Open Source MANO
by ETSI
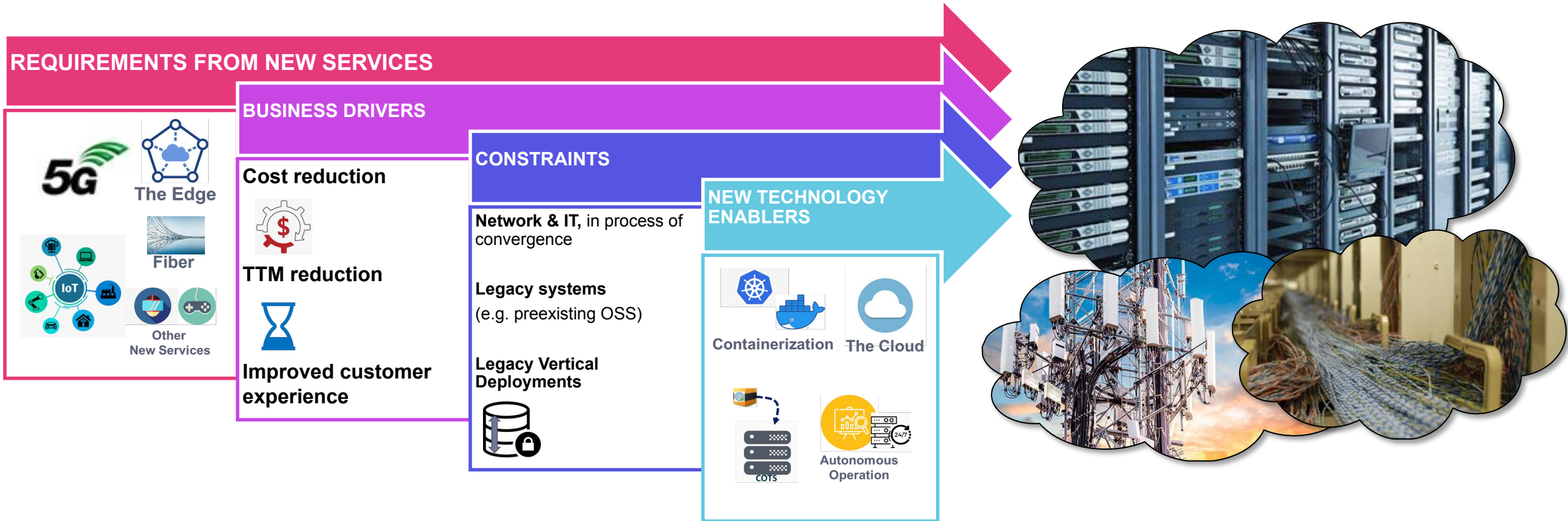
OSM as part of Telco Cloud footprint
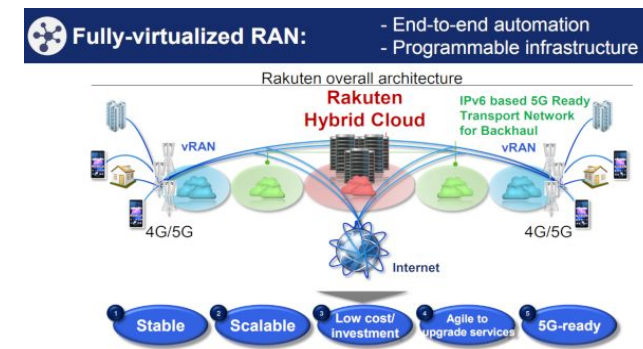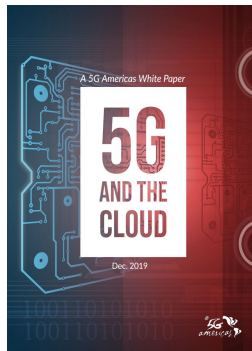
Sergio Tarazona (Whitestack, TSC member)

