

USE CASE

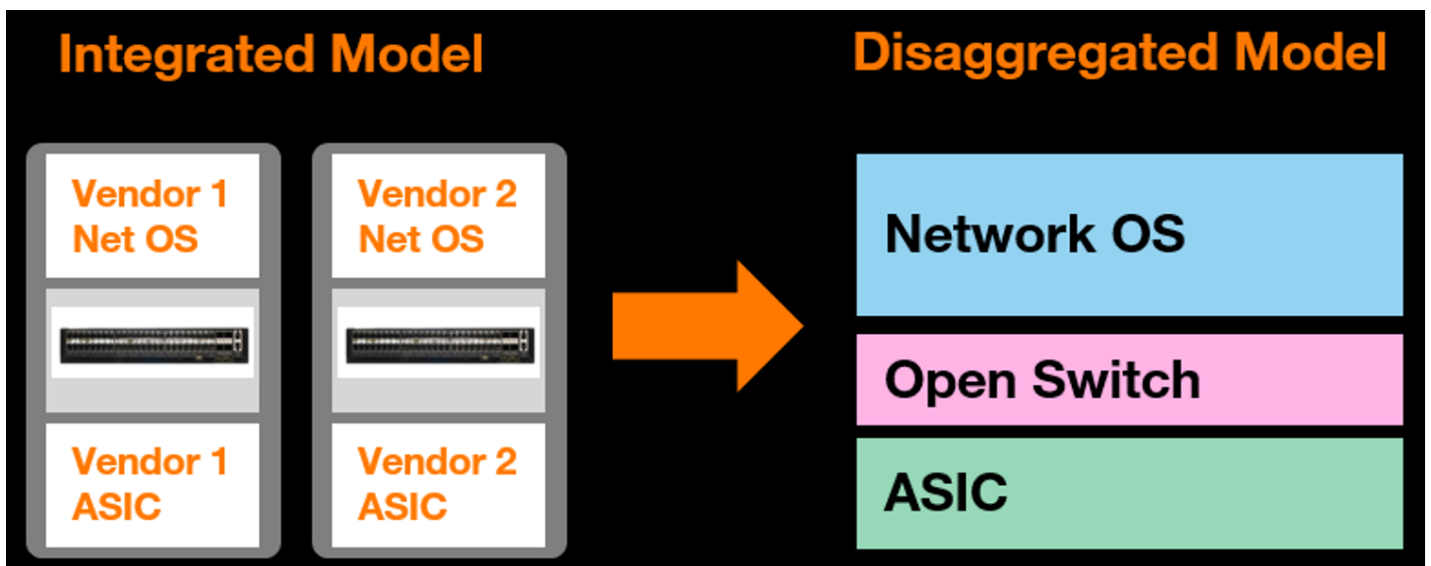
# Orange Innovates with SONiC Open Switch Deployment for Telco Use Case

## Orange Challenge

Orange is one of the world’s leading telecommunications operators by providing a global IT and telecommunication services to multinational companies under the brand Orange Business. In February 2023, the Orange Group presented its strategic plan “Lead the Future”, built on a new business model, and guided by responsibility and efficiency. With the “Lead the Future”, Orange will accelerate the automation and virtualization of network management, as well as the provision of new services.

Reducing dependency on the product development roadmaps of Orange’s legacy equipments, reducing capital expenditures (Capex) and optimizing operational expenditures (Opex) present real challenges. These challenges are addressed through Network Function Virtualization (NFV) or Containerization and network disaggregation. Orange International Networks has embarked on a transition from fully integrated products to complete disaggregation., This strategy aims to design flexible and cost-effective networks, enable faster deployments, and simplify information systems integration, network operation and business support.

Figure 1: Integrated versus Network Disaggregated models



Network disaggregation, the process of decoupling software and hardware in network platforms, allows for the functionality of switches or routers to be software-driven and independent of the hardware. This shift is where SONiC comes into play as an integral component of our strategy. As an open-source Network Operating System (Net OS), SONiC offers the flexibility to run on a variety of hardware platforms, making the Net OS independent from the choice of open hardware.

