Netzkonvergenz - Das Zeitalter neuer Konnektivitätslösungen

FTTH Forum, Baden, 7. Mai 2019
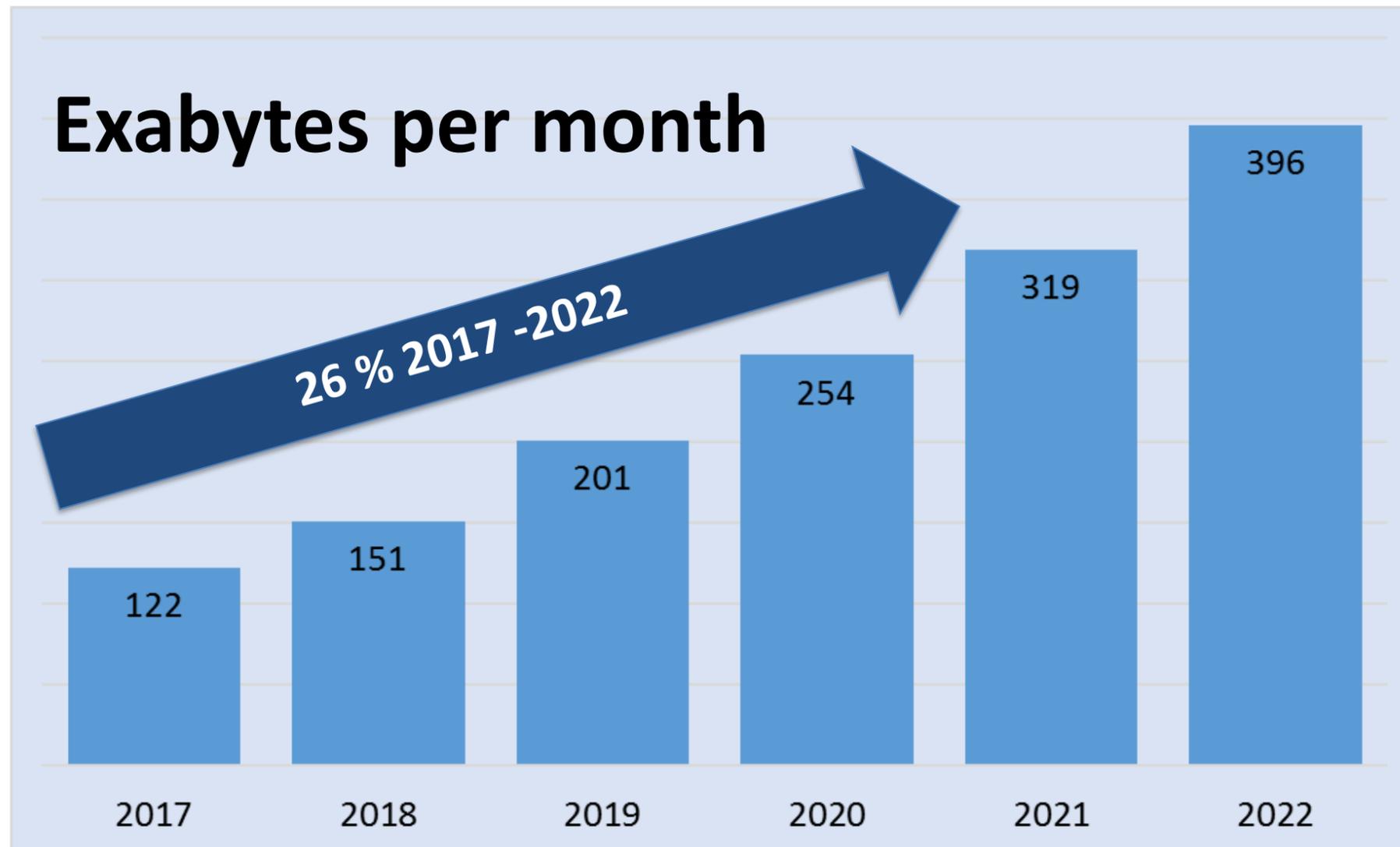
Jan Schindler, Prysmian Group

