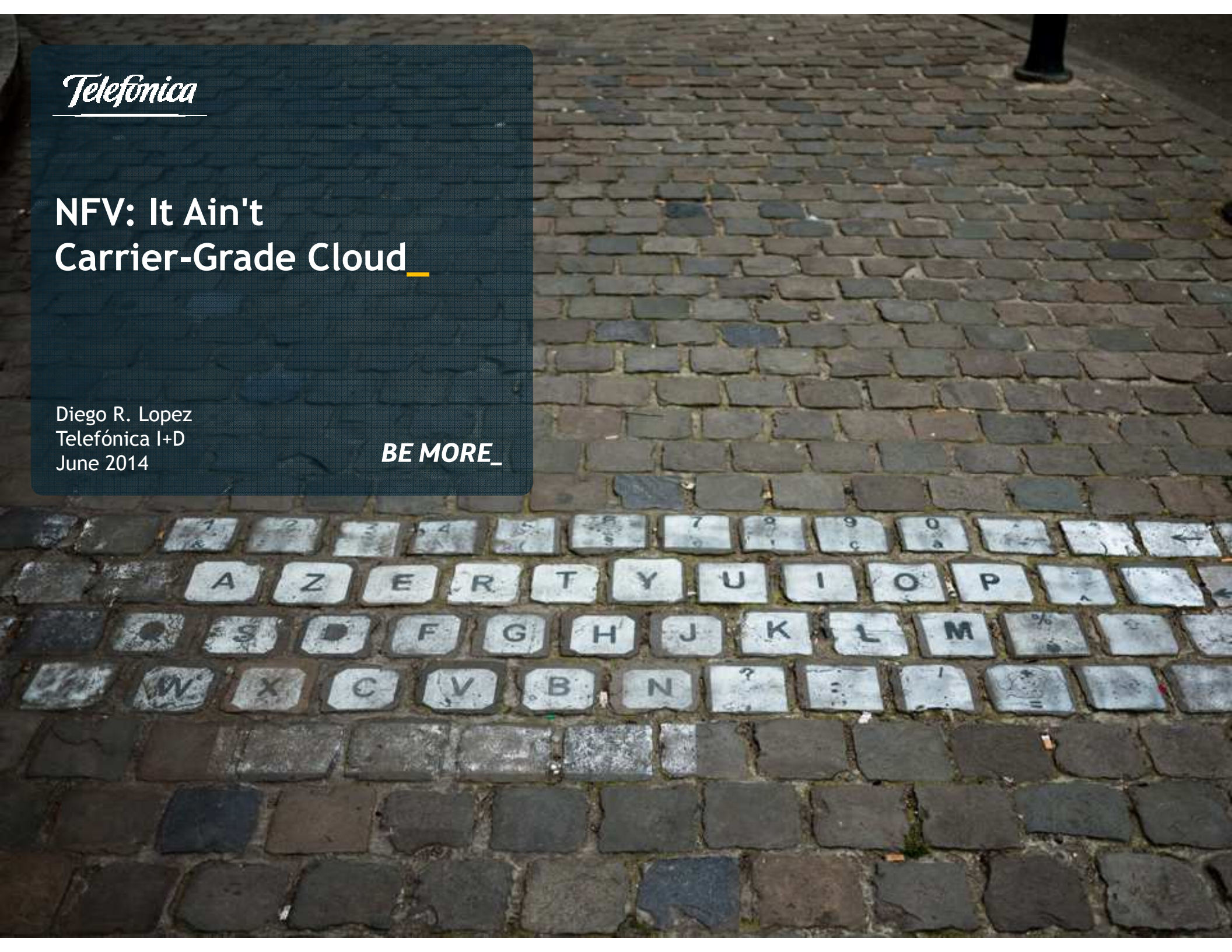


Telefónica

NFV: It Ain't Carrier-Grade Cloud

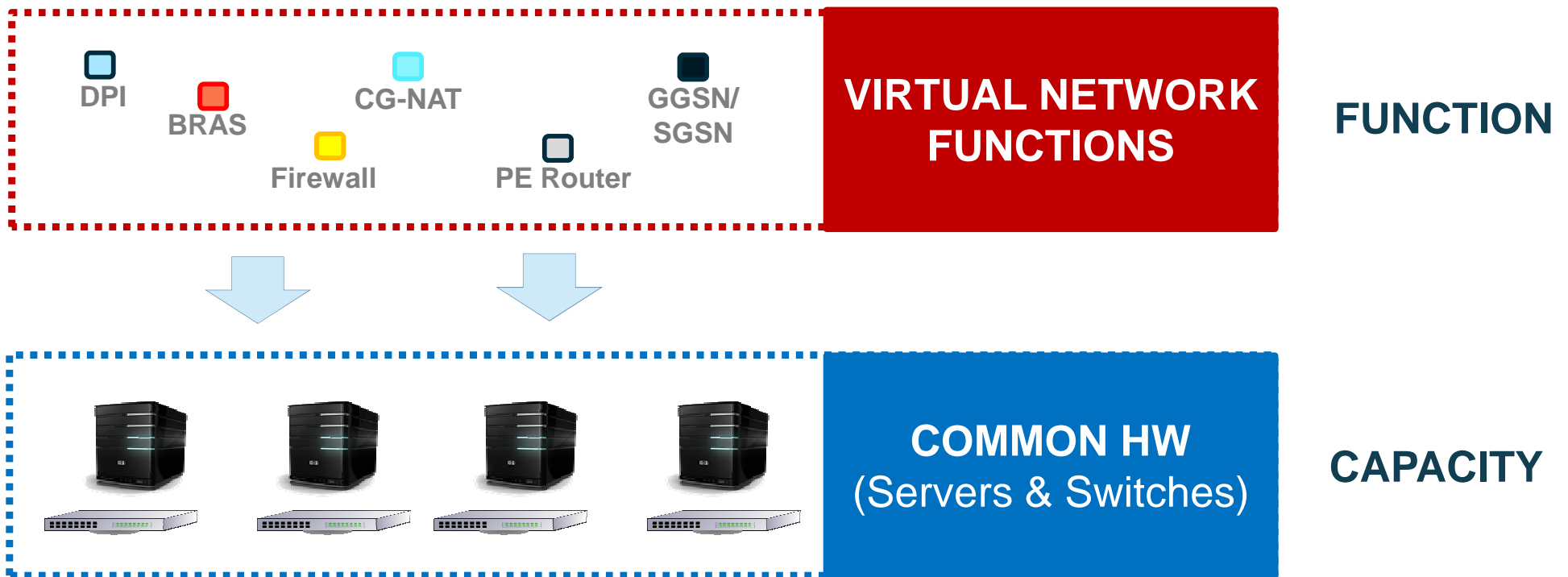
Diego R. Lopez
Telefónica I+D
June 2014

BE MORE_



The NFV Concept

Network functions are fully defined by SW, minimising dependence on HW constraints



It Ain't Cloud Applied to Carriers

The network differs from the computing environment in 2 key factors...



...which are big challenges for vanilla cloud computing.

