

# novobanco delivers personalized digital experiences to customers

## novobanco

### Software and services

Microsoft Azure  
 Red Hat® OpenShift®  
 Red Hat Consulting  
 Red Hat Training

### Partners

Microsoft

Portugal's novobanco sought to reinvent banking with personalized, digital customer experiences based on open banking practices. To support this strategy, the bank decided to migrate to a container- and microservices-based application infrastructure. Microsoft Azure Red Hat OpenShift, a jointly managed solution, helped the bank adopt a hybrid environment for new and existing applications. Now, using continuous integration and continuous delivery (CI/CD) and DevOps approaches, novobanco has increased its digital services adoption, reduced time to market for applications, and improved partner integration using open banking application programming interfaces (APIs).



### Financial services

**4,193** employees  
**333** branches

### Benefits

- ▶ Achieved 20% year over year (YOY) mobile growth
- ▶ Increased responsiveness with scalable, vendor-neutral hybrid infrastructure
- ▶ Improved integration with third-party partners
- ▶ Enhanced technology adoption with expert support and guidance

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**Manuel Domingues**  
 CIO, novobanco

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**Manuel Domingues**  
CIO, novobanco

## Rethinking physical and digital banking experiences

novobanco operates a vast network of branches and business centers across Portugal, complemented by its novobanco Linha Direta telephone banking service and digital banking offering, novobanco Online.

Shortly after American equity firm Lone Star Funds acquired 75% of its capital in 2017, the bank engaged management consulting firm McKinsey & Company to help define a three-year IT strategy.

“We needed to change the way we developed our offerings to speed time to market,” said Manuel Domingues, CIO, novobanco. “Achieving that goal meant addressing four key areas of our business to increase efficiency: our technology, our processes, our organization, and our culture.”

Working with McKinsey, the bank planned a new approach to digital business based on cloud computing and big data, supported by a microservices-based architecture and DevOps practices. This new approach would not only help reduce operating costs but also support entry into new digital markets with open banking application programming interfaces (APIs).

“By changing how we acquire and engage with our customers, across physical and digital channels, we could meet our larger goal of expanding our customer base,” said Domingues.

## Building a managed, secured environment for application development

After searching for a cloud platform, novobanco chose Red Hat OpenShift for its local enterprise support and multicloud capabilities.

“Red Hat OpenShift was the ideal choice to be able to deliver customer services flawlessly while switching between hosting containers on-premise and in the cloud,” said Domingues.

The bank worked with Red Hat Consulting to test several use cases, including running a microservice in Red Hat OpenShift using the Spring Boot Java™ framework, a DevOps pipeline for automating development processes, and a proof of concept (POC) demonstrating digital channel interactions.

Next, the bank deployed Microsoft Azure Red Hat OpenShift in production and began migrating its applications—as microservices—to this on-premise environment, jointly managed by Red Hat and Microsoft. Red Hat’s single sign-on (SSO) technology helps secure novobanco’s microservices, integrating with the bank’s existing Azure Active Directory servers to validate user credentials and extract identity information.

The bank now uses its container environment—as well as React.js, an open source JavaScript user interface library—to design and deploy low-code front-end applications, such as its smartphone app.

## Focusing on innovation for customers and partners

### Reduced time to market for digital services

With a continuous integration and continuous delivery (CI/CD) approach supported by DevOps processes and automation, novobanco can deliver new, personalized services to its customers faster. For example, the bank recently developed new push notifications for transaction validation that improve security and reduce messaging costs for customers. Additionally, using Red Hat and Microsoft’s cost-effective, jointly managed service also helps novobanco stay productive by mitigating time-consuming infrastructure maintenance tasks.

The bank is already seeing positive outcomes from spending less time on routine delivery processes and more time on innovation, including 20% year over year (YOY) growth in mobile interactions and a 7% YOY increase in the number of active digital customers. As the result of a 165% YOY increase across most of its portfolio, digital now makes up more than 1/3 of the bank's total product sales.

As part of this approach, the bank is developing frameworks for various needs—such as simulations or integration—with defined patterns that can be reused by more than one development team.

### **Improved responsiveness with scalable, supported hybrid infrastructure**

With plans to design all new applications to be cloud-native, novobanco can use its vendor-agnostic Red Hat OpenShift container environment to prevent lock-in to specific cloud providers. The flexibility to move workloads between clouds will help the bank cost-effectively scale to meet demand. Additionally, developers no longer need to build applications to run in specific environments, improving productivity and supporting DevOps collaboration.

“With Red Hat OpenShift, we can move workloads between on-premise and off-premise environments without needing to change any code,” said Domingues. “Some applications will remain on premise for now, such as those with specific regulatory requirements, any that might be affected by latency, or any that have not yet been optimized for microservices or the cloud. When we're ready, we have the flexibility to move them to Azure Red Hat OpenShift without any service interruptions or outages.”

### **Improved support for integration with third-party partners**

Supporting its open banking API approach with a scalable, secure integration process will help novobanco enter new digital banking markets by partnering with other financial services organizations.

“Running containers and microservices on Red Hat OpenShift allows us to support open banking APIs as well as integrations with SaaS or PaaS technology solutions from partners,” said Domingues.

### **Enhanced technology adoption with expert support and guidance**

Engaging Red Hat Consulting and participating in Red Hat Training on Red Hat OpenShift helped the bank's teams quickly gain the necessary skills to support its digital strategy. In addition to support during the POC stage, Red Hat consultants helped stabilize the bank's OpenShift cluster in production, set up a cluster for testing configuration changes, and manage platform implementation and upgrades. For example, the bank continues to work with Red Hat for infrastructure, development, and application architecture optimization.

“Red Hat Consulting helped us take advantage of best practices so that we could focus on developing solutions and integrations that meet our business needs and delivering new features to market faster,” said Domingues.

### **Enhancing hybrid approach to continue digital services journey**

novobanco plans to continue using Red Hat OpenShift as the foundation for both legacy and new applications, with a goal to shift up to half of its modernized applications to run in a multicloud environment. The bank is also looking to adopt Red Hat Runtimes, a set of lightweight runtimes and frameworks that are ideal for highly distributed microservices architectures.

“Hybrid infrastructure and DevOps are changing the way we develop our services and applications, and Red Hat OpenShift is an essential part of our journey to digital delivery,” said Domingues. “As we evolve, we expect to achieve further scalability and reliability, among other benefits.”

## About novobanco

novobanco is a reference in the Portuguese financial system, recognized by its high standards of service quality and commercial dynamics with which its clients, individuals, companies, and institutions are served. It addresses a broad range of clients' financial needs, acting in a transversal way in all areas of financial services, such as retail and corporate banking, asset management, and insurance. <https://www.novobanco.pt/>



## About Red Hat Innovators in the Open

Innovation is the core of open source. Red Hat customers use open source technologies to change not only their own organizations, but also entire industries and markets. Red Hat Innovators in the Open proudly showcases how our customers use enterprise open source solutions to solve their toughest business challenges. Want to share your story? [Learn more.](#)



## About Red Hat

Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers develop cloud-native applications, integrate existing and new IT applications, and automate and manage complex environments. [A trusted adviser to the Fortune 500](#), Red Hat provides [award-winning](#) support, training, and consulting services that bring the benefits of open innovation to any industry. Red Hat is a connective hub in a global network of enterprises, partners, and communities, helping organizations grow, transform, and prepare for the digital future.

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