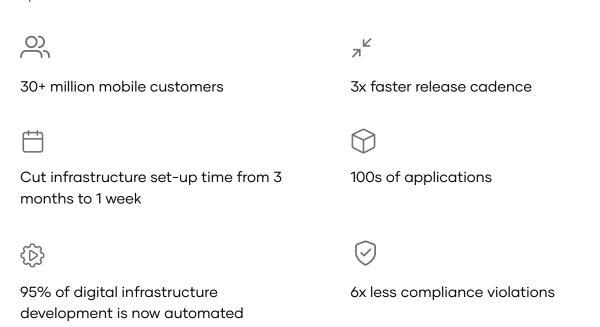# HashiCorp

vodafone | CUSTOMER CASE STUDY

Answering the call

Leading Italian communications company turns to HashiCorp Terraform Cloud to break down barriers and usher in a new era of innovation.

About Vodafone Italy

Vodafone Italia S.p.A. is an Italian telecommunications company. A subsidiary of Vodafone Group Plc, the organization serves more than 30 million mobile phone customers and over three million fixed-line users. Headquartered in Torino and Milan, Vodafone Italy introduced the country to services like Vodafone live!; 3G, 4G, and 5G mobile networks; DSL; fiber-optic and FWA services; and mobile virtual network operators.

30+ million mobile customers

3x faster release cadence

Cut infrastructure set-up time from 3 months to 1 week

100s of applications

95% of digital infrastructure development is now automated

6x less compliance violations

> ❝ It's exactly the formula we need to stay ahead of the competition without compromising the compliance or security of our environments."
>
> **EMANUELE DI SAVERIO**
> **CENTER OF EXCELLENCE LEAD, AUTOMATION, VODAFONE ITALY**

Innovation on line 1

Just as the transition from rotary phones to mobile phones represented a quantum leap in communications technology, so does the transition from on-premises, hardware-based infrastructure to cloud-based telecommunications services.

The telecommunications industry changes at lightning speed. Finicky customers expect new features and services regularly, increasing pressure on providers like Vodafone Italy — a subsidiary of the multinational telecommunications conglomerate — to roll out exciting new capabilities quickly and in compliance with regulatory standards. And all without busting the budget.

"In Digital Engineering we're responsible for developing and connecting all the digital touchpoints with Vodafone Italy's customers, from the website and mobile app to our chatbot and everywhere in between," says Emanuele Di Saverio, the company's Center of Excellence Lead for Automation. "Since it's all cloud-based, we realized the only way to keep up with service demand and the various compliance standards we have to meet would be to unwind our centralized approach to infrastructure development in favor of a faster, autonomous model," adds Massimiliano Romano, Vodafone Italy's DevOps Platform Architect.

Legacy operations meet modern realities

Vodafone Italy's Digital Engineering employs more than 200 IT professionals split into 15+ teams defined by channel, functional domain, and customer archetype. The infrastructure underpinning the services — both on-premises and eventually cloud-based via the company's expansive Amazon Web Services (AWS) environment — required a months-long planning, procurement, and deployment process that severely restricted the team's ability to achieve its go-to-market goals.

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Any time a developer wanted to spin up a new cluster for a service, they'd have to plan ahead by about six months and over-provision hardware and software licenses to include growth projection and contingency margins.

"It put us at a disadvantage both financially and competitively," Di Saverio explains. "We had to over-purchase and live with the spare capacity in order to be responsive to business requests. More importantly, this approach delayed upgrades and updates to existing services as well as releases of inventive new ones, which are central to the business's long-term strategic vision."

Challenges

Migrating infrastructure for digital touchpoints to AWS

Enabling self-service for development and engineering teams

Accelerating time to market of updates and new releases

> ❝ Terraform Cloud democratizes access to infrastructure management for lean agile teams who strive for continuous innovation.❞
>
> **MASSIMILIANO ROMANO**
> **CLOUD & DEVOPS ENGINEER / DEVOPS PLATFORM ARCHITECT, VODAFONE ITALY**

Democratizing infrastructure to accelerate transformation

Recognizing that having a central infrastructure team for an increasingly cloud-first organization isn't scalable, Di Saverio and his colleagues set out to decouple workstreams and democratize access to infrastructure with an infrastructure as code (IaC) solution.

The concept was simple: eliminate the barriers to innovation and deliverability without sacrificing security, compliance, or the ability to control costs. But the impact on the business — provided the team got it right — promised to be enormous.

