

ZUKUNFTSBILD DIGITALE IKT- BASISINFRASTRUKTUREN UND - DIENSTE 2025

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Deutsche Telekom



THE DIGITAL GIGABIT-SOCIETY



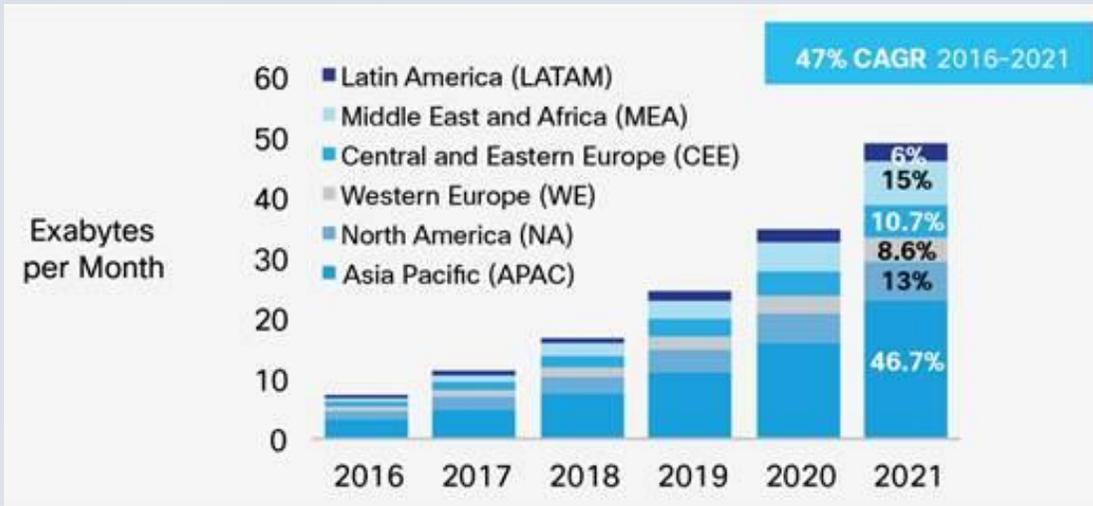
FUTURE NETWORKS

MAJOR PARDIGMN SHIFTS TO SATISFY FUTURE CUSTOMER DEMAND



OUR SITUATION

Global Mobile Data Traffic Forecast by Region



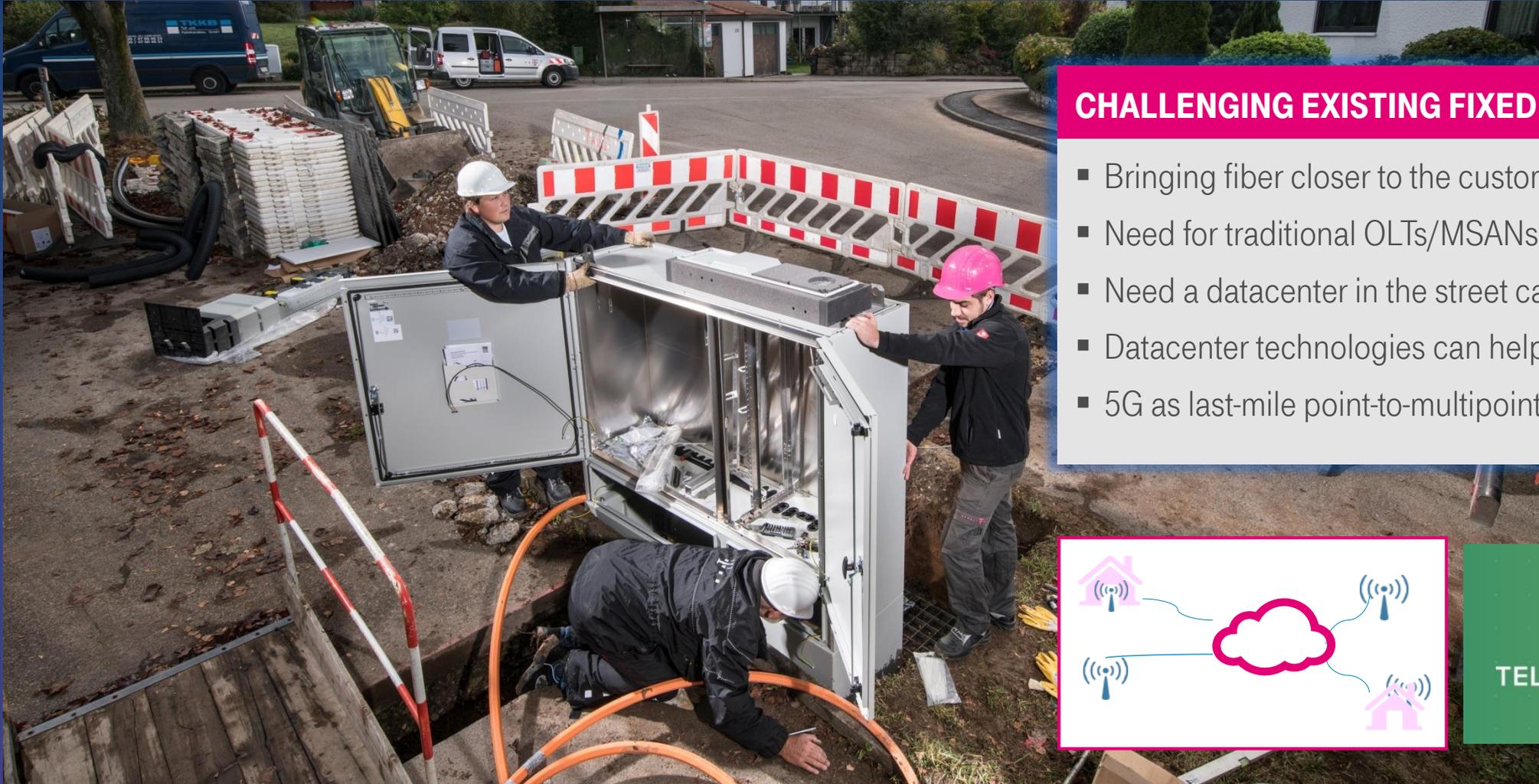
Source: *Cisco VNI Mobile, 2017

- Mobile Data is forecast to grow at ~50% per annum, **7X today's traffic by 2021***
- Mobile video traffic was ~60% of mobile data traffic in 2016*
- Video will account for ~80% of the world's mobile data traffic by 2021*
- Most video today is SD, according to Netflix; HD (1080) is 4X, UHD (4K) is 10X



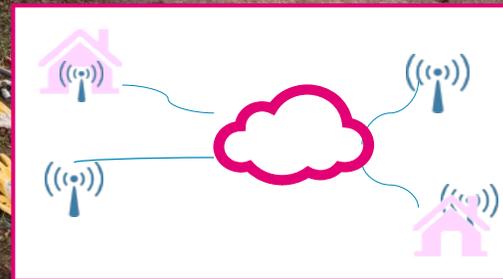
We need more radical approaches to deliver **CAPITAL EFFICIENCY !**

NEW THINKING – IP BASED ACCESS



