



Orange International Wholesale

NSO and the consecutive transformation

Cédric Bonnet - Orange



Orange International Wholesale at a glance

- International wholesale division of Orange Group serving worldwide :
 - Internet Service Providers
 - Mobile Network Operators
 - Content Providers
 - Over The Tops players

<https://wholesalesolutions.orange.com/>



Mobile

Orange has long-standing mobile experience providing network solutions to more than **200 mobile operators** around the globe.



Voice

At **Orange**, we are proud to be a recognised industry leader in the **voice market**, offering reliable and secure services for voice.



Data & IP

Orange is an experienced player in the delivery of **global data and bandwidth services**. We are facilitating customers' digital transformation as well as providing reliability and security.



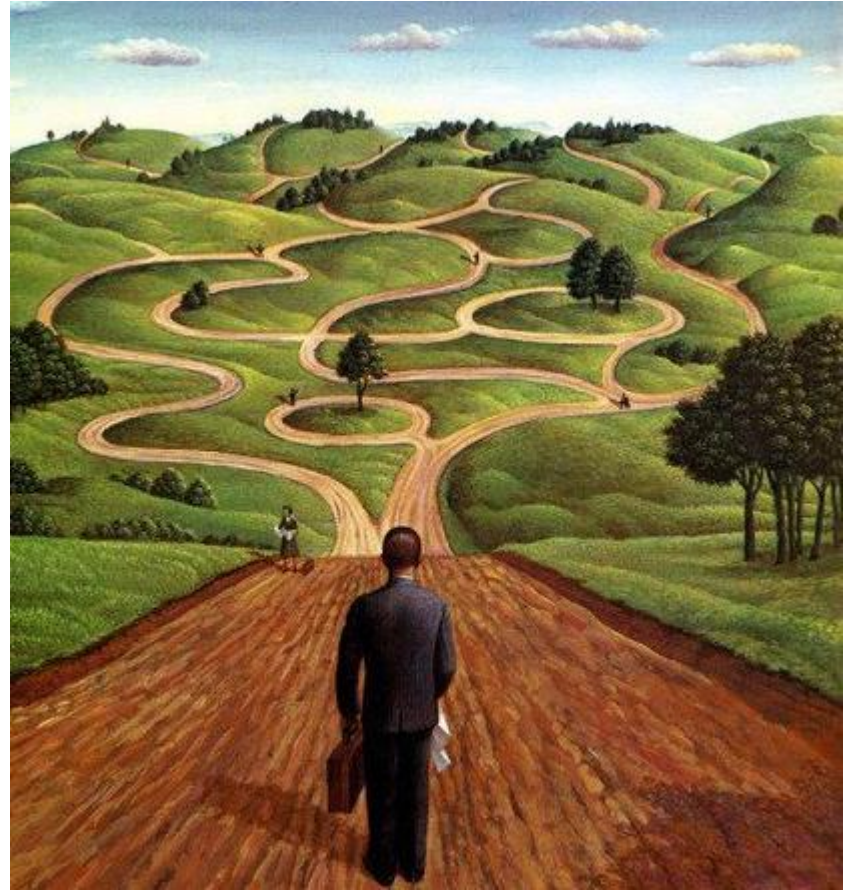
Security

Security is top priority for all providers in today's telecoms market, and Orange is at the forefront of the industry. Our innovative **anti-fraud solutions** are tailor made to protect your revenues.



<https://wholesalesolutions.orange.com/ethernet-now-video/>

How proud we are
about the result,
what is interesting
is not the output
but **the path!**



