

Vodafone Türkiye Transformed Diverse Operations into Value-Based Orchestration with TechNarts

HORIZON

PROBLEM STATEMENT

Vodafone Türkiye has long operated a large, sophisticated network supported by mature processes, domain expertise, and automation practices developed over many years. As the network evolved with new technologies, expanding services, and increasing operational demands, the opportunity arose to take these strengths even further through a more unified and scalable automation approach; one that could support both existing infrastructures and emerging digital platforms.

Mobile IP Core and Fixed Core teams already had well-established workflows tailored to their domains. With the introduction of SDN controllers, API-driven programmability, and Ansible-based Data Center automation, it became clear that bringing these capabilities together under a single orchestration layer would unlock new levels of efficiency, consistency, and operational speed, across IP Transport Networks, Fixed Core, Telco Cloud, and Data Center environments. **Especially as Türkiye moves toward more advanced 5G services, where software-driven control and automation are fundamental.**

About Vodafone Group

A part of the **Vodafone Group**, which operates as one of the world's leading technology communications providers, Vodafone Turkey offers a range of telecommunications technologies including **fixed, mobile and content services** to individuals and enterprises in line with its vision of **"building a digital future for everyone"**.



The goal wasn't to replace existing workflows, it was to build on them, modernize them, and make them easier to execute at scale. As networks continue to evolve, supporting both legacy infrastructures and future-ready digital architectures, **the need for centralized automation, activating zero-touch modules, and enabling SDN-aware orchestration and seamless integration with platforms such as Ansible became essential steps forward.** These enhancements would streamline day-to-day operations while ensuring adaptability across a wide range of network technologies.

This is the foundation for Horizon:

A platform designed to enhance the operations, strengthen operational agility, and introduce next-generation automation capabilities that could serve all teams; Mobile IP Core and Fixed Core through one cohesive orchestration experience.

Horizon represents not a correction, but an evolution of Vodafone Türkiye's operational capabilities, empowering teams with a flexible, API-driven orchestration platform that adapts seamlessly to both legacy systems and future digital network architectures.

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OBJECTIVE

The objective of Horizon was to establish a **centralized, sustainable, and value-driven orchestration platform** that eliminates operational fragmentation across Vodafone Türkiye's network. Specifically, Horizon aimed to:

- ▶ **Enable hybrid SDN adaptation**, combining the intelligence of the SDN controller with the flexibility of open APIs.
- ▶ **Unify more than 10 network domains** under one operational logic and one automation backbone.
- ▶ **Integrate Ansible Tower** to orchestrate Data Center workflows seamlessly alongside IP and Fixed domains.
- ▶ **Eliminate operational fragmentation** by consolidating scattered scripts and routines into governed, reusable automation modules.
- ▶ **Standardize workflows** using golden templates, policy-driven checks, and consistent validation logic across all teams.
- ▶ **Provide an operator-centric experience**, offering customizable dashboards, multiple UI themes, and URL-triggered automation windows.
- ▶ **Support Vodafone Türkiye's digital transformation roadmap** with an automation platform that is scalable, API-driven, and ready for AI-assisted operations.

In essence, Horizon aimed to transform Vodafone Türkiye's diverse operational landscape into **one unified and value-based orchestration fabric**, capable of powering next-generation network automation.

SOLUTION

Horizon was developed as a key step in **Vodafone Türkiye's digital transformation**; enhancing existing operational strengths with unified automation, SDN awareness, and modern orchestration capabilities across IP Transport, Fixed Core, Telco Cloud, and Data Center environments. Rather than replacing current workflows, **TechNarts and Vodafone Türkiye** built a shared automation platform that brings programmable control, hybrid SDN integration, and centralized execution into one cohesive system, ready to support both existing network infrastructures and future digital platforms while also providing additional value for 5G and upcoming mobile technologies.

At the heart of Horizon lies a powerful idea:

to consolidate automation, SDN-driven intelligence, and domain knowledge into a unified orchestration layer that accelerates digital transformation.

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First Cisco CNC Integration in Türkiye

As part of this hybrid SDN strategy, Horizon incorporates **deep, native integration with Cisco CNC**, Cisco's flagship SDN controller.

This marks the first CNC-orchestrated operational integration in Türkiye, enabling:

- ▶ Controller-aware automation workflows
- ▶ Real-time topology and device state retrieval
- ▶ CNC-driven intelligence embedded directly into Horizon modules
- ▶ Orchestration decisions informed by both controller data and traditional operational logic

This milestone positions Vodafone Türkiye as the leading operator in SDN-enabled operational orchestration nationwide.

Hybrid SDN Adaptation

Horizon introduces a hybrid SDN approach that blends traditional automation with software-defined programmability.