Agenda

- Telco Cloud footprint using open technologies

- OSM as part of Telco Cloud footprint

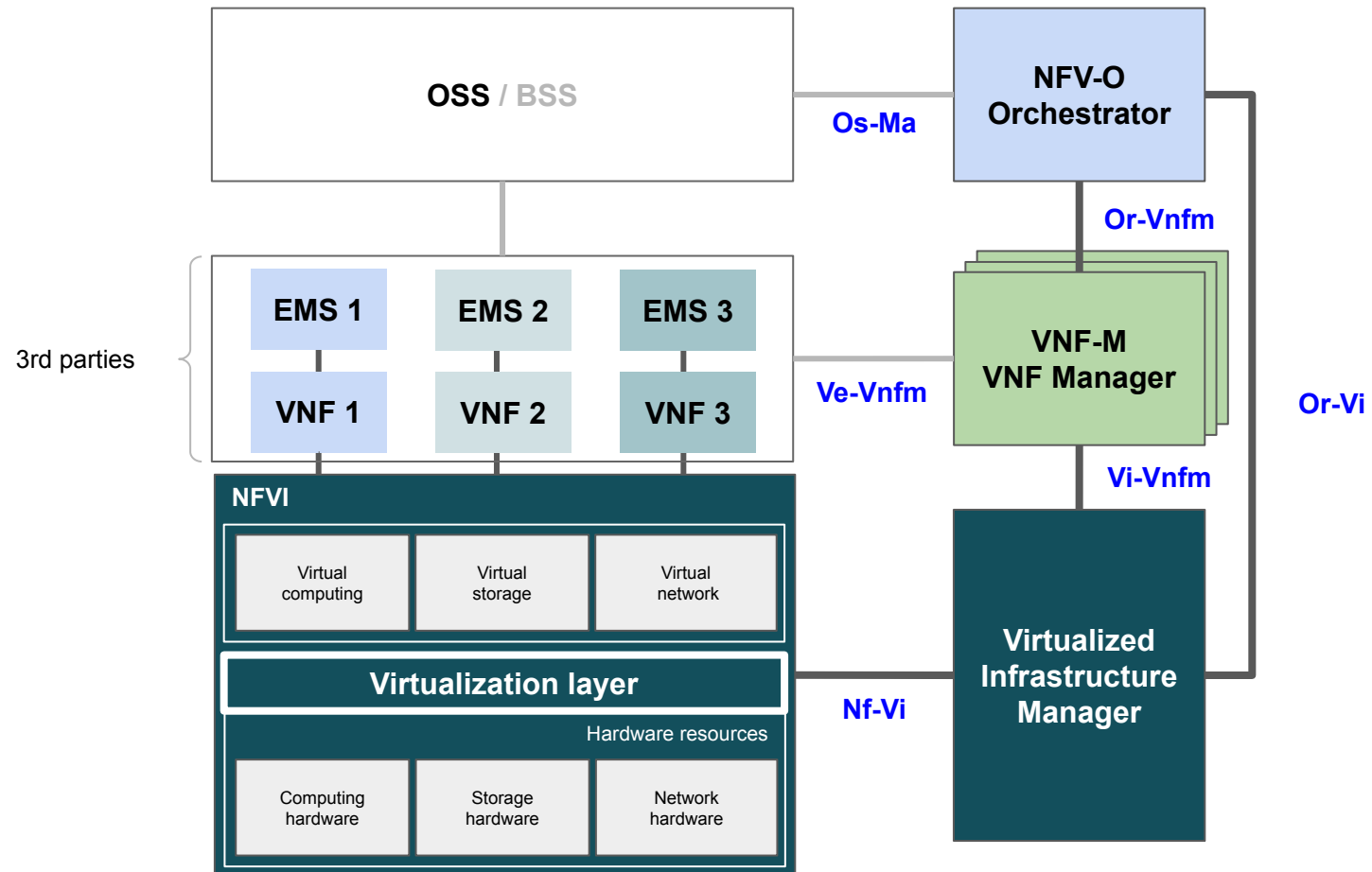- Demo

Some requirements for the evolution of Telco Clouds…

NEXT-GEN TELCO CLOUD

REQUIREMENTS FROM NEW SERVICES

5G

The Edge

IoT

Fiber

Other
New Services

BUSINESS DRIVERS

Cost reduction

TTM reduction

Improved customer experience

CONSTRAINTS

Network & IT, in process of convergence

Legacy systems
(e.g. preexisting OSS)