Not the best place to start automation and SDN services

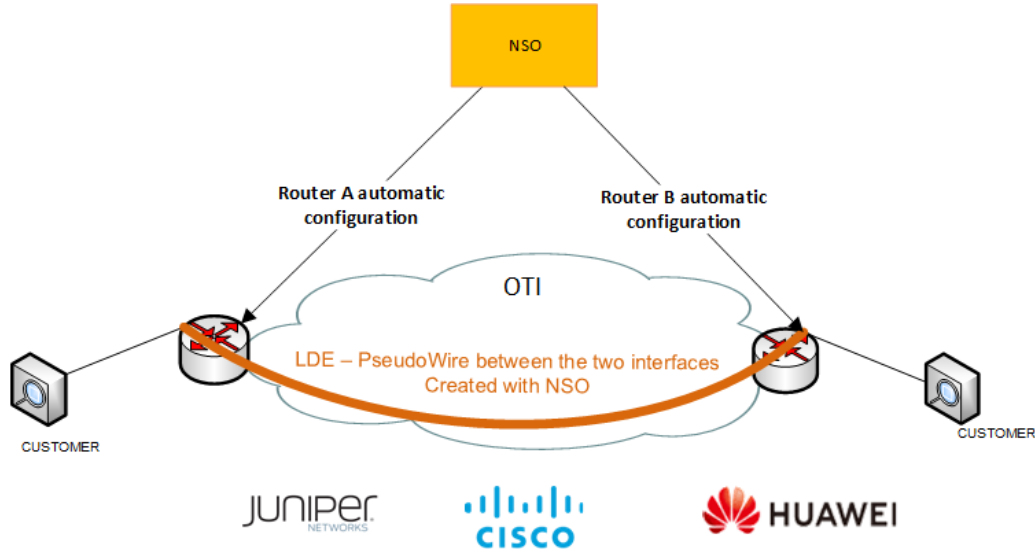


Services used to rely on a strong history of
craftsmanship,
expertise,
customer orientation and
oral communication

