

# Building a digital foundation for differentiated banking

ABSA—a South African-based financial services group offering personal and business banking, credit, investment, and wealth management services—is transforming itself by refactoring its existing services and adopting a modular microservices-based architecture.

In their talk, [Transforming monolithic architecture to microservices architecture with Red Hat](#), at Red Hat Summit 2021, the ABSA team describes how they built an environment to quickly introduce new digital channels and also integrate with fintech, using:

- [Red Hat OpenShift](#)
- [Red Hat Data Grid](#)
- [Red Hat 3scale API Management](#)

## Coreless banking: Accelerating time to market for key customer journeys

As customers increasingly look to their devices to assist in their daily lives, financial services businesses need to deliver simple, relevant, and easily accessible products and services when and where customers need them. Responsive digital offerings are at the core of this vision, creating a flexible operational model that allows financial services to fulfill new customer expectations while overcoming the typical challenges associated with integrating cross-functional business processes and the critical systems that support them.<sup>1</sup> Implementing a hybrid cloud architecture is essential to achieving this business fluidity—requiring a technological foundation that allows both legacy and new applications and services to be modular business components that can be combined, orchestrated, and recombined in a way that is adaptable to the ever-changing markets in which banks operate. This distributed architecture is described as coreless banking.

Coreless banking is the delivery of banking services that are not dependent on traditional core systems. It is a new way to build a digital customer journey from pre-defined modular business services. Unlike monolithic applications and services—where all software systems are tightly integrated—in coreless banking, there is no dependence on isolated core banking engines. Every banking service is defined as an individual, modular business function, defined and maintained independently from all other functions so that banks and fintech partners can continue to innovate and then combine updates.

## Architect your business to be flexible and resilient

The goal of many current modernization efforts is to break down monolithic architectures by isolating core system processing from the bank servicing functions. Often, applications and services have been integrated into these core banking engines over decades. Refactoring monolithic codebases into smaller, more modular business functions (also known as microservices) results in cloud-native applications and services that are independently scalable. And they can be developed, shared, and maintained across teams—alleviating the hindrance of technical debt that monolithic core systems often have on digital business and innovation in banking.

An IT platform provides the ability to connect and coordinate these modules across the business, orchestrating the combinations and recombinations of business functions (defined in modules) to address different customer journeys. When standardized across all business functions, an IT platform can also reduce risk because of its inherent security and policies that can be consistently applied throughout or even be specifically adapted to each developer role.

The business of banking is expected to continue to change with technology advances, regulations that are yet to come, changing customer lifestyles, and more. Banks will need to be able to quickly adapt their products and services to remain relevant. Increasingly, the legacy architectures that have defined banking experiences for decades are inhibiting the industry's ability to address the

<sup>1</sup> Rohit Bhapkar, Rohit, et al. "Disrupting the disruptors: Business building for banks." McKinsey & Company, April 2021.

This [on-demand webinar](#), “A cloud-native approach to accelerate BIAN implementation, in the open source way,” describes how Red Hat can help automate continuous integration and continuous delivery (CI/CD) of semantic APIs and business service domains.

expectations of the digital future. Assembling ready-made modular capabilities allows banks to reduce time-to-market, accelerating the development and delivery of responsive digital products and services via new channels and integrated fintech offerings.

### **Build an innovation environment to keep pace with business change**

Banking products and services must integrate security by design, support scalability to respond to the needs of the market, and remain relevant to customers. Building an agile technology environment that can meet changing requirements requires a platform design for modular, flexible architecture. A bank’s IT platform needs to be able to adapt to new demands, modern development tools, and industry standards, which enforce fault tolerance to minimize unplanned downtime and compliance to regulations. An open source platform—tested to enterprise standards for coreless banking—makes it possible for loosely coupled microservices and modular business functions to be quickly composed with existing tools, as well as new technologies from open source communities and partners.

Creating new digital experiences quickly also means that these applications will better align with changing business conditions, offering differentiated customer experiences and meeting compliance requirements. This kind of flexibility allows banks to build optimized application delivery pipelines that can more efficiently meet the market needs and take advantage of new customer opportunities.

Building efficiency into application delivery pipelines is achieved, at least in part, by automation. Automation requires some degree of standardization to address excessive compatibility burdens across different application environments. Standardizing IT environments also reduces incompatibility with third-party components and prevents common developer bottlenecks associated with technology versioning.

An open platform with iterative, microservices-based architectures—that are based on application programming interfaces (APIs), real-time event streams, and loosely coupled modular components—supports the standardization needed for an automated application delivery pipeline. This pipeline has the benefit of consistently supporting any environment, without requiring code rewrites. As a result, development teams can write their code once, run it anywhere, and adopt third-party components from any originating source, avoiding constraints imposed by vendor lock-in, for leading product and service innovation.

### **The BIAN standard for business agility and compelling experiences**

With an enterprise open platform supporting an architecture optimized for digital application pipelines, the [Banking Industry Architecture Network \(BIAN\)](#) business framework provides a common, semantic language to connect, compose, and reuse modular business functions. The BIAN definitional standard simplifies the integration patterns. Associated APIs are defined to this standard, alleviating the issues of brittle integration between data streams, services, and monolithic applications. And with this standard, technology teams do not have to manually manage integration patterns—instead, they can automate these patterns, accelerating the experimentation, discovery, and innovation for curating compelling digital customer experiences.

### **How Red Hat helps support the adoption of coreless banking**

To support the realization of coreless banking, Red Hat has joined industry efforts to bring open source technology, innovation, and standards to make a prototype with the BIAN semantic framework. Based on loosely coupled integrations and service-oriented architectural principles for hybrid cloud environments, Red Hat® OpenShift® and Red Hat Application Services are used in this prototype to:

- ▶ Automatically orchestrate containerized banking modules (also known as service domains) as part of a continuous integration/continuous delivery (CI/CD) pipeline.
- ▶ Implement a cloud-native environment for service domain operations to run as executable business functions (also known as cloud-native runtimes) that can be used on any cloud and datacenter the bank prefers.
- ▶ Manage state transitions between loosely coupled events for real-time integration across service domains.

Red Hat technology helps banks build a digital foundation to streamline the development process for coreless banking, providing a consistent environment for containerized digital services, from definition through to the deployment. With built-in security considerations, Red Hat OpenShift is an enterprise-ready Kubernetes container platform with full-stack automated operations to manage hybrid cloud and multicloud deployments. Red Hat OpenShift is optimized to improve developer productivity and promote innovation, with preconfigured infrastructure to curate customer journeys from defined business modules. With complete automation that scales both up and out, technology teams are able to quickly meet the needs of the business as it evolves. And with an open platform with cloud-native tooling, banks can incorporate certified partners and third-party solutions to readily augment banking services to extend digital customer journeys.



Coreless banking allows banks to reduce the time-to-market to release services to customers, make business integration both faster and simpler for the entire enterprise, and to build innovative products and services—whether fintech, in-house or Software-as-a-Service (SaaS) for differentiating customer journeys. With Red Hat, banks have a leading open source hybrid cloud platform, cloud-native technologies, and security capabilities that are built for enterprise banking systems, supported, and hardened for the financial industry.

To learn more about how Red Hat can help you realize coreless banking, please contact us at [mercury@redhat.com](mailto:mercury@redhat.com).



### About Red Hat

Red Hat helps customers standardize across environments, develop cloud-native applications, and integrate, automate, secure, and manage complex environments with [award-winning](#) support, training, and consulting services.

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