Future Network Technologies: What is the impact of future network technologies on carrier networks and services?

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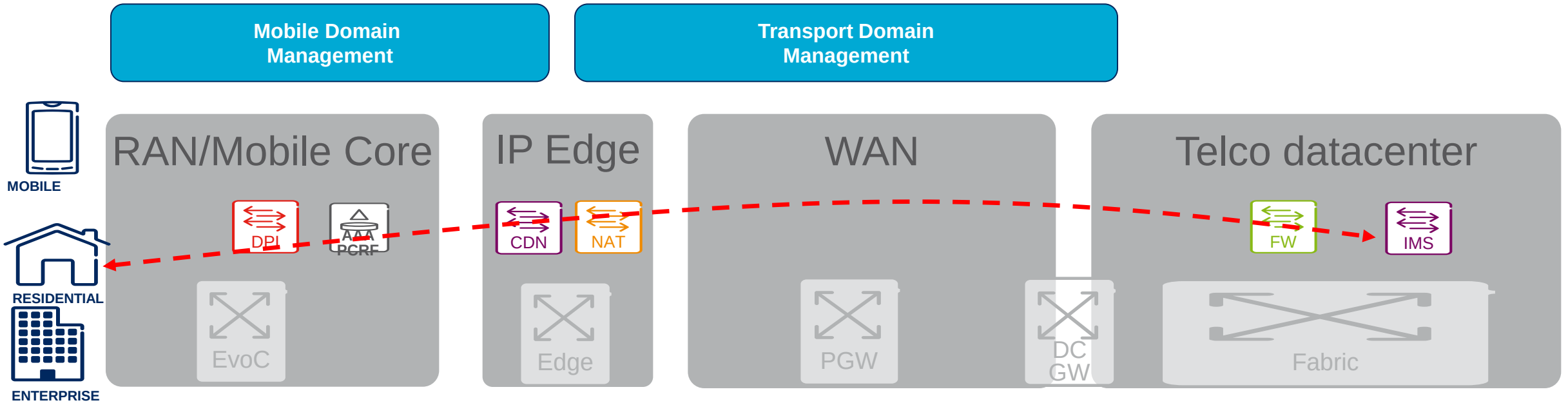
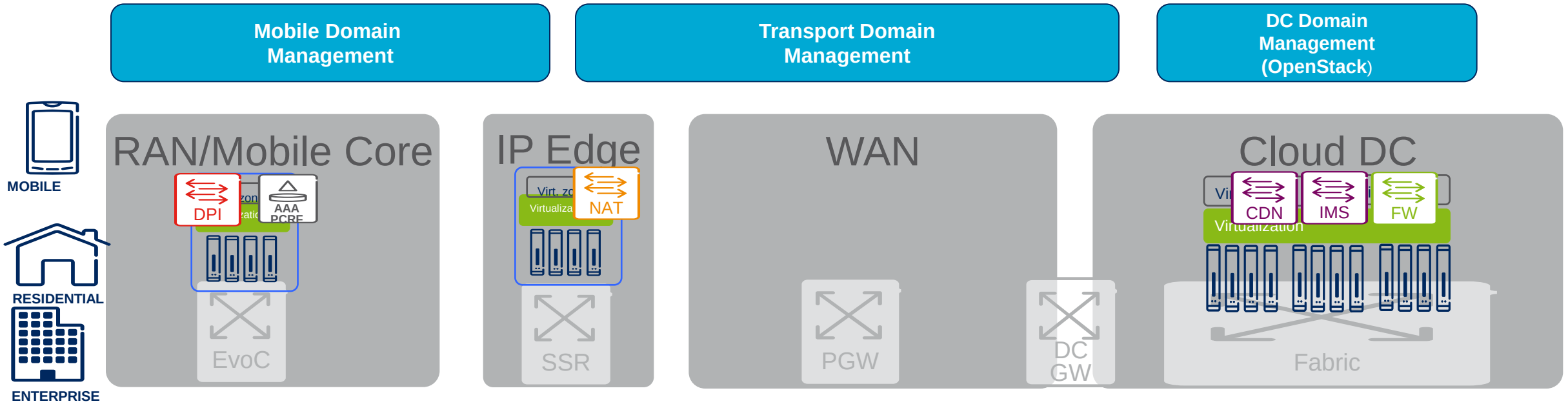
The traditional telco domain and central office data center