CHALLENGING EXISTING FIXED ACCESS

- Bringing fiber closer to the customer.
- Need for traditional OLTs/MSANs?
- Need a datacenter in the street cabinet?
- Datacenter technologies can help.
- 5G as last-mile point-to-multipoint access.



XRAN – FOR A MORE FLEXIBLE RAN

NEW THINKING FOR RAN DEPLOYMENTS

SHARING MODELS TO ACHIEVE 100% COVERAGE, BUT ALSO SMALL CELLS?



XRAN

radisys



ARICENT™



TEXAS
INSTRUMENTS

SK telecom

Stanford
University

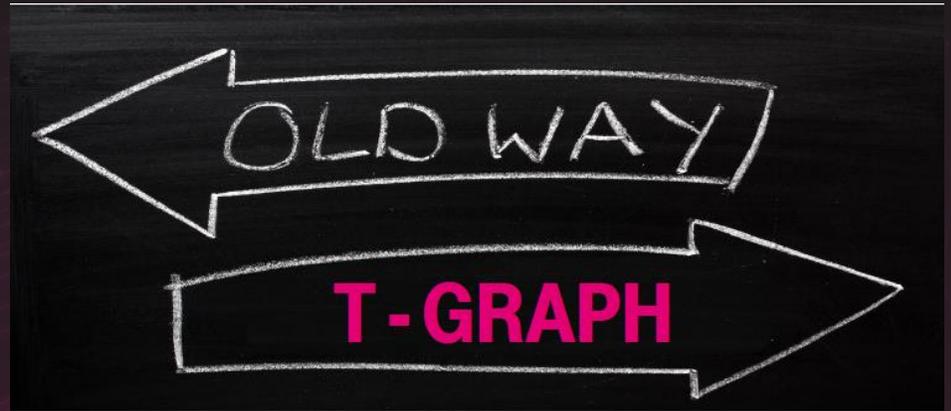


FACEBOOK T-GRAPH APPROACH

WIRELESS-TO-THE-HOME WITH 60GHZ RADIO

HIGHLY DIRECTED BEAMS

MESHED NETWORK FOR BACKHAUL



Break the contradiction of best customer experience and low cost technology

Technology - automation first:

- Low Cost WiGig technology
- Low Cost FSO technology
- Unlicensed spectrum
- Low cost synchronous Ethernet
- Smart and efficient cloud control for high service quality