"We wanted to transform our work culture while also delivering real value to the business," Romano explains. "Democratizing infrastructure through Terraform Cloud enables real decentralized ownership. It creates golden pathways for teams to iterate and own their own cloud infrastructure so the 'you build it, you ship it, you love it' motto applies from start to finish."

Terraform Cloud enables effortless, automated provisioning of cloud resources. Vodafone Italy developers can use Vodafone-compliant patterns created in Terraform modules, served through the private registry, to stand up the infrastructure their particular service or microservice demands through reuse of pre-approved and peer-reviewed Infrastructure-as-code modules — instead of muddling through the previous months-long approval process.

The platform's role-based access control and Sentinel policy capabilities create a single, yet segregated environment that grants minimum privileges for developers, cloud engineers, and operations managers while automating compliance reviews and continuous improvement of the company's security posture.

But Romano says the value of the solution goes well beyond that. Vodafone Italy uses Terraform Cloud to create databases, set up its repository and team structure on Github, and create CI/CD pipelines on Jenkins and Microsoft Azure DevOps Services.

Terraform Cloud also serves as an upskilling platform for developers, who can search the private registry for a solution that's been implemented by other colleagues. This not only helps developers hone their skill sets, but also fuels internal collaboration to share code and common approaches (i.e. InnerSource) across borders to other local Vodafone markets.

"Terraform Cloud gives us real agility without compromising innovation firepower because now we can experiment with serverless workloads and still support legacy applications, all with a code-first approach," Romano says. "We can manage via our monitoring primitives on third-party suppliers, our source code management (SCM) strategy, and developer permissions to help ensure compliance for over 14 different AWS accounts and hundreds of applications spanning more than 25 clusters. That would be impossible without decentralized ownership and infrastructure as code."

Transformed infrastructure, transformed culture

For Di Saverio, adopting Terraform Cloud has delivered significant, concrete benefits to the company's business and its bottom line. He says that Terraform Cloud is the conduit that enables autonomous teams to own their innovations and quickly iterate on their infrastructure. They can effectively balance operating costs with the value they bring to the table — without worrying about managing and maintaining Terraform themselves.

"Today, with roughly the same size team as before, we've accelerated our release cadence 3x by cutting infrastructure setup times from three months to one week" he says. "Terraform accounts for about 95% of our infrastructure work, and as we get further along in our migration process we expect to see those figures continue to improve."

In addition to faster time to market for updates and new releases, Vodafone Italy's skilled IT professionals now have more time and autonomy to focus on higher-value activities like delicate migrations and high-priority incidents.

"HashiCorp is a long-term partner for us and Terraform Cloud is a cornerstone of our operations, security, and compliance processes. Alternative solutions are either not cost effective or simply lack much of the foundational functionality we need," Di Saverio explains. "More importantly, Terraform empowers our organization to innovate freely within the guardrails imposed by and embedded in the platform. It's exactly the formula we need to stay ahead of the competition without compromising the compliance or security of our environment."

Outcomes

Increased release cadence 3x

Shortened infrastructure set-up time from 3 months to one week

Automated 95% of digital infrastructure development

Streamlined security parameters and protocols

Upskilling teams and collaboration

Solution

Vodafone Italy uses Terraform Cloud to empower teams with self-service digital infrastructure capabilities that simplify operations, accelerate time to market of new services and capabilities, and enhance the company's overall security posture.

Vodafone Italy Partner

Emanuele is an Engineering Manager with 15 years of working experience in web, mobile, and cloud and over a decade of innovation and strategy consultancy experience for brands like Porsche, Audi, AXA, STC, Nestlè, and Roche Diagnostics. He currently leads the Automation Center of Excellence in Vodafone Italy Digital Engineering.

Emanuele Di Saverio
Center of Excellence Lead,
Automation, Vodafone Italy

Massimiliano is a Cloud Solution Architect focused on DevOps and Platform Engineering. He started working on public and private clouds in 2015, developing Cloud Architectures and Cloud Orchestrators in the Network Function Virtualization area. He is now the Technical Lead of the DevOps Platform of Vodafone Italy Digital Engineering.

Massimiliano Romano
Cloud & DevOps Engineer
/ DevOps Platform
Architect, Vodafone Italy

Technology Stack

- **Infrastructure:** AWS (90%), on-premises (bare metal) (10%)
- **Workload type:** Containerised Apps (60%), Serverless (30%), Bare Metal Linux Apps (10%)
- **Orchestrator:** Kubernetes (EKS, Openshift)
- **CI/CD:** Jenkins, Azure DevOps
- **Version control:** GitHub Enterprise
- **Programming languages:** HCL Terraform, Python, Go, Java, Groovy, Shell