

# Revolutionizing Carrier Service Delivery using a Software Defined native IP Network

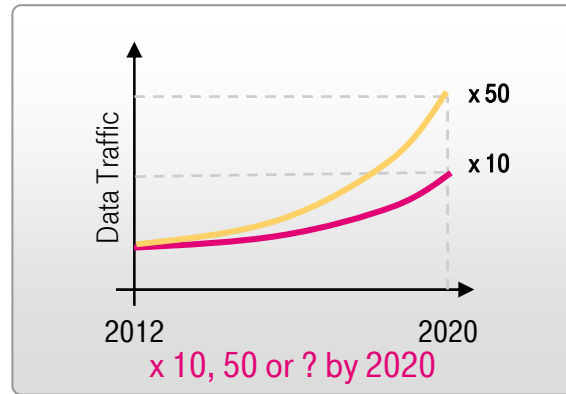
Axel Clauberg, Vice President IP Architecture & Design, Deutsche Telekom AG

Life is for sharing.



# Carrier Challenges

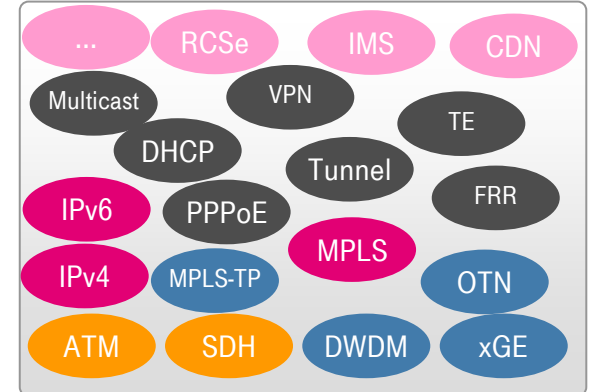
## Traffic Growth



## Competitive Pressure



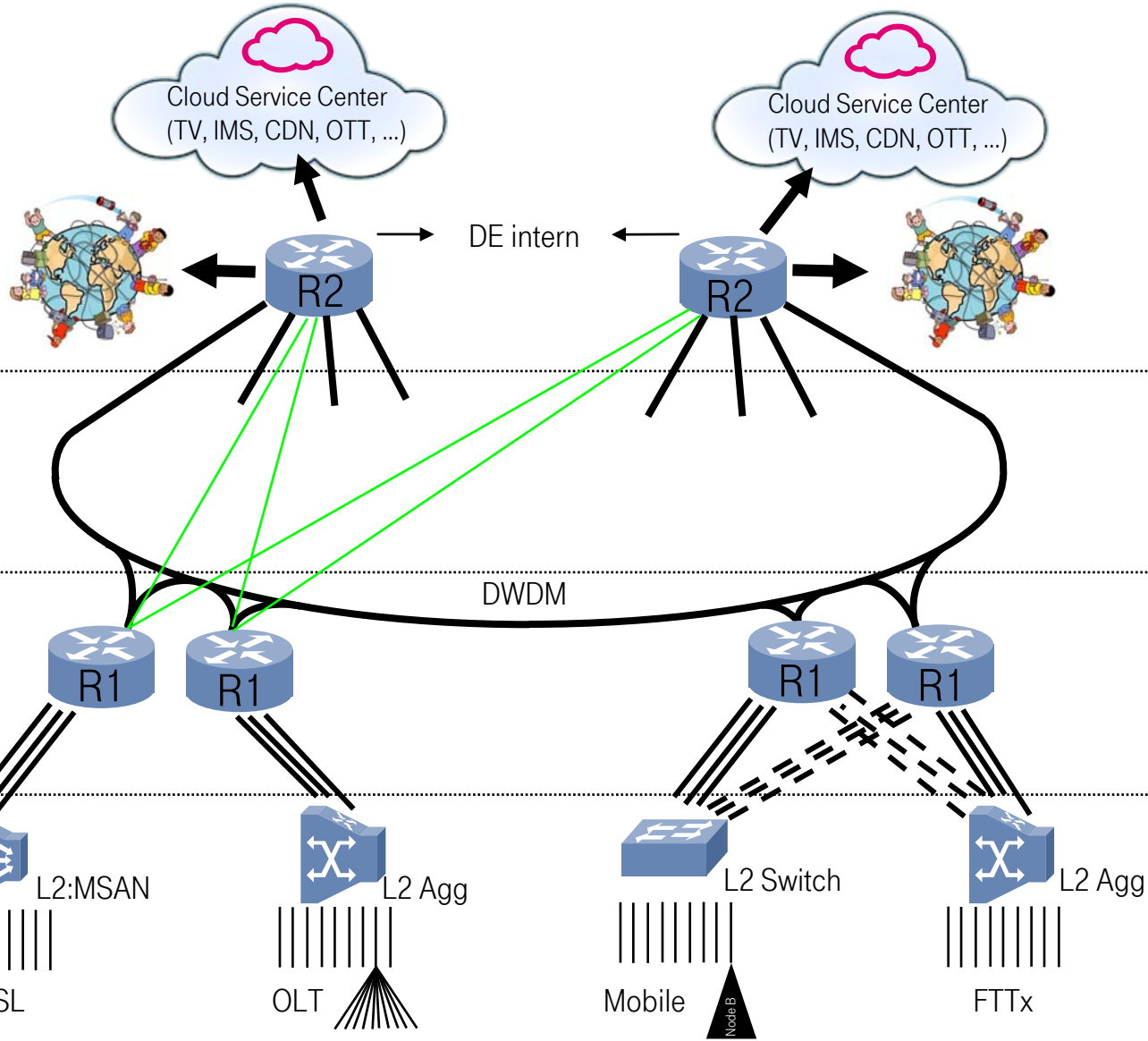