Legacy Vertical Deployments

NEW TECHNOLOGY ENABLERS

Containerization   The Cloud

COTS   Autonomous Operation

… Telcos are moving from virtualization to cloudification

if we look the ETSI NFV Architecture

OSS / **BSS**

NFV-O Orchestrator

Os-Ma

Or-Vnfm

3rd parties

EMS 1	EMS 2	EMS 3
VNF 1	VNF 2	VNF 3

Ve-Vnfm

VNF-M VNF Manager

Or-Vi

Vi-Vnfm

NFVI

Virtual computing	Virtual storage	Virtual network

Virtualization layer

Hardware resources

Computing hardware	Storage hardware	Network hardware

Nf-Vi

Virtualized Infrastructure Manager

Open technologies can cover key parts of the architecture
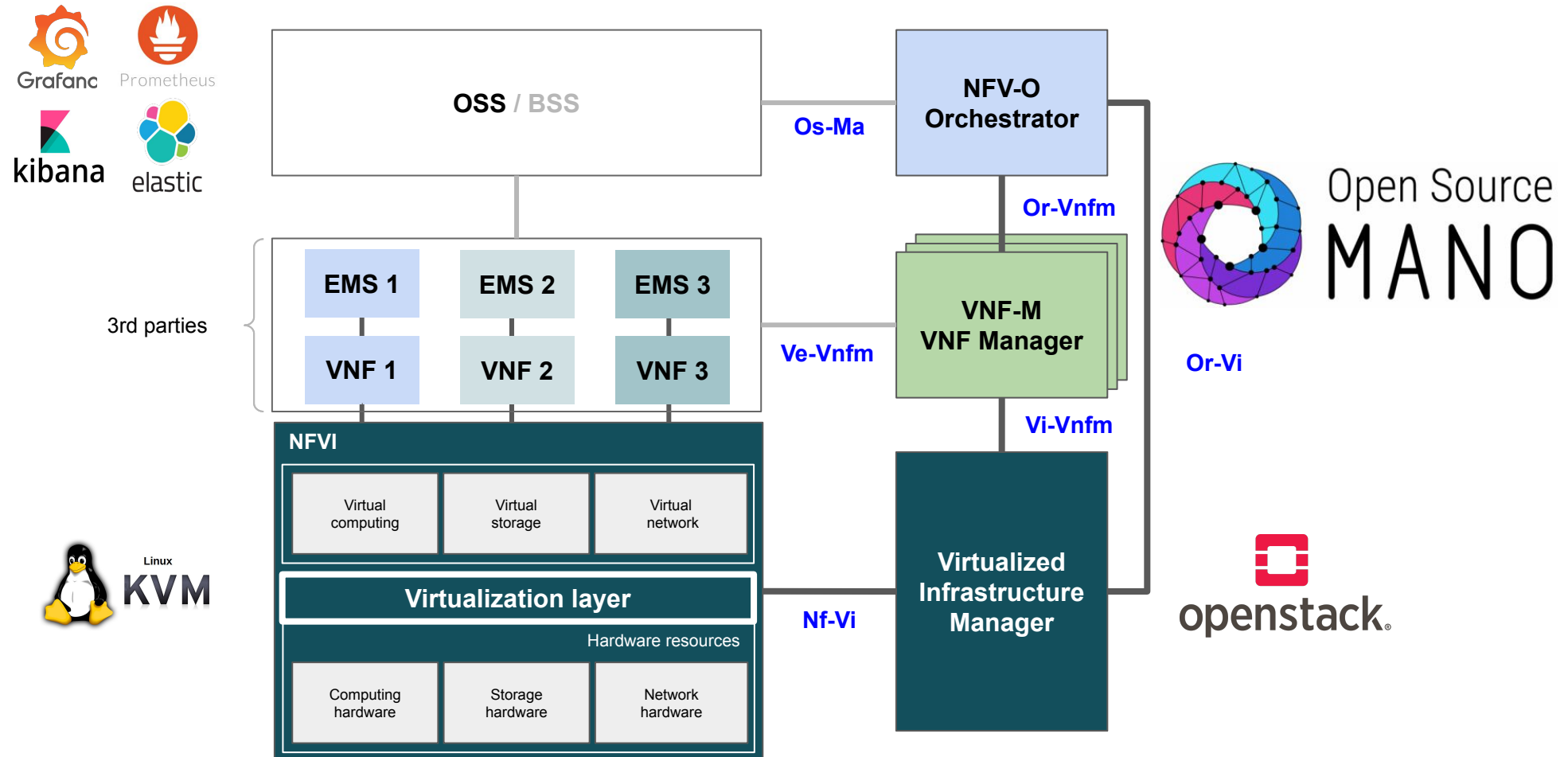
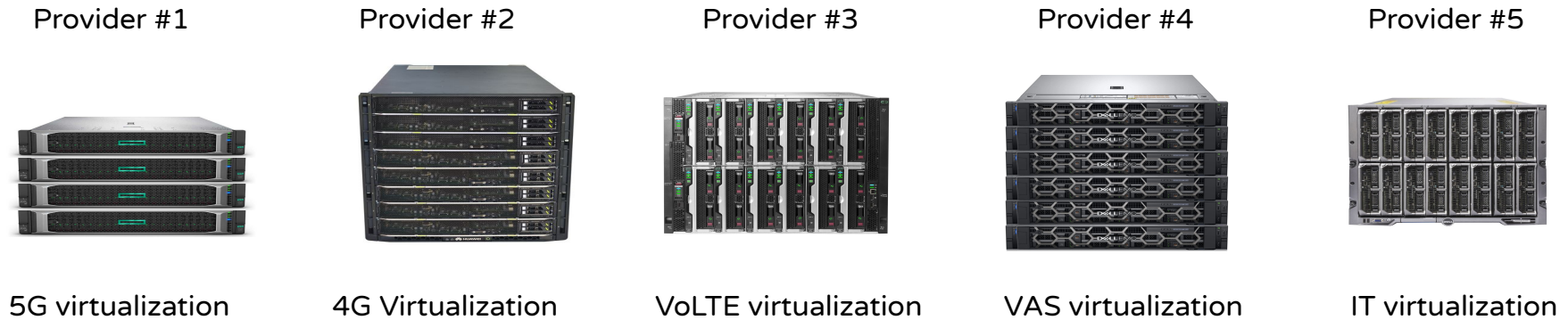# Whitestack has been using this open technologies