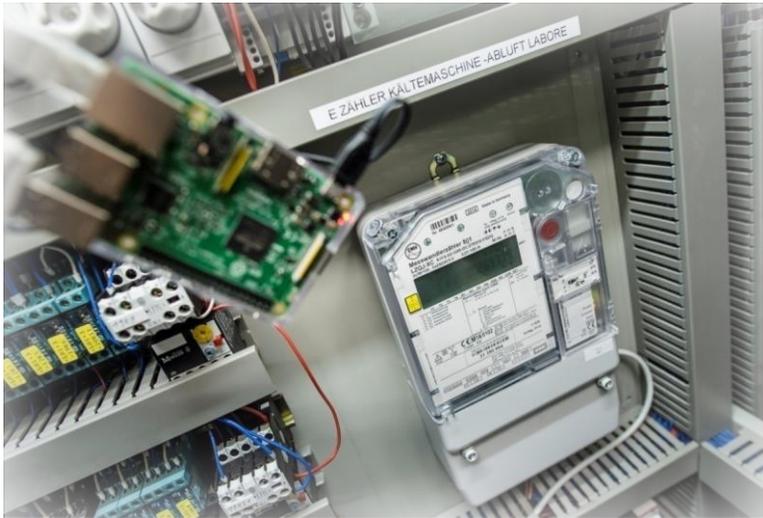
Operation support & tools

- Enable highly automatic planning and operation
- Synergetic rollout

ADDRESSING VERTICALS' BUSINESS NEEDS

CAN WE EFFICIENTLY PROVIDE DEDICATED 5G SLICES FOR VERTICALS?