## Cost & Complexity



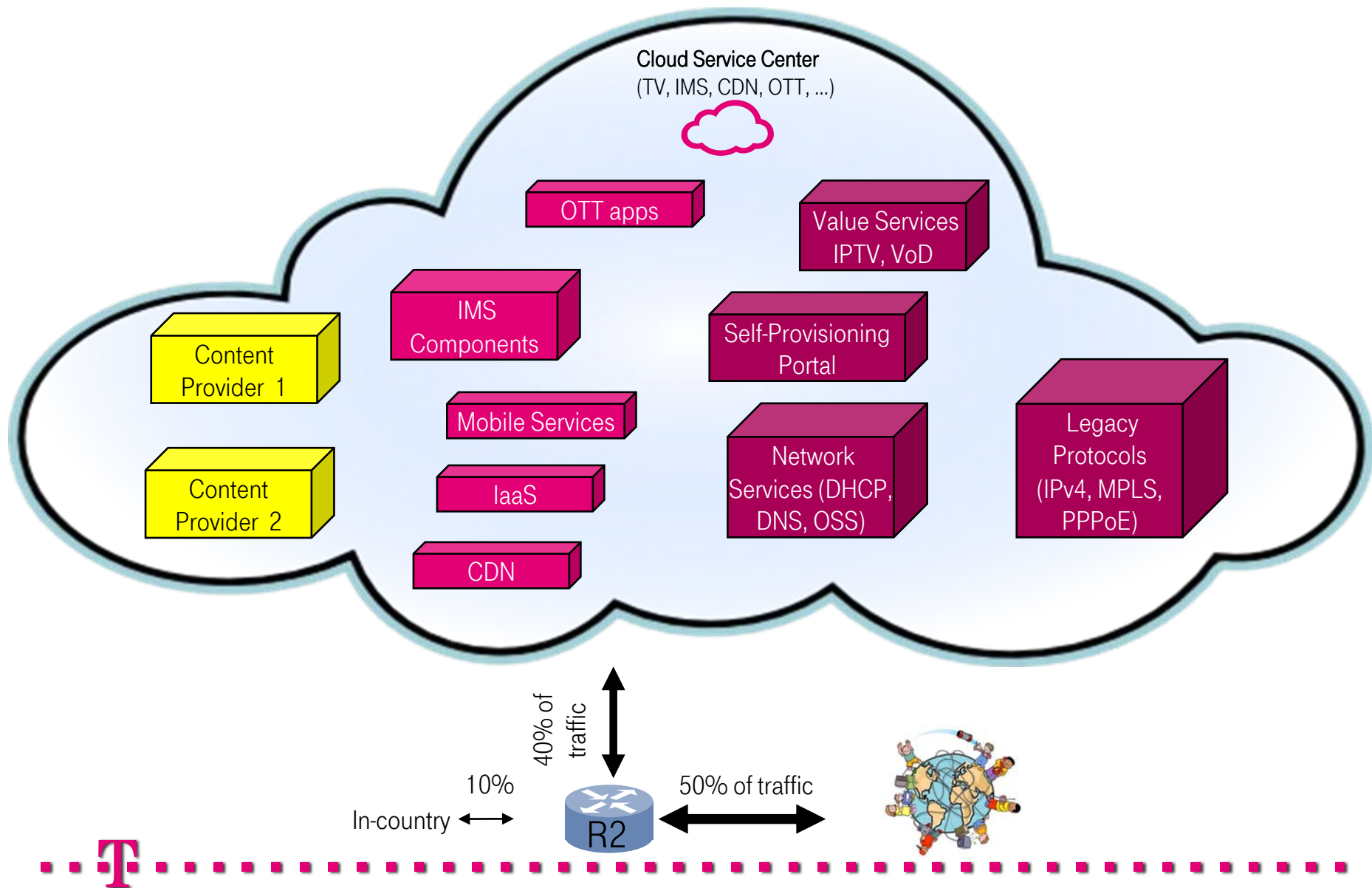
## Innovation



# The TeraStream Architecture



# What's in the Cloud Service Center ?



# TeraStream – A Cloud Enabled SDN Architecture

Wholesale

OTT Apps

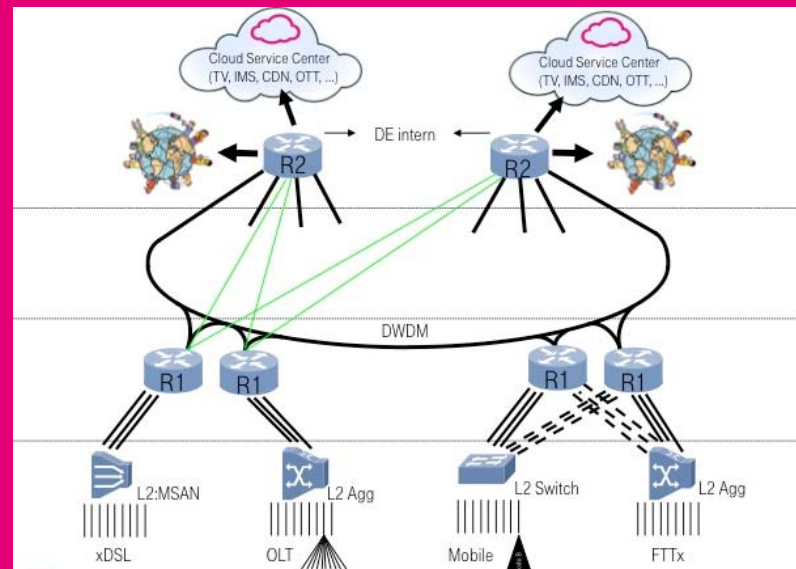
Business-Services

BSS

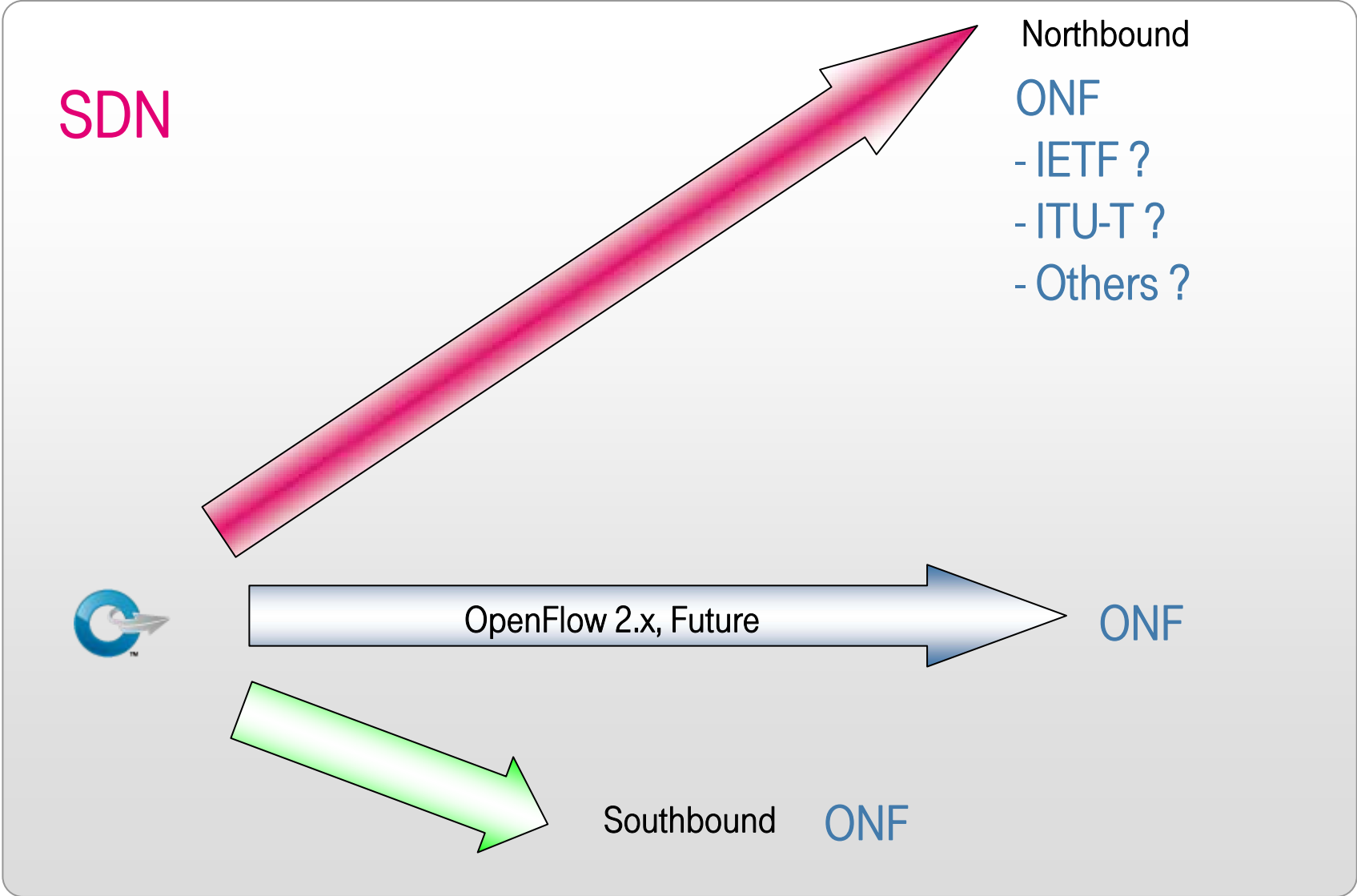