Whitestack has been implementing Telco Clouds in Latin America since 2018 and currently has:
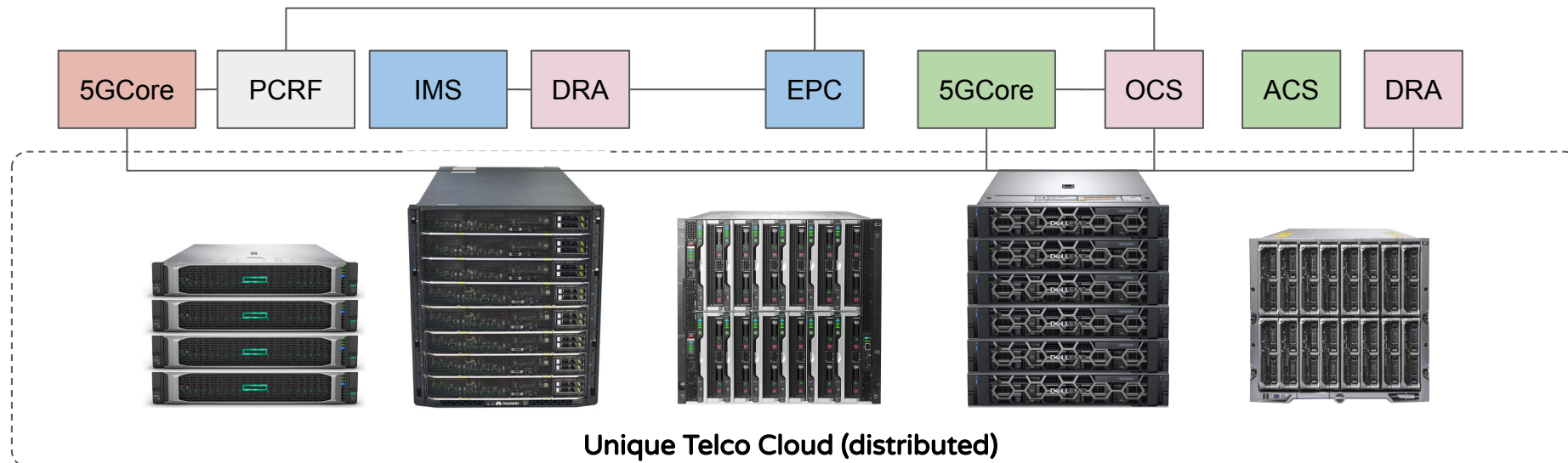
- More than 15 datacenters
- In more than 6 countries
- Those Telco Clouds are running VNFs and CNFs

the biggest challenge…

moving from this…

Provider #1 Provider #2 Provider #3 Provider #4 Provider #5

5G virtualization 4G Virtualization VoLTE virtualization VAS virtualization IT virtualization

