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CASE STUDY

Driving Agility and Innovation: Vivo's OSS Modernization Journey with Amdocs

Building a Cloud-Native Foundation to Accelerate Service Delivery, Enhance Customer Experience, and enter the Digital Services Era

vivo

About Vivo Brazil

Vivo is the commercial brand of Telefônica Brasil, the leader in the Brazilian telecommunications market, with more than 120.2 million accesses. In the mobile segment, Vivo has 106.4 million accesses and leads the market with a 37.8% share. In fixed connectivity, Vivo operates the country's largest fibre network, covering more than 32.4 million homes. Telefônica Brasil is part of the Telefónica Group, one of the world's largest communications groups.

The company is strategically focused on expanding its advanced network capabilities, specifically through the continued deployment of 5G coverage and its Fibre-to-the-Home (FTTH) footprint.

Vivo is leading Telefonica's Autonomous Network Journey in Brazil, highlighted by the ambitious Fractal project, which targets AI/ML-driven planning and creation for the 5G transport network. The Fractal project has successfully reached TM Forum Autonomy Level 4 in Network Creation within this domain. This operational excellence demands a corresponding high-performance foundation in the Operations Support Systems (OSS).

This modernization effort, which unifies service inventory, fulfilment, and activation, is critical as it provides the necessary industrial-grade execution fabric to operationalize the AI-driven designs and support Vivo's roadmap toward higher TMF Autonomous Network levels.

The new OSS core is therefore essential to achieving faster time-to-market for new digital and 5G services.

The challenge: Achieving true agility through modernization beyond legacy OSS

Vivo launched a multi-year strategic program to modernize its OSS stack, addressing critical limitations in scalability and agility. The existing Amdocs CES 9.3/10.2 OSS posed significant challenges, requiring an upgrade to support exponential growth in fixed and mobile services. Additionally, several legacy components needed replacement to enable future-ready operations.

These replacements were essential to securing a future-proof, flexible platform that enables operational efficiencies, improves time-to-market for new digital and 5G services, and will prepare Vivo to advance toward higher TM Forum Autonomous Network levels across their complete network.

The strategic imperative: modernizing the OSS stack

The core of the program involves replacing critical components of the older Amdocs CES 9.3/10.2 architecture with the latest cloud-native releases (CES2X). The specific applications targeted for replacement included:



Service Order Manager (**SOM**), used for fixed product fulfilment.



Unified Service Manager (**USM**), which held the inventory of fixed services.



Universal Activator (**AUA**), responsible for mobile product requests to activation.

These legacy modules are being replaced by the cloud-native **Amdocs Service Orchestration (SVO)**, which manages fixed product fulfillment and service inventory, and A**mdocs Service Activation (SVA)**, which handles mobile activation.

The modernization is driven by several critical business objectives, echoing the needs of global operators engaging in large-scale transformations:



Achieving Architectural Agility: The switch to CES2X is a fundamental architectural shift to a cloud-native, microservices-based architecture. This transformation allows Vivo to simplify operations, gain access to cloud-native services like agility and automation, and implement Continuous Integration/Continuous Delivery (CI/CD) capabilities.



Strengthening Operational Readiness: The new solution establishes a future-proof OSS architecture by eliminating reliance on proprietary technologies and embracing open, standards-based components. It leverages modern, open-source frameworks and databases to enhance flexibility, reduce vendor lock-in, and enable cost-efficient scalability for evolving business and technology demands. This prepares Vivo for 5G SA, FTTH, and Network-as-a-Service (NaaS) roadmaps in Brazil.

By consolidating fulfillment, inventory, and activation onto an integrated, modern stack, the initiative directly supports strategic network operations goals, including faster rollout of new services, enhanced system resilience, and improved time-to-market.

Implementation Approach and Migration Strategy

Core Replacement Modules

The solution focuses on modernizing three existing Amdocs applications with two new cloud-native, microservices-based products.

Amdocs Service Orchestration (SVO) - Manages Service Decomposition, Service Orchestration, Service Order Tracking & Management, and the Service Inventory for wireline (fixed) products.

