSystem servers. After its initial deployment, the service provider is currently developing new, cloud-native applications on OpenShift Container Platform.
Meeting demand with flexible, responsive technology

Gained scalability to handle growing, changing demand

SIA’s new OpenShift-based platform helps the service provider better support rapid growth in payment transaction volume with fewer resources. Its microservices- and container-based architecture scales to easily handle peaks in demand by adding and reallocating resources without delays or complex provisioning processes.

"Last year, we had 12 million transactions, but in just the first three months of this year, we had 13 million transactions. We recently reached six million transactions in a single month. Our target for the year is 40 million transactions," said Menotti. "We were worried about that kind of volume on the previous system, but we feel that the new platform is much more stable and won’t limit our growth.”

Improved operational efficiency with DevOps and automation

Launch of its new platform was the first large project that SIA successfully completed using a DevOps approach. With guidance from Red Hat Consulting, SIA adopted this more flexible, collaborative approach to improve efficiency and enhance its adoption of open source technology with a parallel work process.

"There are no more hard boundaries between the project’s developers and our operations teams," said Combi. "We’ve seen the success of a more cooperative way of working. Even in a very structured company like SIA, approaches like DevOps and continuous integration and continuous delivery [CI/CD] are being used to make development easier and more efficient.”

Additionally, OpenShift Container Platform automates management of many processes and features, requiring less manual intervention by operations teams to ensure stable, business-scale performance.

"Before, our operations staff were working at 150% of their contracted time," said Combi. "Now, with a simpler environment, we have the same number of staff managing a much higher number of transactions within their planned work schedules.”

Eliminated planned downtime

SIA makes minor changes to its application to correct minor issues with a payment function or respond to a change request. Previously, these changes would require system downtime, typically an hour or more each month.

With its new platform based on Red Hat OpenShift Container Platform, SIA can make changes in real time, eliminating planned downtime to improve service availability for its customers. Greater flexibility to make changes without interrupting its systems also helps the company’s IT teams be more responsive to requests from the business for new features or changes.

"The design of our services is always changing," said Combi. "With our new, more streamlined platform management capabilities, we have increased availability and improved our SLAs [service level agreements] for responding to these change requests.”
Expanding integration to continue improving development

SIA plans to extend its continuous integration approach to add continuous testing capabilities that will further improve its development efficiency and launch rate of new features.

"With OpenShift Container Platform, we have the right technology to deliver our payment platform and to continue improving our services,” said Menotti. “No other solution provider in Italy can offer the same capabilities that we can.”

About SIA

SIA is a European leader in the design, creation, and management of technology infrastructures and services for financial institutions, central banks, corporations, and the public sector in payments, payment cards, network services, and capital markets. SIA Group provides its services in 50 countries and also operates through its subsidiaries in Austria, Croatia, Czech Republic, Germany, Greece, Romania, Serbia, Slovakia, Hungary, and South Africa. The company has branches in Belgium and the Netherlands, as well as representation offices in the UK and Poland.