First revolution – the introduction of Cisco NSO


 **L2VPN as the first use case**

 **Network driven approach**



 **Techno push decision**

 **Multi-vendor environment**




**Network vendors not really ready for Netconf
Need to start NED CLIs**



LESSON LEARNT



Lack of standard service description in IETF – YANG models



Need for strong standardization and exhaustive validation



Upskill network engineers to code instead of dev engineers to network

Second revolution – the need for orchestration



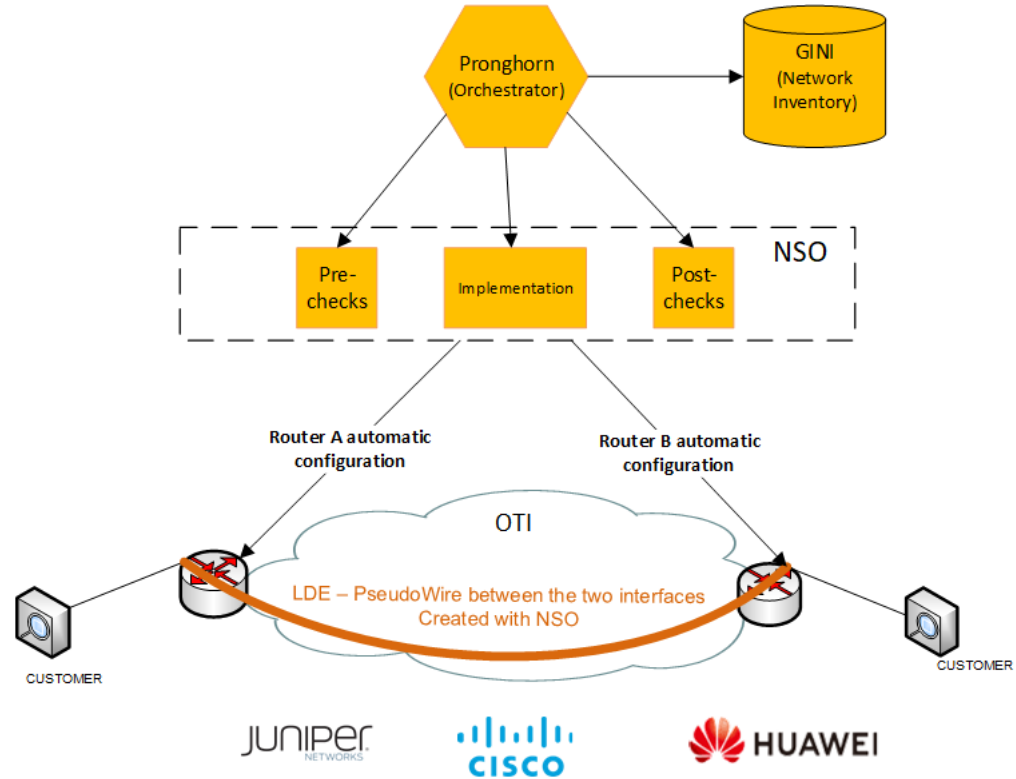
Process approach



Need to have reliable data in network/service inventories



All exceptions need to be anticipated and coded



Third revolution – Command & Delivery System

? Real-time quoting

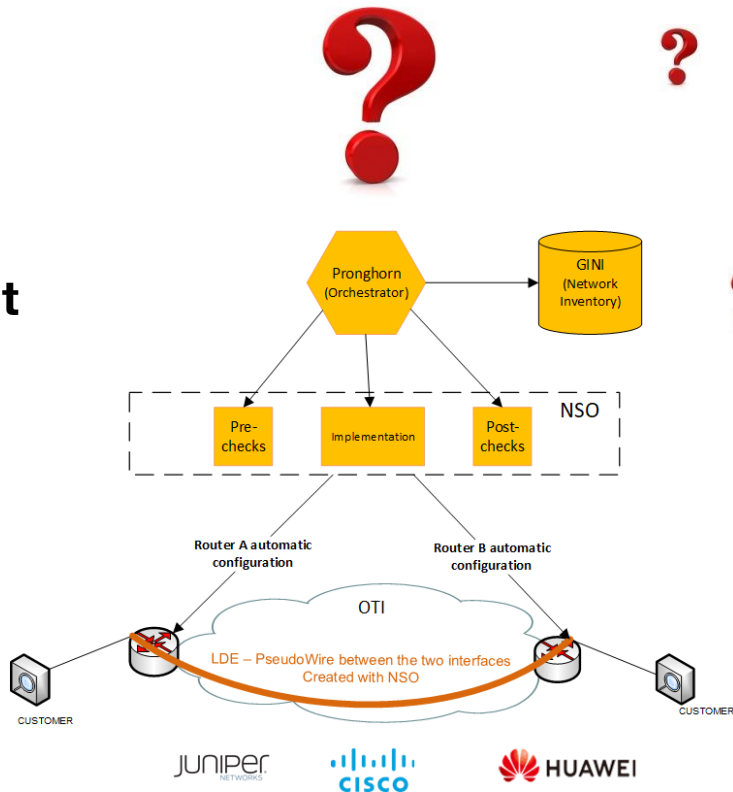
? Real-time feasibility studies

? Online engagement

? End of excel files

? Real-time delivery

? End of “it depends”