Amdocs Service Activation (SVA) - Handles Service Decomposition, Service Activation, and Order Tracking & Management for wireless (mobile) products.

Key Cloud-Native Components and Technology

The new SVO and SVA products introduce a cloud-native architecture deployed on-premise.

Deployment Platform: SVO and SVA were deployed on the **Red Hat OpenShift Container Platform (OCP)**, which itself runs over bare metal servers.

Database Shift: The solution eliminates reliance on proprietary technologies by adopting open-source and modern database frameworks. It introduces a hybrid data architecture combining relational and NoSQL models to enhance scalability, flexibility, and performance for service inventory and operational processes.

APIs and Integration: The new components are designed to be standards-aligned, notably adopting **TM Forum Open API** standards, such as **TMF638** for inventory querying, replacing legacy USM services.

Messaging: The integration approach transitions from a traditional message queuing system to an event-driven architecture using a high-performance streaming platform. This enables real-time order event processing, improved scalability, and more resilient communication between ordering and orchestration components.

DevOps: The architecture supports **CI/CD** capabilities, allowing automated pipelines for deployment and the ability to test and deploy individual microservices using Kubernetes.

Implementation and Migration Scope

The project includes complex data and process migration tasks:

- Service Inventory Migration
- In-Flight Order Migration
- Automation Tool Adaptation
- Testing - E2E regression testing, Business User Acceptance Testing, and Non-Functional Testing.

Category	Description/Scope	Migration Action & Goal
Category 1	Orders pending at **critical customer-facing steps** (e.g., awaiting technician appointments or scheduled portability dates)	Critical pending orders are neutralized internally and later resumed in the new system at the exact milestone, ensuring continuity without impacting customer experience.
Category 2	Orders pending at steps **before reaching critical customer-facing points** (e.g., fallouts encountered before scheduling or before the "Point of no Return").	Orders halted before customer-impact stages are safely canceled and reprocessed in the new platform, preserving integrity and avoiding service disruption.
Category 3	**Problematic orders** that have **surpassed the "Point of No Return".**	Problematic orders beyond the Point of No Return are resolved collaboratively before migration, enabling a clean transition and uninterrupted service delivery.

Solution Architecture: Cloud-Native OSS Core

The implementation is structured as an approximately **nine-month program** from initiation to Go Live and stabilization, requiring alignment during the initial discovery stage. The core approach involves deploying the new **SVO** and **SVA** software using a cloud-native, microservices-based architecture on the **on-premise Red Hat OpenShift Container Platform (OCP)**. Key activities include rigorous testing: End-to-End (E2E) Regression Testing (300-400 scenarios), Business User Acceptance Testing (BUAT), and Non-Functional Testing (NFT). A major component is the data migration, specifically moving the **Service Inventory data from the legacy USM to SVO**. Critical attention is paid to the **in-flight wireline orders migration**, using special cancellation tools to avoid customer impact during the cutover and ensure services are available for migration.

Data Migration

In the migration plan, **service inventory (service instances) is transformed to the target data model aligned with TMF standards**, specifically leveraging TMF SID concepts and TMF Open APIs.

The service inventory stores the **service instances** related to the services provided by the operator. In Vivo context, the service inventory stored fixed services data and was previously managed by **USM**. This data is being migrated and transformed into the new **SVO** inventory. The migrated data includes the **service instances**, which are structured according to the target data model aligned with **TM Forum (TMF) entities** (SID logical information model). The process will require a staging DB provided by Vivo, and the migration process will be executed by Amdocs.

The key principles are:

- **CFS/RFS decomposition** remains catalog-driven and aligns with TMF SID hierarchy.
- **TMF Open APIs** (e.g., TMF638 Service Inventory, TMF641 Service Order) govern integration.
- Data migration transforms USM schema into **SID-compliant JSON** for storage.

In-Flight Order Migration

The migration of **in-flight wireline orders** during theVivo OSS modernization is categorized into three groups, with the strategy designed to ensure no negative impact on the final customers.