According to Jean Louis Le Roux, EVP Orange International Networks, “Disaggregation is a key pillar of our Network Softwarization journey. It is paving the way for more agile, flexible, autonomous, green, and cost-effective networks. And it also allows for upskilling our teams. This switch disaggregation with SONiC is a first successful step of a global journey”.

The adoption of SONiC directly addresses our challenges by:

- Regaining control over our networks and features roadmap, avoiding lock-in and dependencies.
- Improving agility and automated integration of Net OS, “NFV-like”

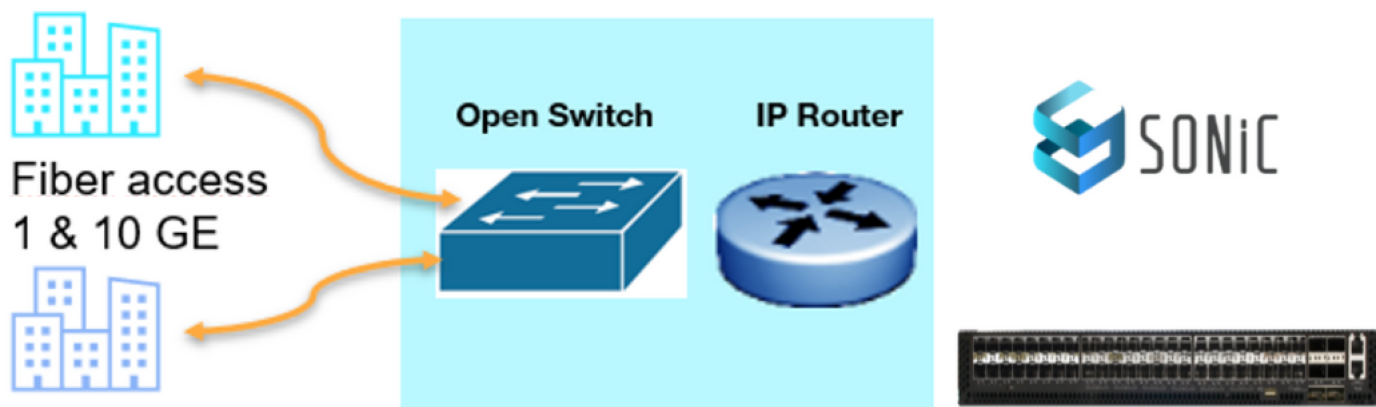
- Substantially decreasing costs, both in terms of product and power consumption, through the efficient management capabilities of SONiC.
- Attracting and upskilling talent to work in an open ecosystem, enhanced by the community support and continuous innovation within the SONiC project.

## Solution

The Orange Disaggregated Open Switch, “ODOS”—meaning “path” in Greek—marks a pivotal step in our transformation from copper to fiber. This transition is integral to the initiation of the 1-10 GbE Fiber To The Enterprise (FTTE), offering a solution of innovative, flexible and financially optimized aggregations.

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Figure 2: Orange Disaggregated Open Switch for Fiber Access Telco Use case



After an analysis of the disaggregation ecosystem, we selected SONiC as the most mature open-source Network Operating System to develop an Open Switch to our Fiber Access Telco Use case. To address our specific needs, we developed essential features, including port and VLAN configuration, CLI, SNMP and TACACS Telemetry for our Telco VLAN aggregation use case. These enhancements were integrated into the L2 SONiC software, running on Open Hardware switches. In addition to real-time Telemetry, a complete NetConf management Server was developed to automate customer provisioning and service delivery.