to this…

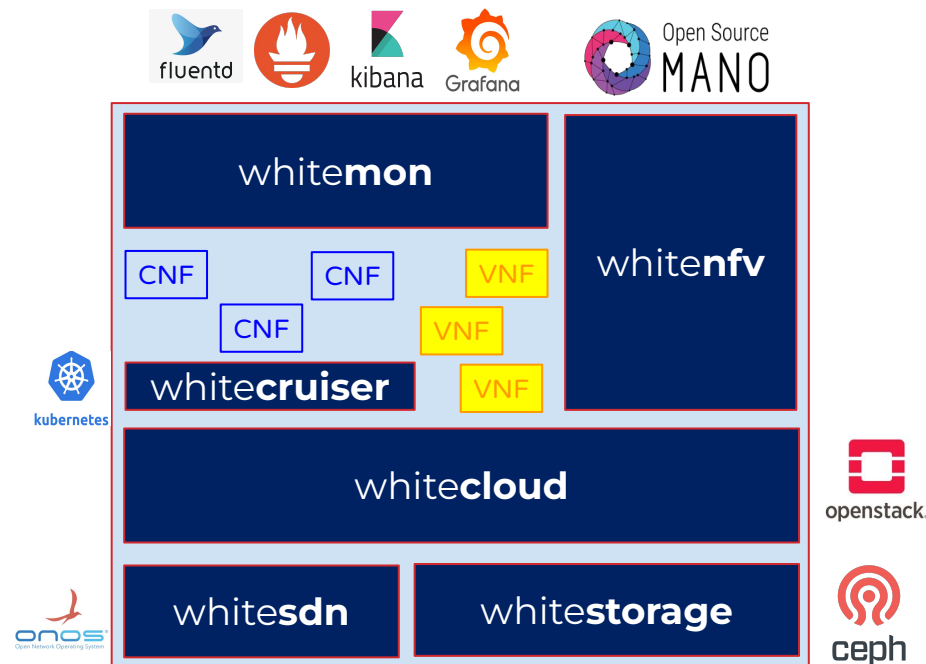| 5GCore | PCRF | IMS | DRA | EPC | 5GCore | OCS | ACS | DRA |

Unique Telco Cloud (distributed)

…first step of Telco Cloud adoption

Based on our experience, moving to Telco Cloud is a big challenge, that's why we suggest a progressive adoption:
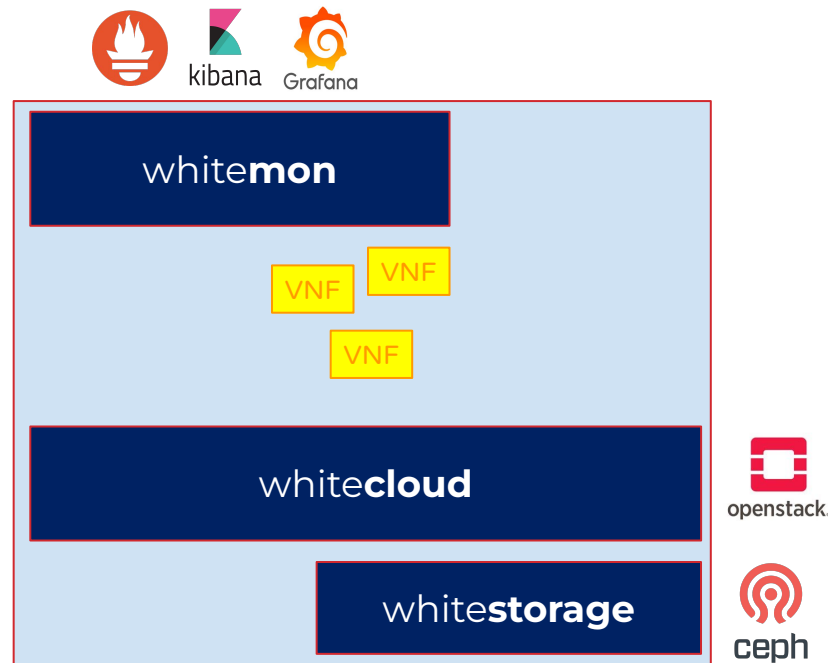
✓ Virtualization of VNFs