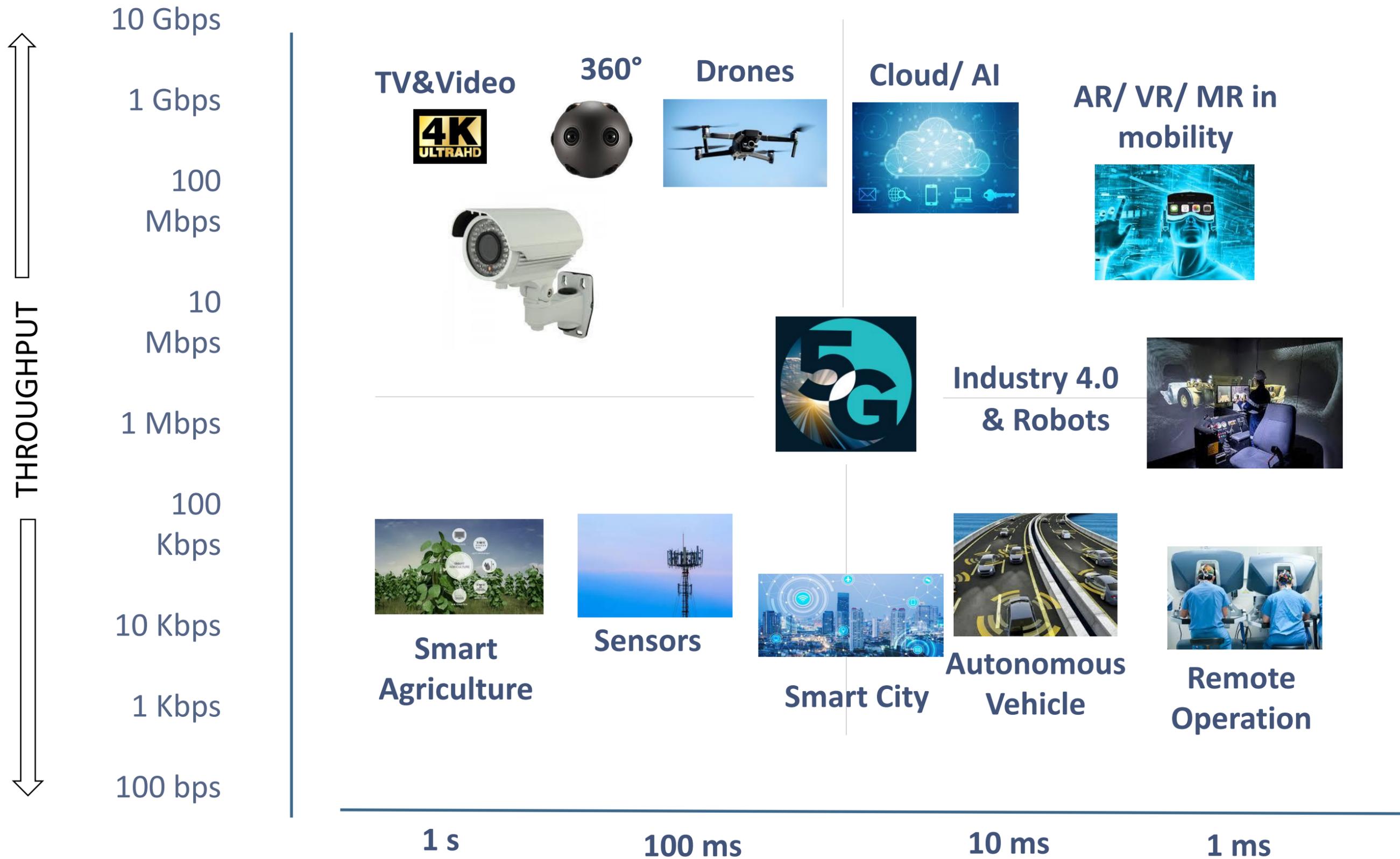# Telco's Market outlook: data traffic demand is exploding