Fourth revolution – Agile development



**Integrated and
multicompetence team
(UX/Marketing/IT/Network)**



OneRoof organization



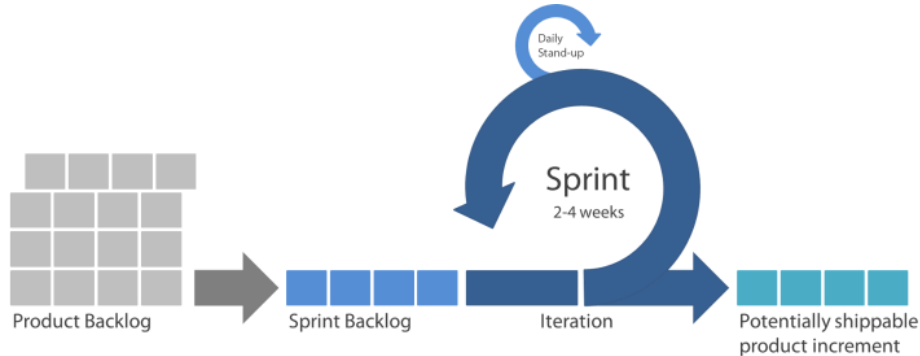
Risk internalization



**Agile/Scrum project
management**



Up to date technologies



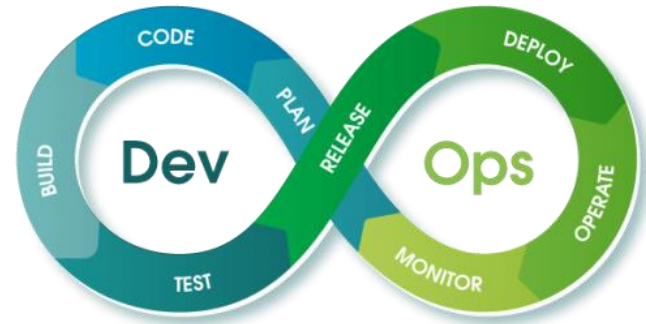
Fifth revolution – DEVOPS inside

∞ Docker + Kubernetes native

∞ Automatic end-to-end testing

∞ Infrastructure as Code

∞ No configuration = no mistakes



Continuous Integration

∞ Continuous Delivery

Continuous Deployment

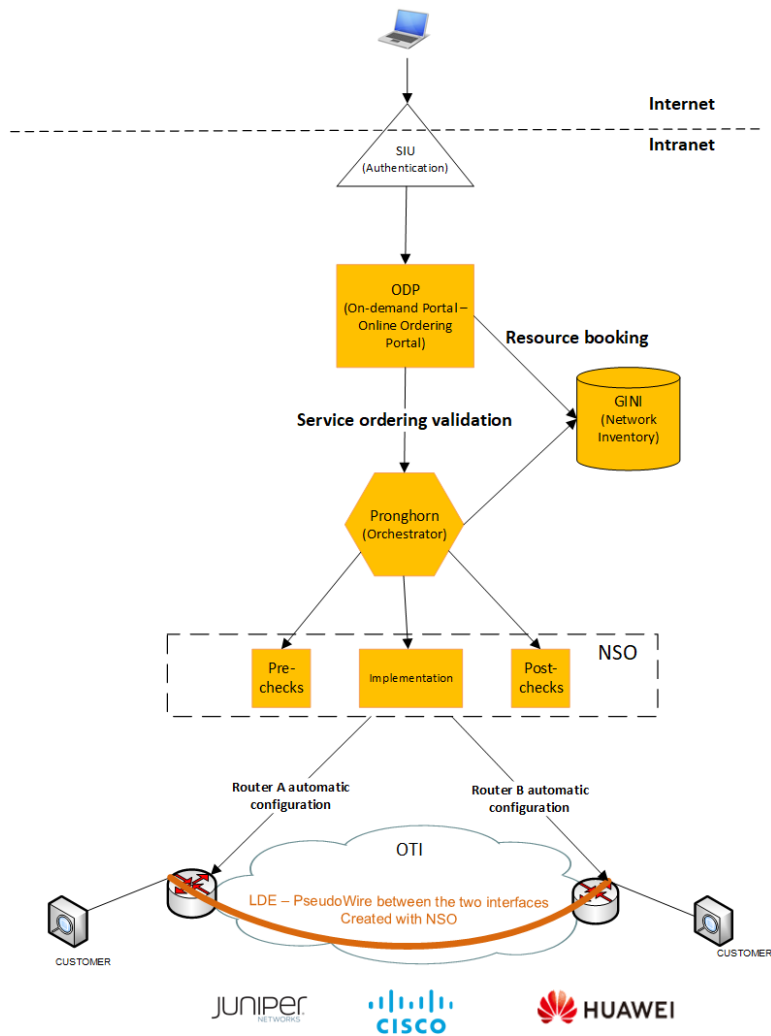
∞ Security by design (DevOpsSec)

A complete solution built in 6 months!

Team commitment

Strong management support

Believe in it!





- **Backport DevOps principles to NSO/PH:**
 - Automatic end-to-end tests within CI-CD (ongoing)
 - Build Docker based service templates instead of integrated templates

- **Extend SDN service architecture to other services of the IP wholesale portfolio**

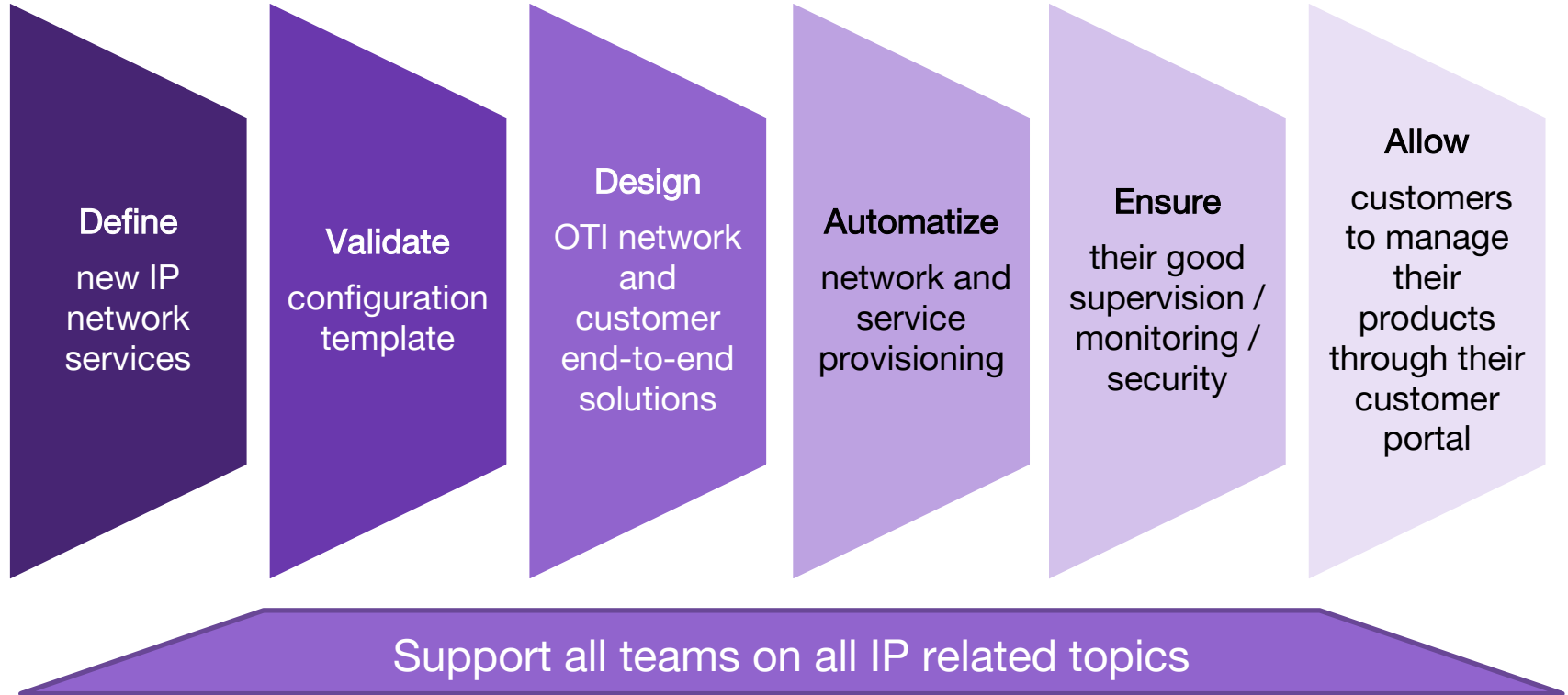
- **Build new integrated teams to propose online services to other wholesale product lines**