INDUSTRIAL SLICE



AUTOMOTIVE SLICE



CONSUMER EMBB SLICE

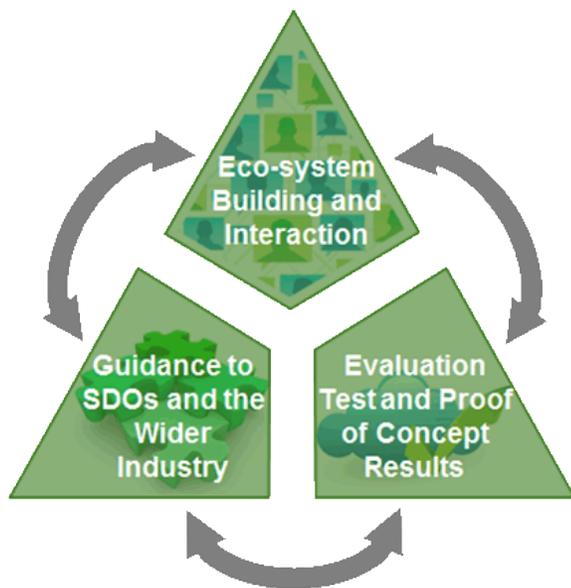


NETWORK SLICING ALLIANCE: TOWARDS COMMERCIAL SLICING



INDUSTRY ALLIANCES AND PROJECTS

NGMN ALLIANCE



5GAA FOUNDED



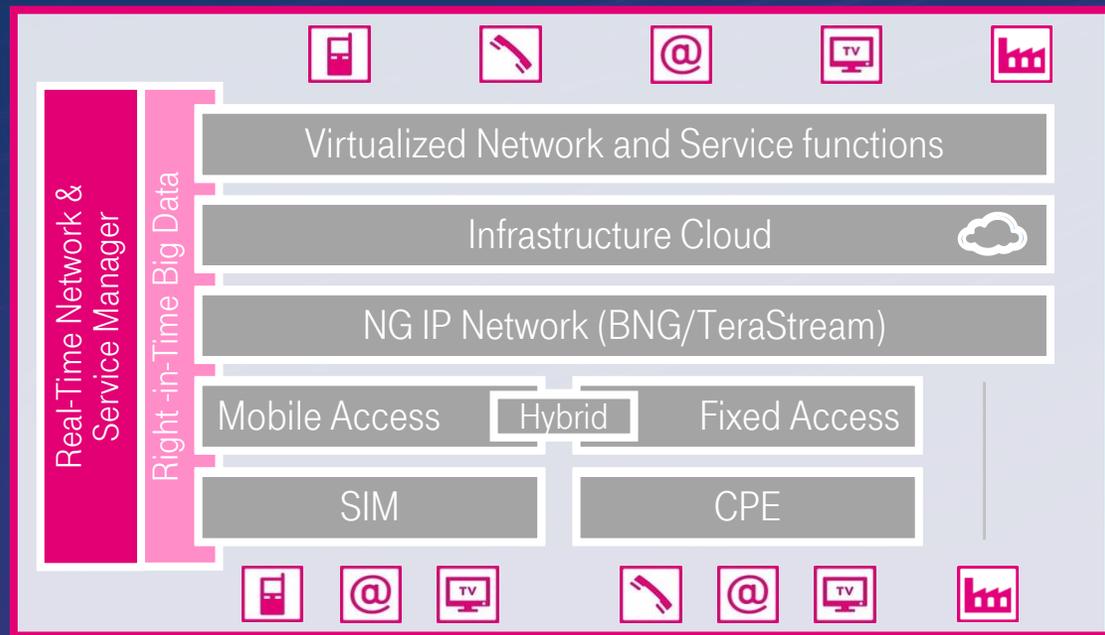
RADICAL NEW APPROACHES



The background features a dark gradient transitioning from black at the top to a deep purple at the bottom. It is overlaid with a complex pattern of thin, light pink lines that form a grid-like structure, with some lines curving and intersecting. Three prominent starburst or lens flare effects in a vibrant pink color are scattered across the scene, one in the upper center, one in the lower left, and one in the upper right. A thick, curved band of a darker purple hue sweeps across the lower half of the image.

THANK YOU

TIP - AN ALTERNATIVE VISION FOR FIXED/MOBILE CORE TELECOM INFRA PROJECT



A NEW VISION FOR FIXED ACCESS & MOBILE CORE

- Program Services instead of re-architecting Network & OSS for each new service.
- Community-driven, more disruptive innovation.
- Cloud & Software mindset.
- Sharing of best practices – Telco & Internet Companies.
- Use of standardized HW
- Enable multi-vendor approach

TIP – OVER 400 MEMBERS



TELECOM INFRA
PROJECT



facebook



Telefonica



Deloitte.



NEXIUS



JUNIPER
NETWORKS



NOKIA



Quortus



radisys

Tech
Mahindra



infinera



VANU



amdocs
embrace challenge
eXperience success

Aricent
Engineering the Future



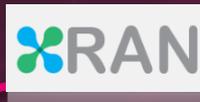
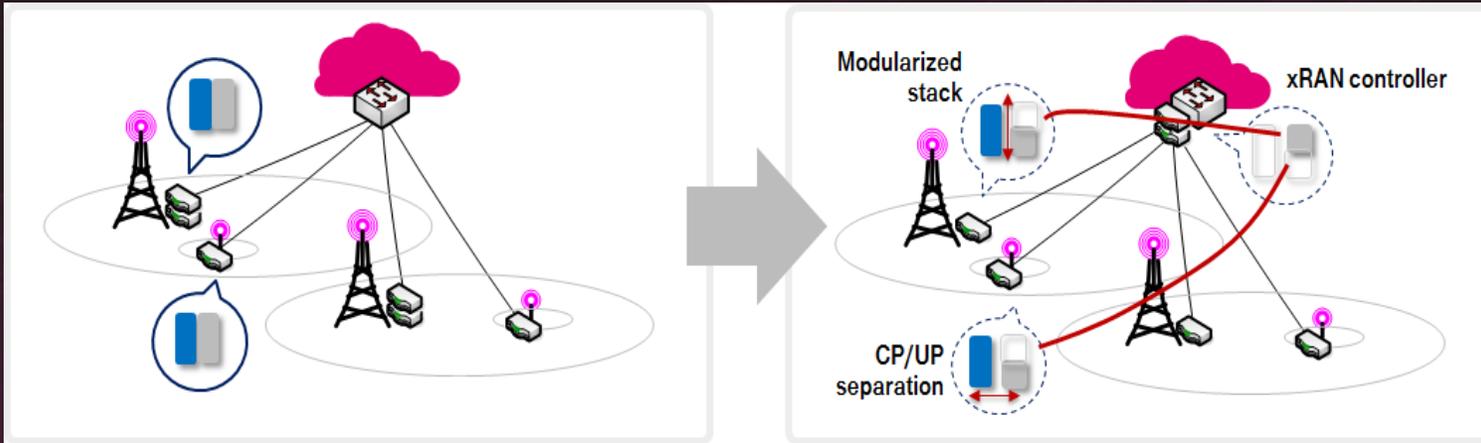
HCL



sysmocom



XRAN – AN ALTERNATIVE VISION FOR RAN DEVELOPMENT



HW & SW tightly coupled
 Monolithic SW implementation
 Specialized HW
 Closed interfaces

Decouple HW from SW
 Decouple User & Control plane
 Modularize protocol stack
 Open & standardize interfaces

Use of standardized HW

Enable better NW orchestration

Provide NW programmability

Enable multi-vendor approach

WORLD'S FIRST INTERCONTINENTAL 5G TRIAL NETWORK

THE WORLD'S 1st FEDERATED NETWORK SLICING

GLOBAL CONNECTIVITY WITH UNIFIED SERVICE EXPERIENCE