Data Traffic demand will explode in the next decade

Exabytes per month

26 % 2017 -2022

Year	Value
2017	122
2018	151
2019	201
2020	254
2021	319
2022	396

- **Annual** global IP traffic will reach 4.8 ZB per year by 2022 (slight increase in expectations over last year's forecast)
- **Global IP traffic** will increase nearly threefold over the next 5 years
- Traffic from wireless and mobile devices will account for more than 71 percent of total IP traffic by 202
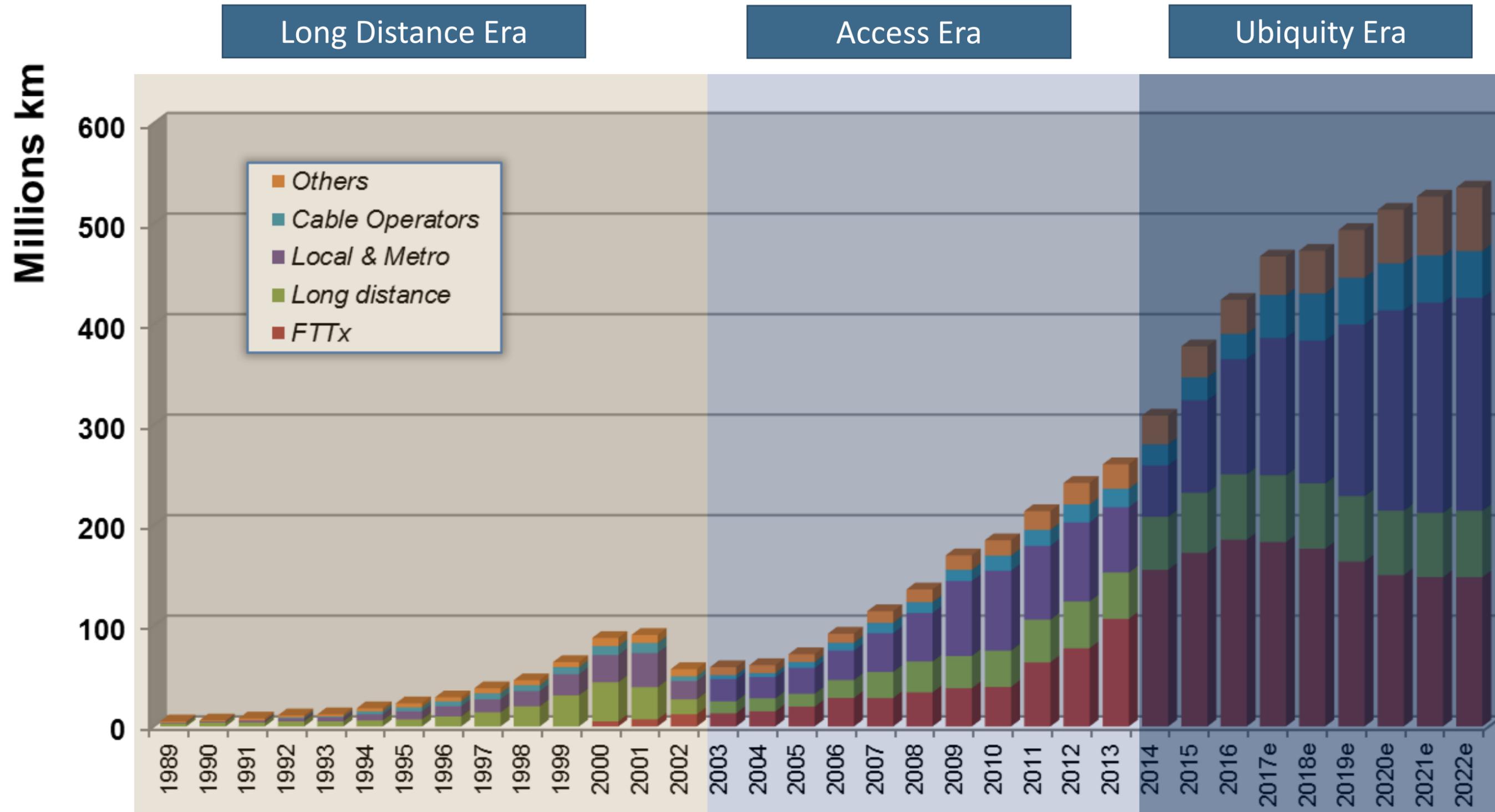- **... and is growing, growing……**