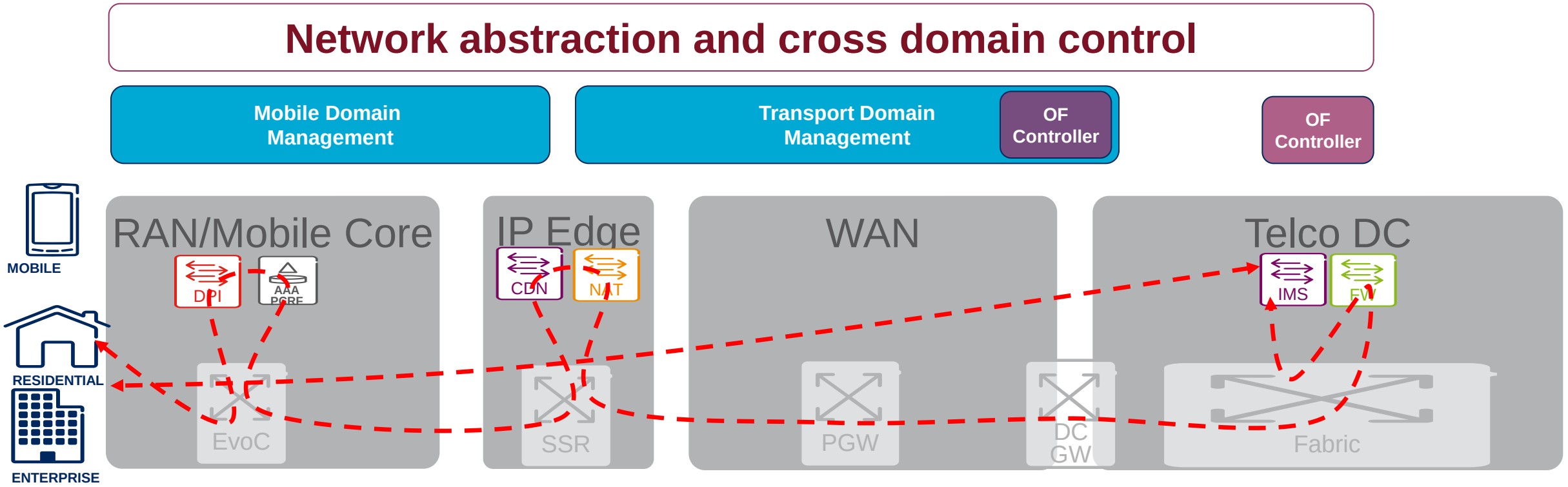
Traditional telco network with network functions geographically and topologically distributed across different domains and in the primary site central office. Functions are statically linked in the L2/L3 flows.

The arrival of cloud: distributed exec environments + V-APPS (NFV)