AN ADAPTED VIRTUALISATION ENVIRONMENT IS NEEDED TO OBTAIN CARRIER-CLASS BEHAVIOUR

Cloud Computing vs NFV

CLOUD COMPUTING

1. PERFORMANCE BOUND TO CPU

2. AGGREGATED VIEW OF RESOURCES (CPU, memory, etc.)

3. ENDPOINTS

Applications need the OS

4. NODE-CENTRIC

Shapeless interconnection

5. MANY AND SMALL VMs

NFV

1. PERFORMANCE BOUND TO I/O & MEMORY ACCESS

2. NUMA VIEW

Internal architecture is relevant for guests

3. MIDDLEPOINTS

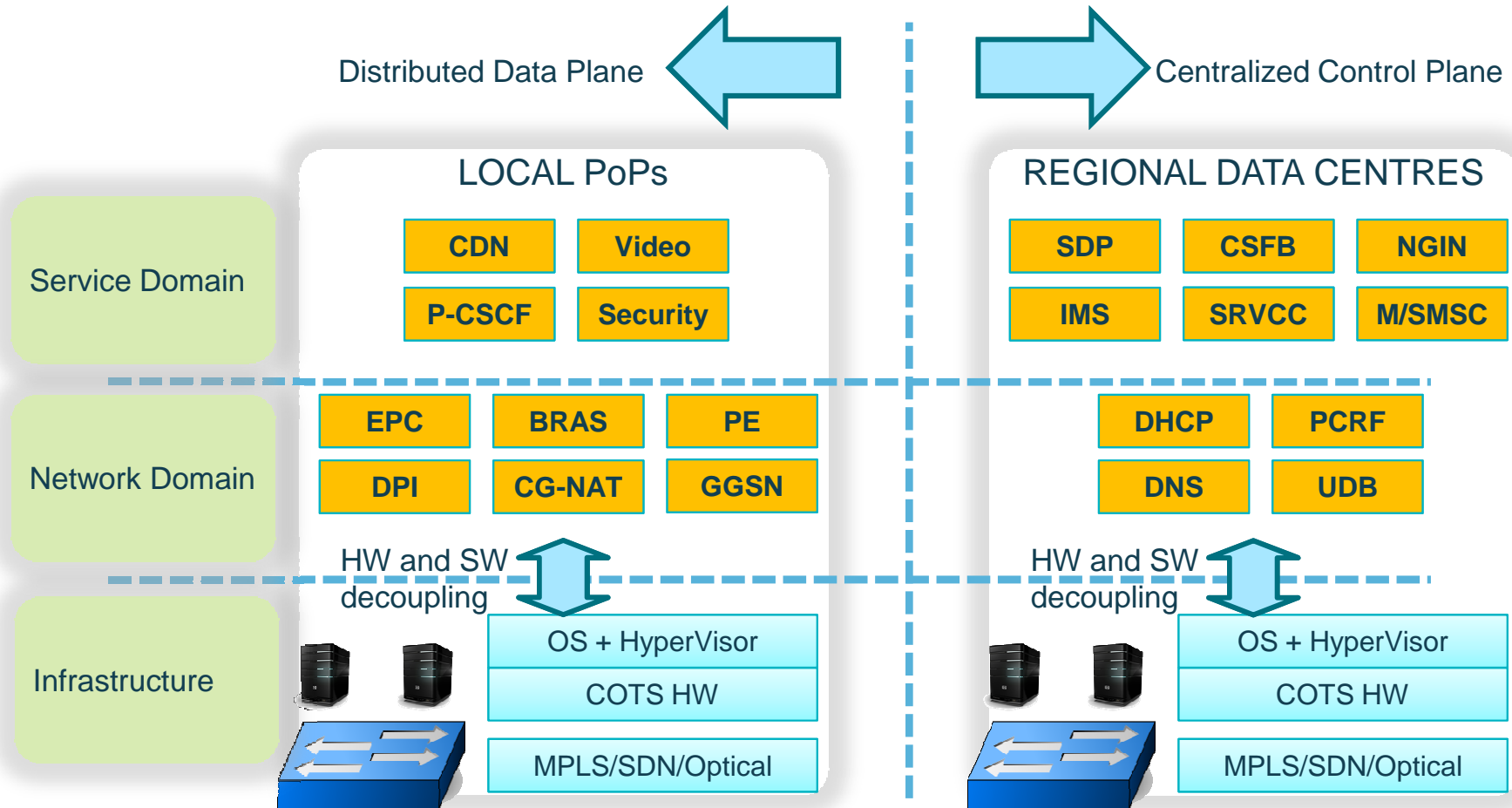
Data-plane network functions bypass the OS

4. NETWORK-CENTRIC

The network has a shape

5. FEW AND LARGE VMs

Redesigning Network Segments



Networks PoPs and datacentres intra- and inter-communications will be critical to guarantee network service elasticity and network plasticity