✓ Software Defined Storage

✓ Infrastructure management

…second step of Telco Cloud adoption

✓ Virtualization of VNFs

✓ Software Defined Storage

✓ Infrastructure management

✓ CNF Virtualization

✓ **Network Service Orchestration**

✓ Fabric automation

…third and final step of Telco Cloud adoption
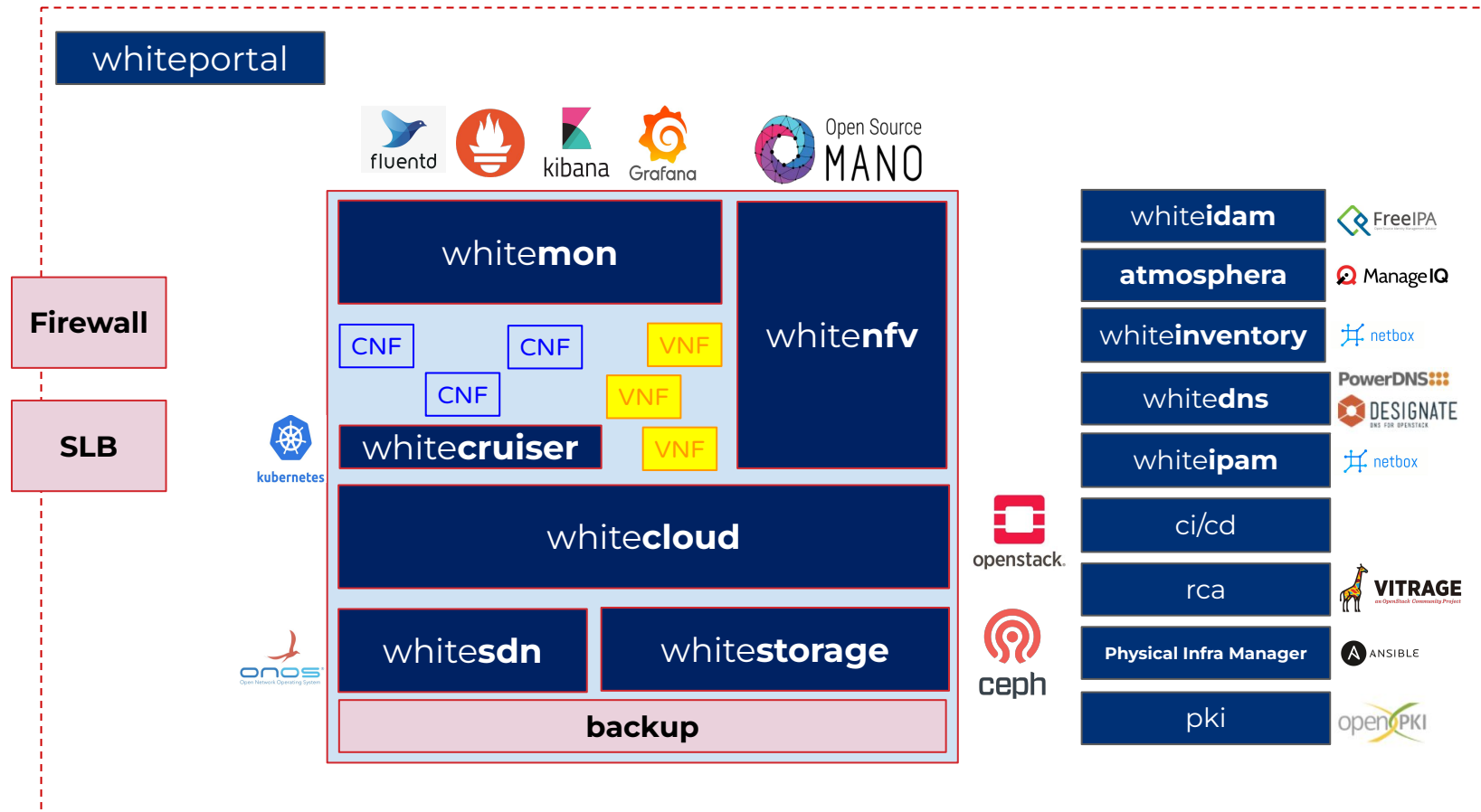

✓ Virtualization of VNFs

✓ Software Defined Storage

✓ Infrastructure management

✓ Virtualization of CNFs

✓ **Network Service Orchestration**

✓ Fabric automation

✓ Unified portal

✓ Automated backup

✓ Authentication integrated with AD

✓ IT orchestration

✓ Inventory

✓ DNS

✓ external IPAM

✓ CI/CD

✓ RCA

✓ Hardware management

✓ PKI Manager

✓ Physical firewall y load balancer

…benefits of using OSM in the Telco Cloud

Define the descriptors once and then use it in different datacenters and countries…

Just need to modify the instantiation parameters!