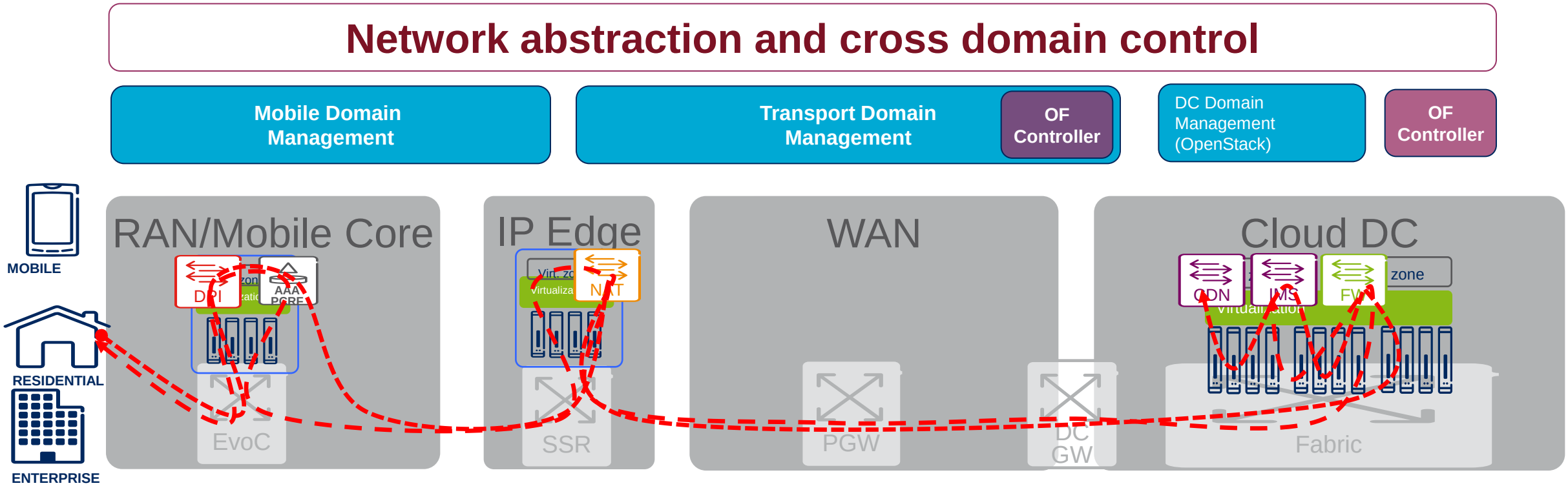
Distributed network enabled cloud execution environment allows virtualized network functions (vApps) to move topologically inside the distributed homogeneous exec environment. Cloud domain management becomes a key function

Network management and near real time control merge: SP-SDN



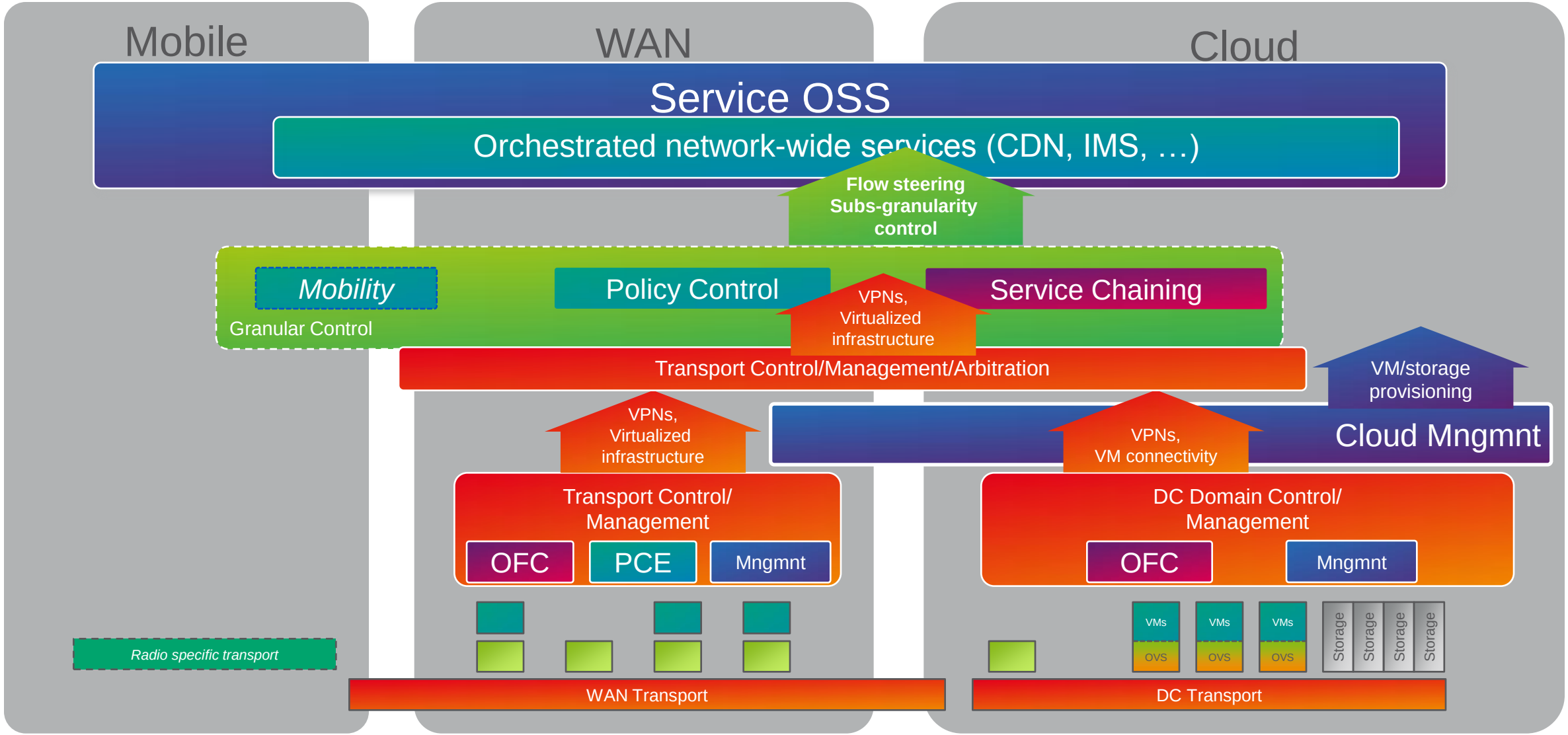
SP-SDN merges traditional network management with near real time control of network status and characteristics, whether in an OpenFlow controlled domain or in a traditional network domain. OpenFlow controls the networking infrastructure inside the cloud DC.