This means Horizon can:

- ▶ Data Center operations relied on **Ansible Tower**, while network teams depended on handcrafted scripts.
- ▶ SDN innovation was happening in pockets, but **not connected** to day-to-day operations.
- ▶ With over **10+ domains** operating in silos, no platform could orchestrate them under one logic.

This model ensures Vodafone Türkiye's network is not only automated; it is **programmable, adaptive, and ready for next-generation architectures**.

A UNIFIED FABRIC ACROSS 10+ DOMAINS

Horizon brought previously separated operational groups, including the newly combined Mobile IP Core and Fixed Core teams, onto a **single orchestration backbone**. From IP/MPLS to Fixed Core, Data Center, BNG, Security Gateways, CGNAT, and Enterprise domains, Horizon created:

- ▶ One platform
- ▶ One workflow logic
- ▶ One operational language

For the first time, all IP, Fixed, and Data Center technologies can be automated, monitored, and governed from the same control plane.

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A DEEPLY INTEGRATED AUTOMATION ENGINE

Horizon connects seamlessly with Vodafone Türkiye's ecosystem:

Ansible Tower Integration (Data Center Focus)

Harnessing Ansible Tower APIs, Horizon executes Data Center workflows; provisioning, configuration, validation, through structured, reusable pipelines.

SDN, Monitoring, Inventory, and Security Integrations

Cisco CNC, Prometheus, Ncmon, Spectrum, AUTIN, NetBox, Oracle DB, LDAP, SIEM, Mail Services, CI/CD pipelines... All unified under one orchestration hub.

Zero-touch modules and validation engines

Every module becomes part of the same automation fabric: ZTP, snapshot automation, backup validation, router recovery, BGP pair checks, and more.

Upgrade Validation Workflows

Automated pipelines verify upgrade integrity, ensuring configuration, version, and service continuity checks are consistently applied across domains.

Integrated Troubleshooting Capabilities

Major troubleshooting tasks can now be managed inside Horizon, minimizing device-level access and accelerating diagnosis and resolution.

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OPERATOR-CENTRIC DESIGN – BUILT FOR REAL TEAMS

Horizon is designed around real engineering workflows:

- ▶ Customizable dashboards
- ▶ Dark/light mode themes
- ▶ URL-triggered automation windows
- ▶ Layouts tailored to IP, Fixed, and Data Center teams
- ▶ On-call dashboards that surface the exact information required during on-call periods

The platform adapts to engineers – not the other way around.

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HORIZON

About TechNarts

TechNarts has been a leading software development company since 2007 to make a difference in the sector with its innovation-oriented approach, particular staff training and extensive know-how. With over 15 years of experience in mastering cutting-edge technologies and proven methodologies, it has been offering tailor-made software solutions and services to enterprises with an endless job enthusiasm. TechNarts has a deep expertise in track & trace systems plus OSS/BSS. From telecommunications to health informatics and fintech, covering a wide range of solutions in various sectors, we build unique solutions that matter.



STANDARDIZATION AND GOVERNANCE AT SCALE

Where operations once depended on individual styles or old habits, Horizon introduced:

- ▶ Golden templates
- ▶ Rule-based configuration enforcement
- ▶ Automated pre/post-operation checks
- ▶ Device-, domain-, and service-specific validation schemas

Every workflow now follows an identical operational DNA:

Reliable, traceable, compliant.

OUTCOMES

Horizon transformed Vodafone Türkiye's operational ecosystem into a unified, programmable, and future-ready orchestration environment.

- ▶ The platform delivered **Türkiye's first Cisco CNC operational integration**, embedding SDN controller intelligence directly into daily workflows.
- ▶ **Troubleshooting is now managed largely through Horizon**, reducing the need for direct device access and speeding up resolution.
- ▶ IP Core and Fixed Core workflows can now be orchestrated end-to-end within the same unified platform.
- ▶ **Hybrid SDN capabilities, Ansible Tower automation, and cross-domain orchestration** now work as one seamless fabric.
- ▶ **10+ network domains** are unified under a single platform
- ▶ **100+ dynamic dashboards and visualizations** give teams real-time, end-to-end visibility across **10+ network domains**.
- ▶ **70 legacy scripts were consolidated** into governed, reusable automation modules, eliminating fragmentation.
- ▶ **30+ zero-touch modules** reduced provisioning workflows from weeks to **minutes**, enabling true large-scale activation.
- ▶ **86,000+ daily command outputs** are now processed automatically, turning raw device data into structured operational intelligence.
- ▶ Operational knowledge once trapped in separate teams and script collections is now **centralized, preserved, and scalable**.

Horizon now serves as Vodafone Türkiye's foundational automation layer, powering ongoing digital transformation and next-generation network evolution. Built collaboratively by TechNarts and Vodafone Türkiye, Horizon stands as a shared engineering milestone, designed for scale, continuity, and long-term operational excellence.