...demo
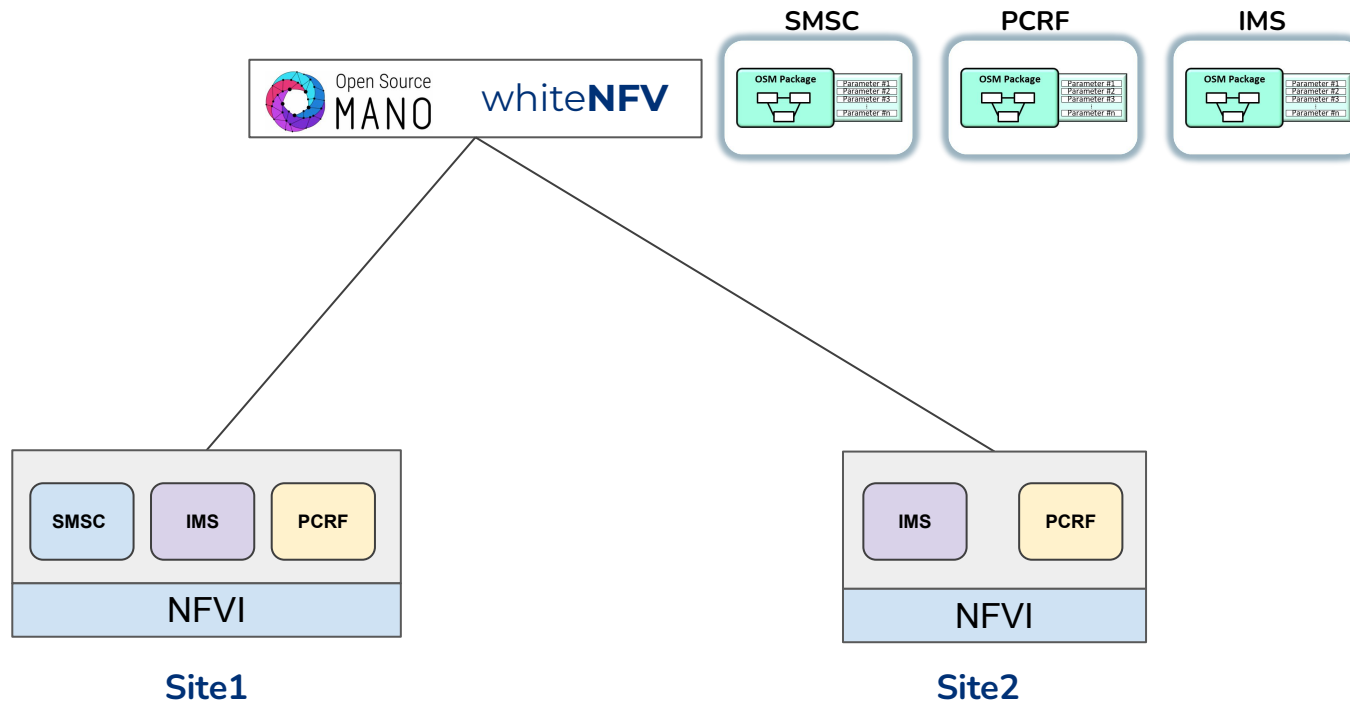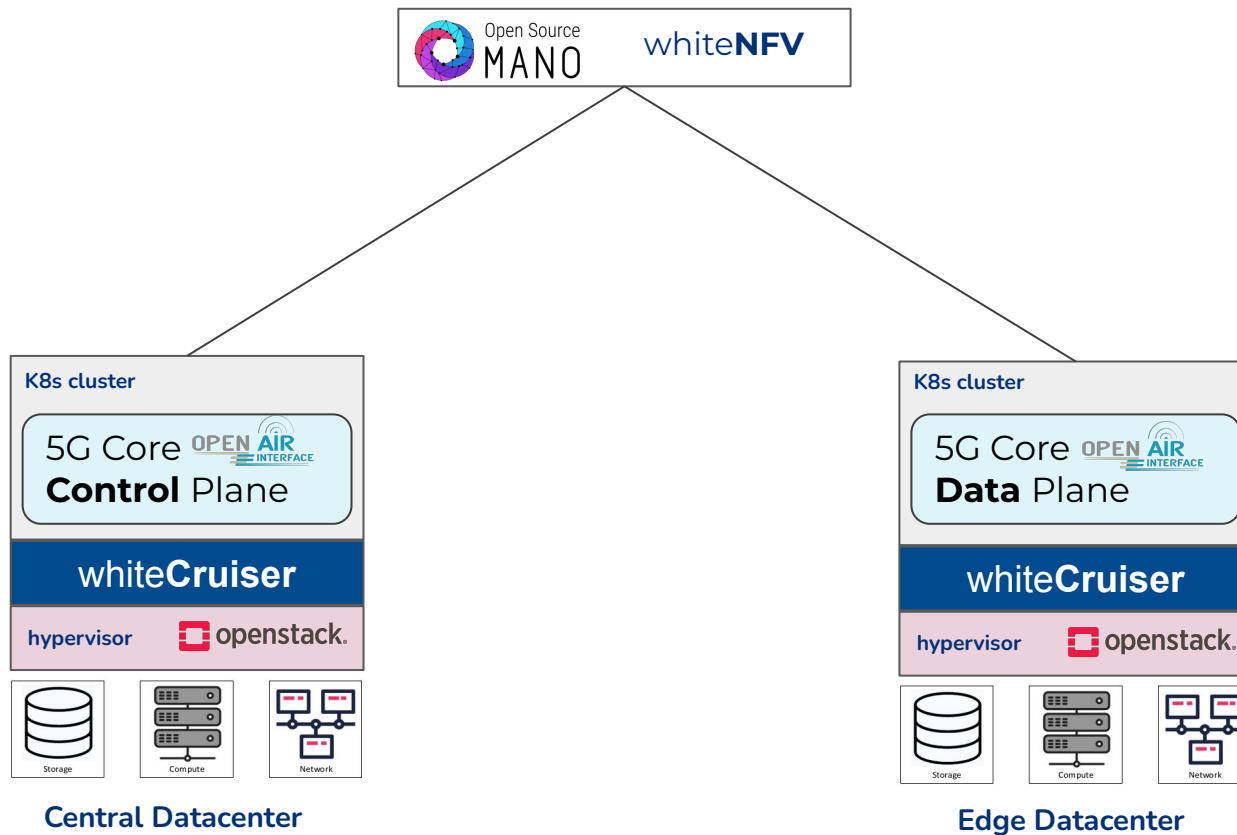
✓ 5G Core from OAI is used