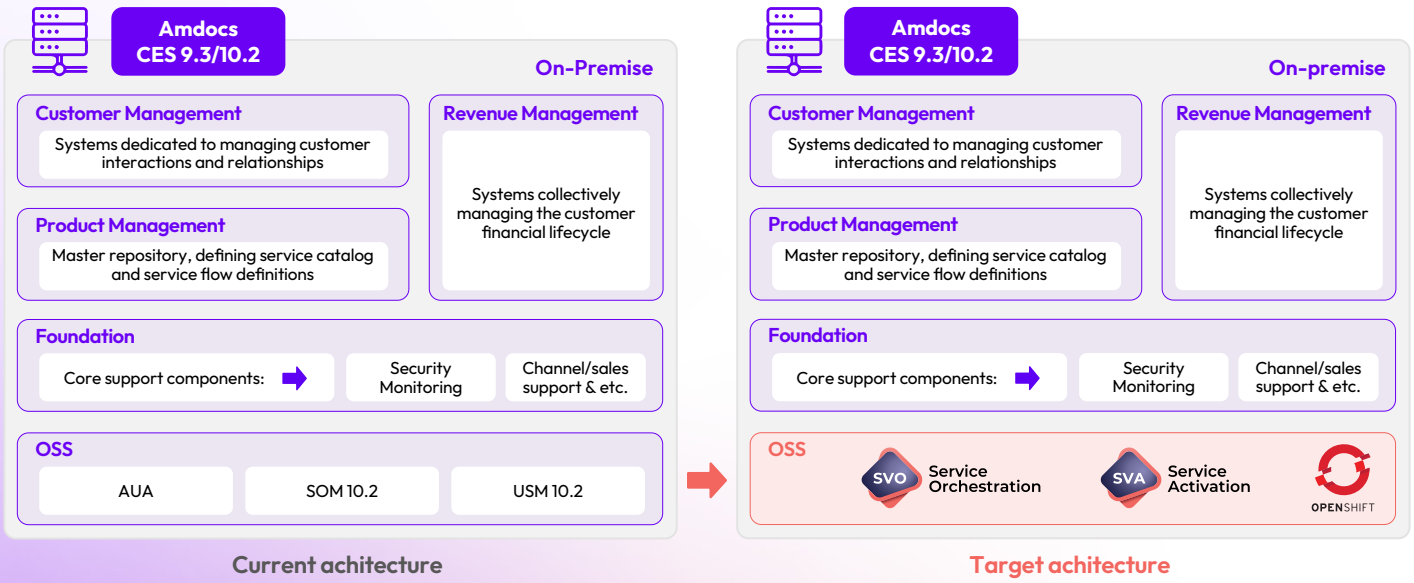

Figure 1 **Solution components**

Operational Enhancements and Results

The modernization delivered functional enhancements, including a **new GUI for Service Inventory** and a **centralized fallout management application** for efficient problem solving.

Operationally, the shift to a cloud-native architecture enables **simplified intra-operations** and leads to **reduced cycle time and fallout rates**.

The platform provides **E2E visibility** for operations teams, supports continuous delivery (CI/CD), and offers **improved resilience** and system availability.



End-to-End Order Visibility

Faster issue resolution and improved customer transparency



Automated Fallout Management

Reduction in fallout rates and operational workload



Advanced Task Management

Shorter fulfillment cycles and streamlined processes



Centralized Logging & Monitoring

Faster troubleshooting and proactive performance management



CI/CD and Zero-Downtime Updates

Increased deployment agility and reduced service interruptions

Delivering Strategic Business Value

The OSS modernization project delivers significant business benefits by reducing order cycle times, improving operational efficiency, and lowering TCO through cloud-native architecture. Enhanced visibility, automated fallout handling, and advanced task management empower teams, boost customer satisfaction, and future-proof Vivo's OSS ecosystem for agility, scalability, and seamless integration.