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With 5G multi-service network, new service will emerge

THROUGHPUT (vertical axis): 10 Gbps, 1 Gbps, 100 Mbps, 10 Mbps, 1 Mbps, 100 Kbps, 10 Kbps, 1 Kbps, 100 bps

Horizontal axis: 1 s, 100 ms, 10 ms, 1 ms

TV&Video · 360° · Drones · Cloud/ AI · AR/ VR/ MR in mobility · Industry 4.0 & Robots · Smart Agriculture · Sensors · Smart City · Autonomous Vehicle · Remote Operation
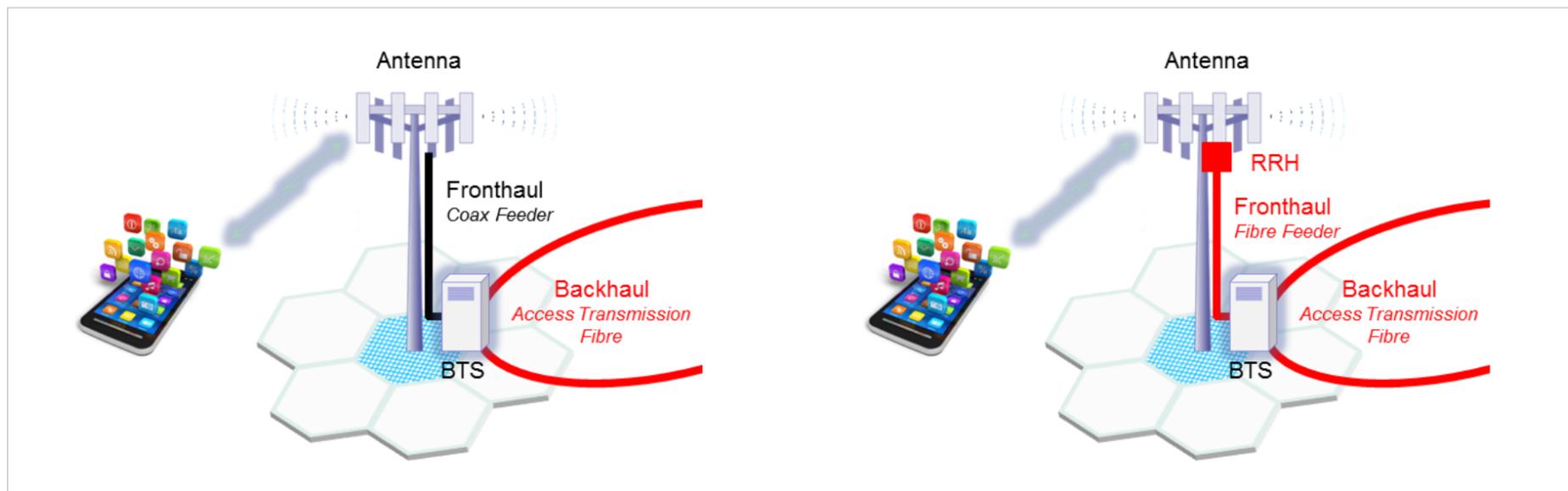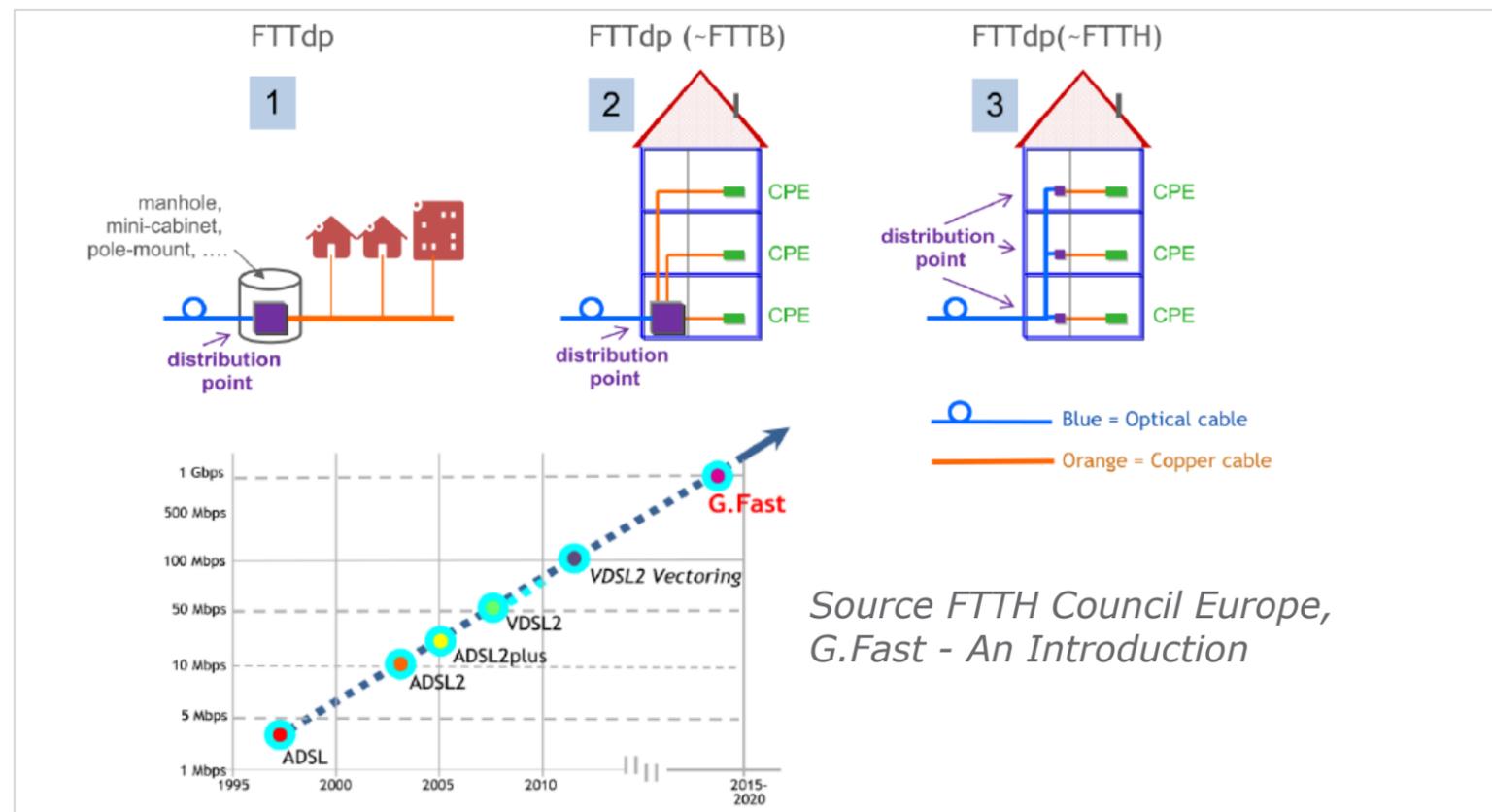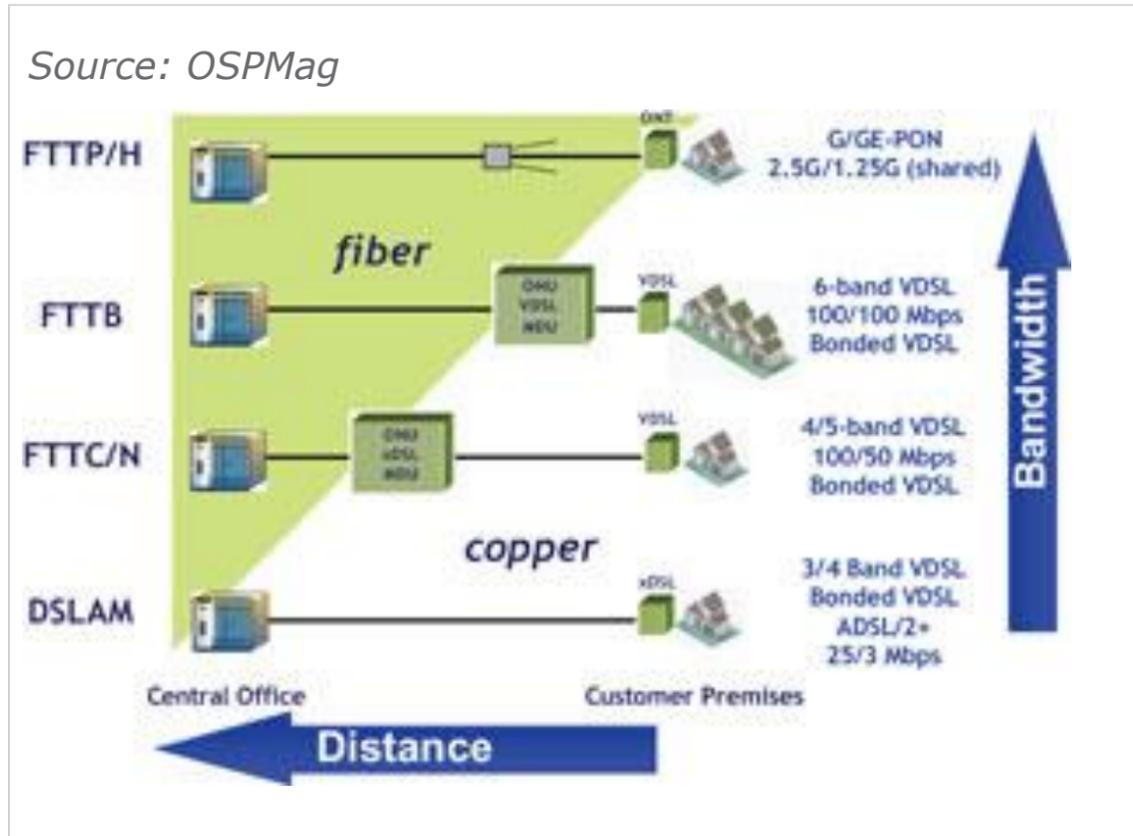
Source: Orange