Cloud & SDN & V-APPS (NFV)



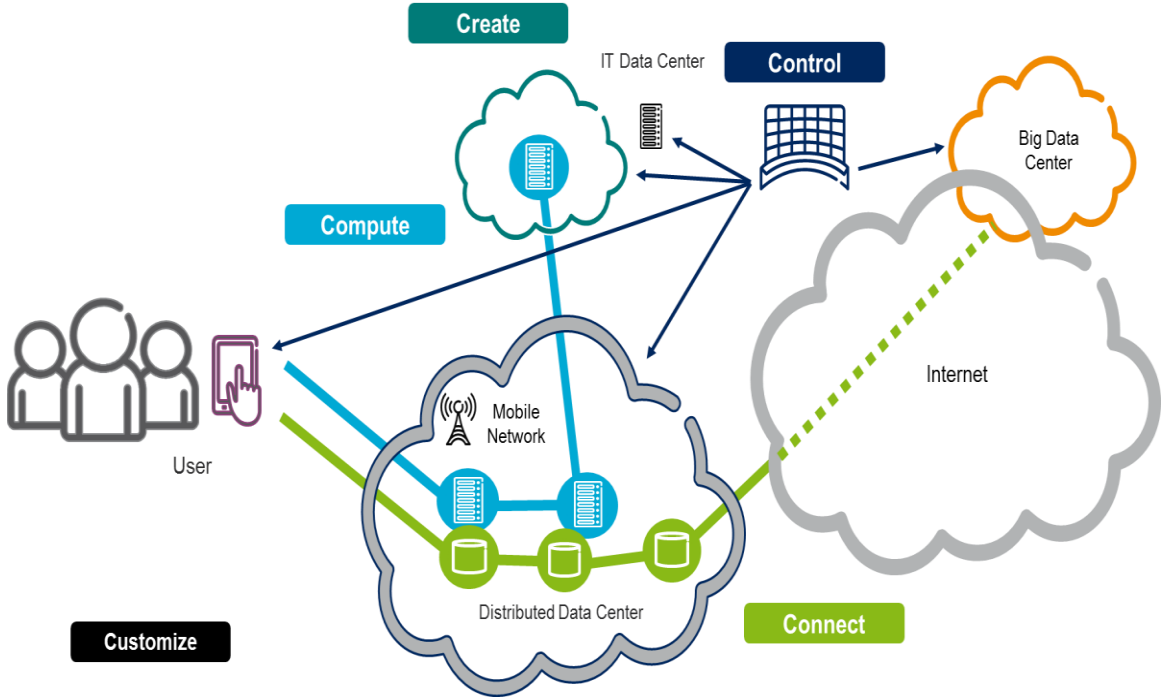
The two distinct technical architectures merge together to create a programmable network enabled cloud execution environment that orchestrates on computing, storage and end to end networking capabilities in traditional and OpenFlow enabled domains and delivers the NFV vision