Key business benefits include:

Reduced Order Cycle Time & Fallout Rates
End-to-end visibility and automated fallout handling significantly shorten fulfillment timelines and minimize errors.



Lower Total Cost of Ownership (TCO)
Cloud-native architecture eliminates Oracle dependency, leverages open-source technologies, and improves operational efficiency.



Enhanced Customer Experience
Real-time order tracking and improved GUI empower customers and operations teams with transparency and faster issue resolution.



Future-Proof OSS Ecosystem
Microservices-based design, CI/CD automation, and TMF OpenAPI compliance ensure agility, scalability, and readiness for 5G and beyond.



Operational Efficiency & Empowerment
Advanced task management, centralized logging, and downtime management enable faster troubleshooting and streamlined processes.

Vivo Brasil: OSS Modernization Delivers Seamless Migration at Scale

By modernizing its OSS platform, Vivo Brasil migrated 100% of the mobile and fixed-line subscribers managed on the Amdocs platform to the modernized solutions, with zero business impact and zero system downtime during deployments, while eliminating service timeouts and improving inventory API performance by 90%.

100% Mobile subscribers
managed on Amdocs platform migrated to (SVA)

100% Fixed-line subscribers
managed on the Amdocs platform migrated to (SVO)

"We completed the modernization on schedule and without impacts to operations, demonstrating the maturity of the collaboration between Vivo and Amdocs and the commitment of the teams involved. This evolution strengthens our business support platform and prepares us for future operational challenges"



Fernando Paes Campos,
Executive IT Director at Vivo

Key Results

- **Eliminated timeouts** between SVA and CAM, boosting service stability and reliability (~1M orders/month)
- **90% improvement** in inventory query API performance
- **Zero system downtime** during deployments
- **Zero impact on the business**

Delivering Immediate Operational Excellence

New GUI for Service Inventory
A modern, user-friendly interface for managing service instances within svo.

Centralised Fallout Management
A dedicated application for efficient problem tracking and resolution, allowing for bulk handling of issues.

End-to-End Visibility
Operations teams gain full insight across the service fulfilment hierarchy and milestones, from sales to cash.

Improved Resilience & Availability
The cloud-native architecture offers enhanced stability and simplified downtime management.

CI/CD Capabilities Enabled
The microservices architecture allows for automated pipelines and the ability to test and deploy individual services, accelerating future enhancements.

Looking ahead

The modernization of Vivo's OSS platform through Amdocs' cloud-native SVO and SVA solutions positions Vivo for long-term success. This collaboration delivers a future-proof architecture that accelerates service delivery, reduces operational complexity, and enables seamless integration with emerging technologies like 5G SA and Advanced.

By leveraging microservices, CI/CD automation, and TMF OpenAPI standards, Vivo gains agility to launch new offerings faster, improve customer experience, and optimize costs.

Enhanced visibility, automated fallout handling, and advanced task management empower operations teams to drive efficiency and innovation.

This strategic upgrade ensures Vivo remains competitive, scalable, and ready for the next wave of digital transformation.

"Vivo's renewed trust in Amdocs reflects their customer-centric approach."

"We are proud to support this evolution through Amdocs CES, helping Vivo continue to deliver consistent customer experiences while establishing a solid foundation for future business growth."



Anthony Goonetilleke,
Group President of Technology and Head of Strategy at Amdocs.

Amdocs helps the world's leading communications and media companies deliver exceptional customer experiences through reliable, efficient, and secure operations at scale. We provide software products and services that embed intelligence into how work runs across business, IT, and network domains – delivering measurable outcomes in customer experience, network performance, cloud modernization, and revenue growth. With our talented people, and more than 40 years of experience running mission-critical systems around the globe, Amdocs runs billions of transactions daily. Our technology is relied on every day, connecting people worldwide and advancing a more inclusive, connected world. Together, we help those who shape the future to make it amazing.

Amdocs is listed on the NASDAQ Global Select Market (NASDAQ: DOX) and reported revenue of $4.53 billion in fiscal 2025.

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