World Fibre Demand Drivers – Now Changing Dimension!

Source: CRU International Sep 2017

Access **Era – Fibre As The Common Denominator**

Source: OSPMag

Source FTTH Council Europe, G.Fast - An Introduction

FTTN: Fibre To The Node/Neighbourhood
FTTC: Fibre To The Curb
FTTS: Fibre To The Street
FTTB: Fibre To The Building/Basement
FTTCab: Fibre To The Cabinet
FTTdP: Fibre To The Distribution Point
FTTP: Fibre To The Premises
FTTH: Fibre To The Home
FTTO: Fibre To The Office
FTTD: Fibre To The Desk
FTTLA: Fibre To The Last Amplifier
FTTA: Fibre To The Antenna
...

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… and With IoT's Tens of Billions of Devices On The Network!
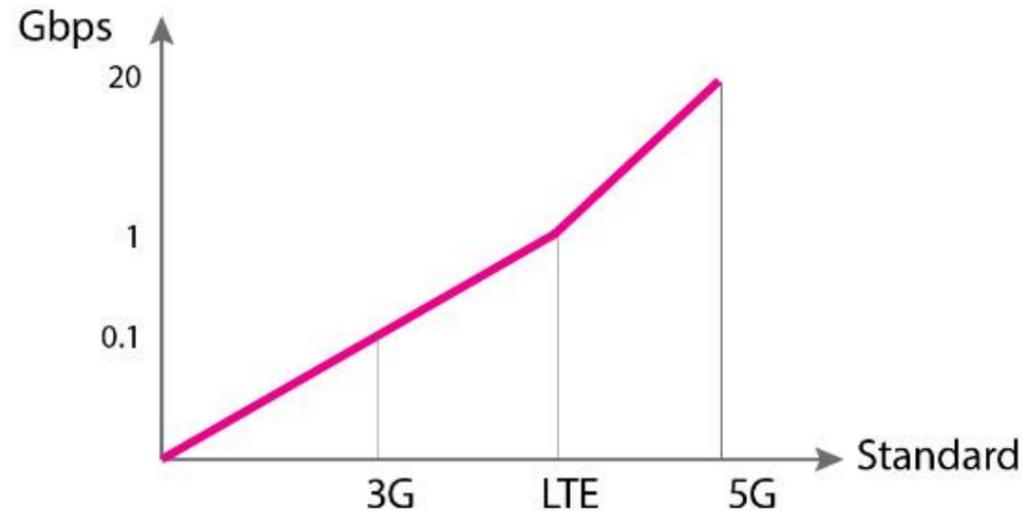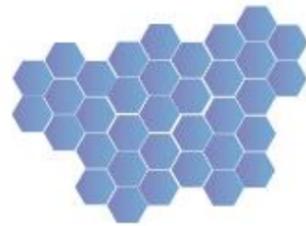
27.1 billion in 2021 (Cisco VNI)

29 billion by 2022 (Ericsson)

20.4 bn by 2020 (Gartner)

30bn by 2020, 80bn by 2025 (IDC)
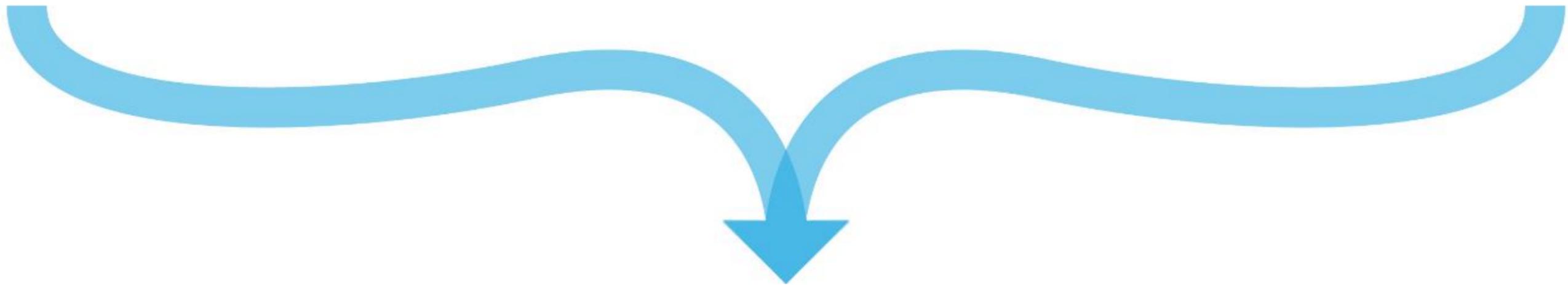
27 bn 2017 to 125 bn in 2030 (IHS Markit)

Focus on 5G in The Fibre Ubiquity Era

Densification
Will require more backhaul

Increasing peak rate
Will require high throughput transport

Gbps
20
1
0.1
3G   LTE   5G
Standard

Reliability
WIll require a reliable medium

More Fibre to Deploy... but how?