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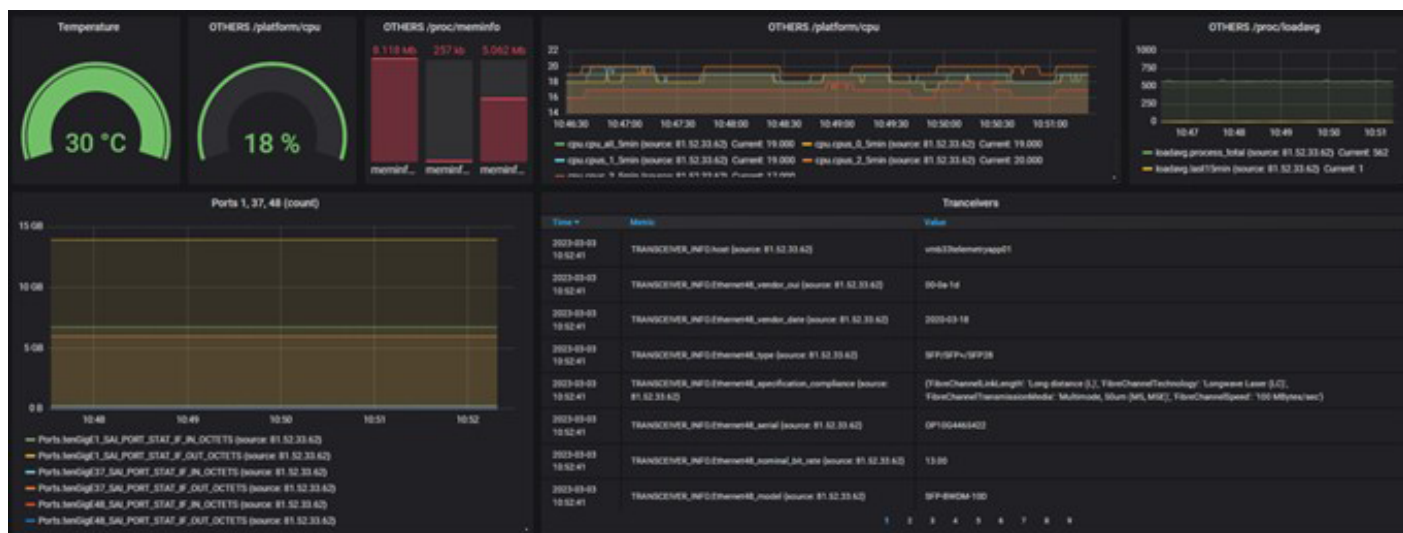
## Results

During Q1 2023, we started the deployment of our Disaggregated Open Switch into production across the Orange International Network, targeting the enhancement of fiber access for our business customers. 90 Disaggregated Open Switches are now live in our network, serving customers.

## Whats Next

We are planning to add over 150 additional switches for fiber access in 2024. After succeeding the development and deployment of this first Telco L2 use case, our next objective will be to use SONiC L3 software for IP packet routing use case. Orange is planning to be an active contributor in SONiC community by upstreaming the Netconf server as part of SONiC release features. We will encourage the evolution of SONiC software toward more Telco oriented.

Figure 3: Real Time telemetry Dashboard



# About Orange

Orange is one of the world's leading telecommunications operators with revenues of 44.1 billion euros in 2023 and 137,000 employees worldwide at 31 December 2023, including 73,000 employees in France. The Group has a total customer base of 298 million customers worldwide at 31 December 2023, including 254 million mobile customers and 25 million fixed broadband customers. The Group is present in 26 countries. Orange is also a leading provider of global IT and telecommunication services to multinational companies under the brand Orange Business. In February 2023, the Group presented its strategic plan "Lead the Future", built on a new business model and guided by responsibility and efficiency. "Lead the Future" capitalizes on network excellence to reinforce Orange's leadership in service quality.

Orange is listed on Euronext Paris (symbol ORA) and on the New York Stock Exchange (symbol ORAN).

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# Join SONiC

Become a SONiC member to collaborate, learn and shape the future of the Open Network Operating System.

[sonicfoundation.dev/join-sonic](https://sonicfoundation.dev/join-sonic)