- **Continue transformation with delivery and after sales teams/activities**

- **Retrofit legacy L2VPNs in the SDN solution**

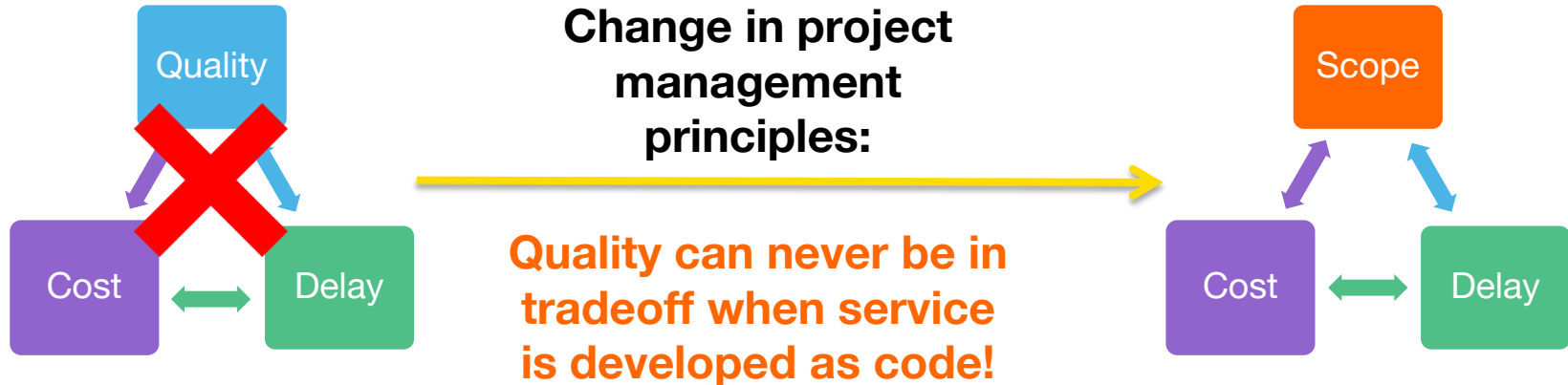
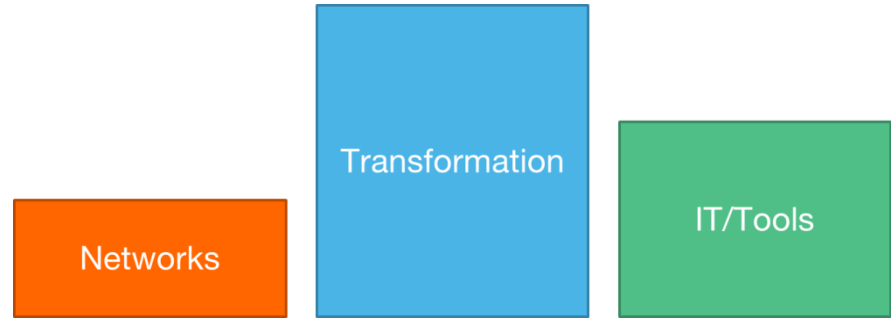
Integrate this way of working in normal activity

e.g. in my department presentation:



MY LESSON LEARNT on SDN projects

Impacted components



That all started with...



*We built a wall, we
built the pyramids,
math, science,
history, unraveling
the mysteries
That all started with
Cisco NSO! Hey!*





Thank You!