Functional Architecture

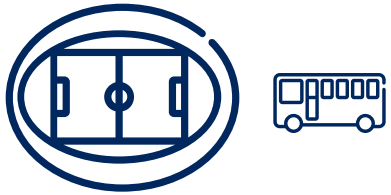


The Network Enabled Cloud

- Basic premise:
  - Cloud is about an application deployment model:
    - Flexible
    - Virtualized
    - Automated
  - Not strictly about gigantic data centers
- Manage a collection of data centers of all sizes as single compute/storage/networking resource
  - Gigantic, macro, mini, micro, nano
- Interconnect with provisioned, high bandwidth links
  - VPNs
- Location becomes a deployment parameter
  - Country, city, state



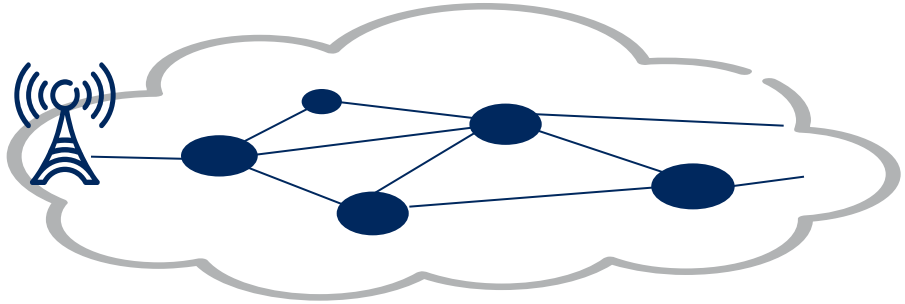
Efficient resource utilization



Adapting to location/crowd specific usage

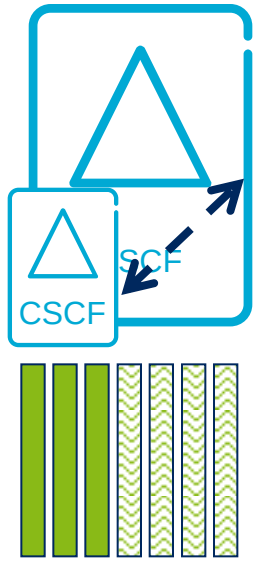
Network wide virtual resources for
- Resource allocation based on usage
- Event based relocation of services
- Improved network efficiency

Adapting to time of day service usage



Relocating an application on the Network Enabled Cloud

Auto-scaling for shared resource utlization and power efficieny



The Workshop on Distributed Cloud Computing (DCC 2013) will be co-located with IEEE/ACM Conference on Utility and Cloud Computing (UCC), 9-12 December 2013, Dresden, Germany

Chairs:
James Kempf, Ericsson Research, Silicon Valley, USA
Stefan Schmid, Telekom Innovation Laboratories (T-Labs) & TU Berlin, Berlin, Germany

Dates:
Submissions due: **21 July 2013**
Notification of acceptance: **10 September 2013**
Camera-ready papers due: **27 September 2013**
Workshop: **13 December 2013**

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