✓ 2 NS and KNFs, both are instantiated using one OSM, first 5G Control Plane and then 5G Data Plane

✓ 5G Core Control plane includes **AMF, NRF, SMF, UDM** and it's deployed in central DC

✓ 5G Core Data plane includes **UPF** and it's deployed in edge DC

✓ Whitecruiser has deployed both kubernetes clusters

…demo
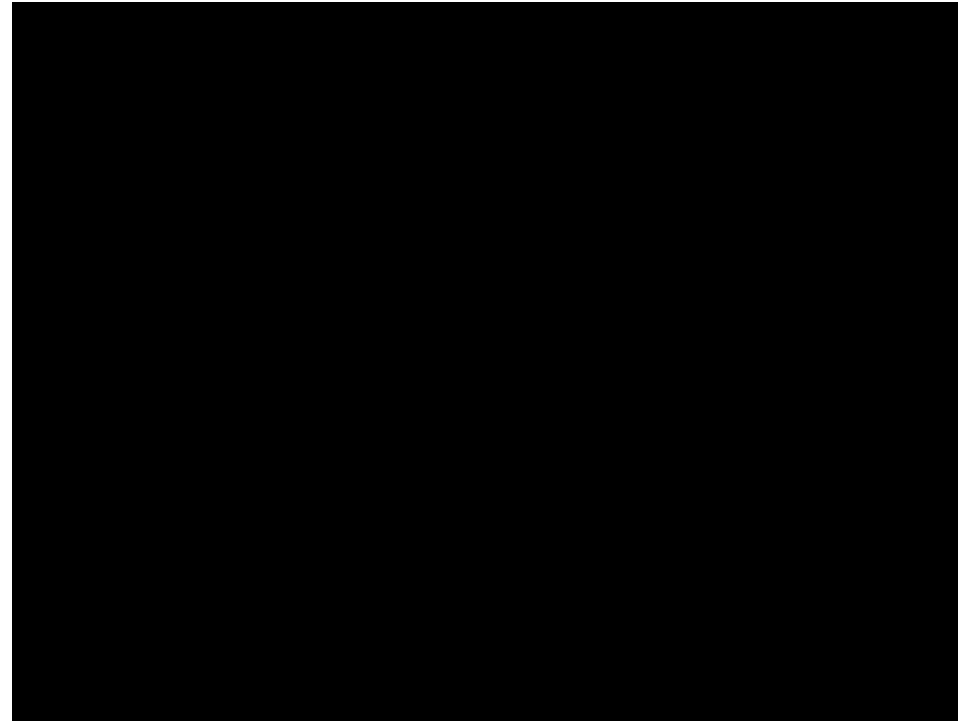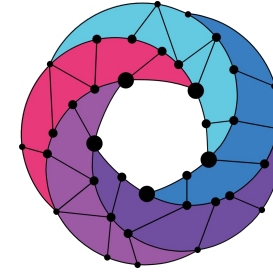
¡Thanks!

osm.etsi.org
osm.etsi.org/docs/user-guide
osm.etsi.org/wikipub