Engineer CLI

Realtime OSS

## TeraStream Cloud-Enabled Native IP Fabric



# From OpenFlow to SDN



# TeraStream & OpenFlow

## Use Case 1: Cloud Service Center

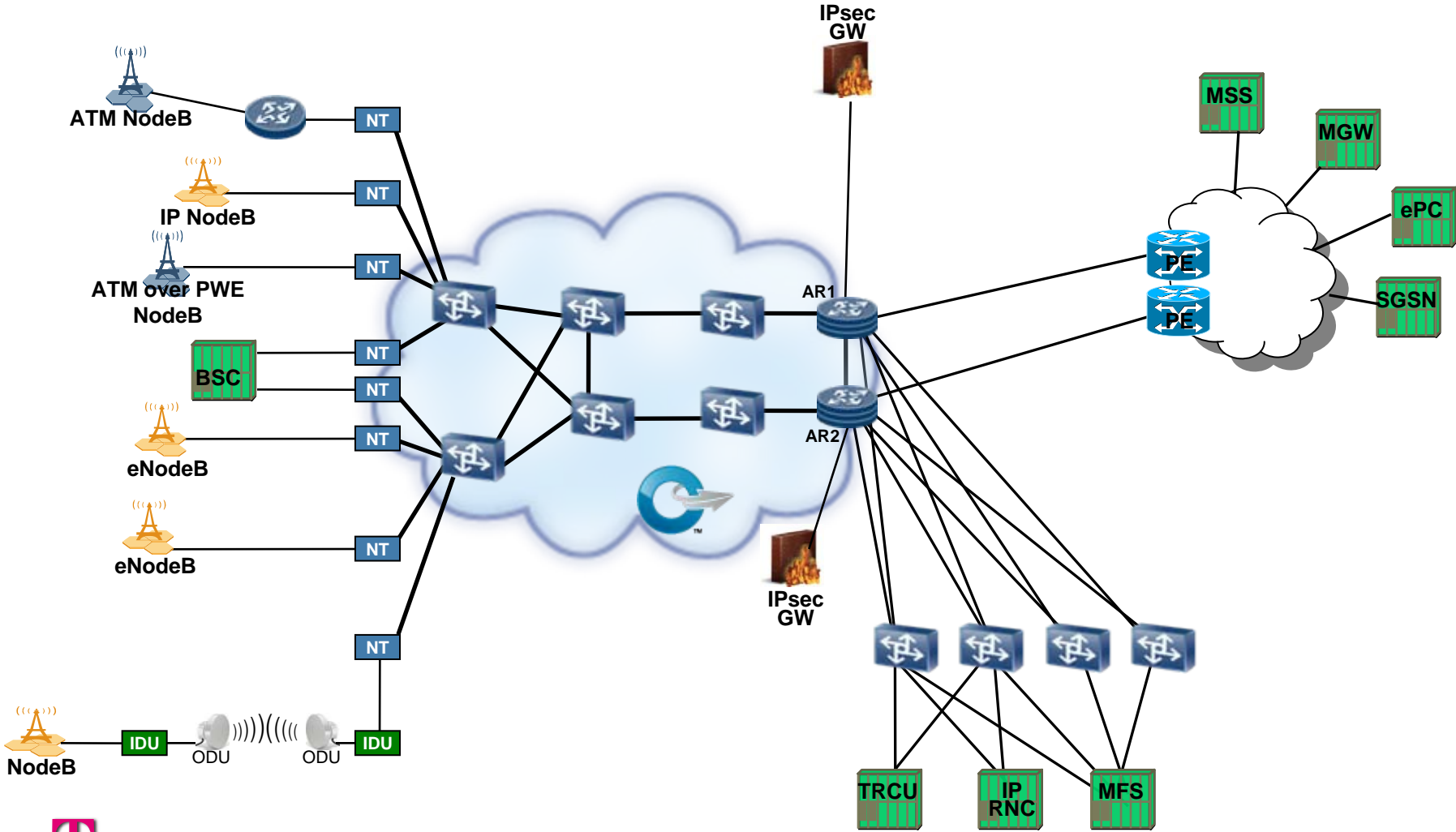
- Reduce Complexity
- Improve Efficiency
- Provisioning knows VM location, why wait for gratuitous ARP ?

## Use Case 2: Access

- RAN
- Fixed



# Use Case: OpenFlow in the RAN ?





# TeraStream & OpenFlow

## Use Case 1: Cloud Service Center

- Reduce Complexity
- Improve Efficiency
- Provisioning knows VM location, why wait for gratuitous ARP ?

## Use Case 2: Access

- RAN
- Fixed

## Why not in the core ?

- ++ Further reduction of complexity (e.g. tunneling)
- BGP won't disappear

Next steps are depending on the results of the ONF Hybrid Network WG



# Summary

TeraStream is a Cloud-Enabled Native IP architecture

- Cost leadership
- Service leadership
- Innovation Leadership
- Fixed Mobile Integration

From Realtime OSS to a Software Defined Network

Future steps

- Openflow Integration in Cloud Service Center
- Openflow in Access
- Hybrid