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Initiatives To Optimize The Fibre Architecture Builds

USA

Prysmian Group – Verizon: a "best in class" partnership

e.g. **Verizon's "One Fiber" Approach**

- **Multipurpose**: fibre as converged multi-purpose architecture instead of a traditional purpose-built fiber

- **High fibre count**: cost-effective deployments with multiplying strands of fibres in deployed cables

- **Future looking**: dense fibre infrastructure for mobile embracing also enterprise, small business preparing the ubiquity ground for future smart cities

Ubiquity Era – The Fibre Density Indicator
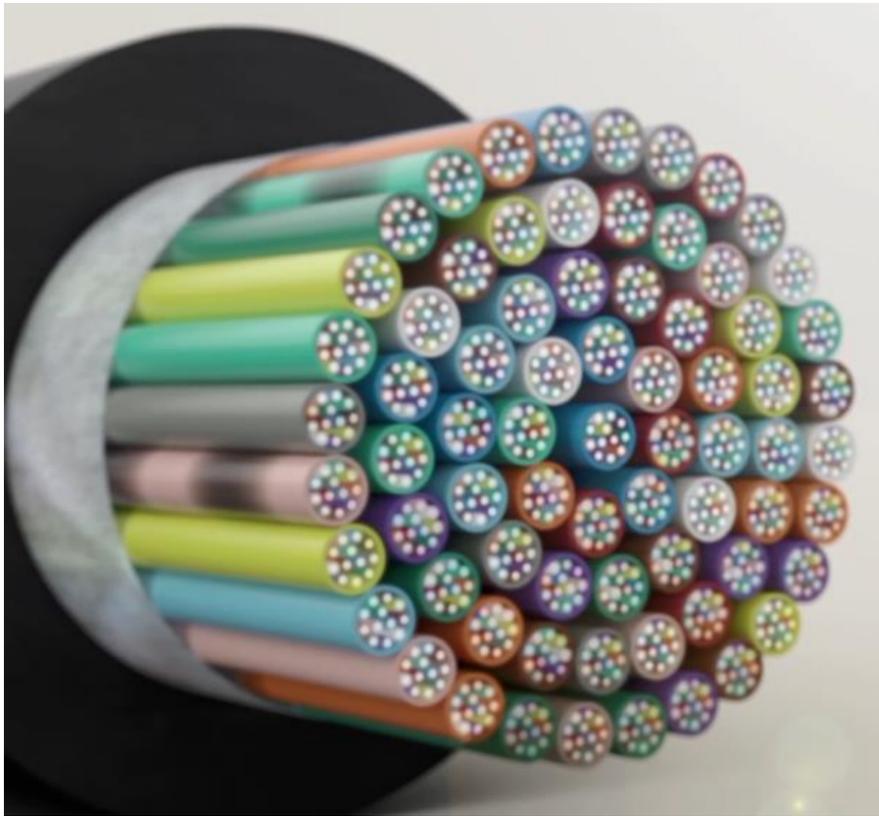
Metrics: # fibres per mm²

- **Massive**: leverage any empty space, any construction work, **packing as many** fibres as possible in cables for future use in the fibre-dense world

- **Smart**: achieve **record compactness** in cables to leverage any Right-of-Way for fibre connections without major construction works costs & disruptions

- **Quick**: **speed-up** deployment time for fast and efficient service provisioning

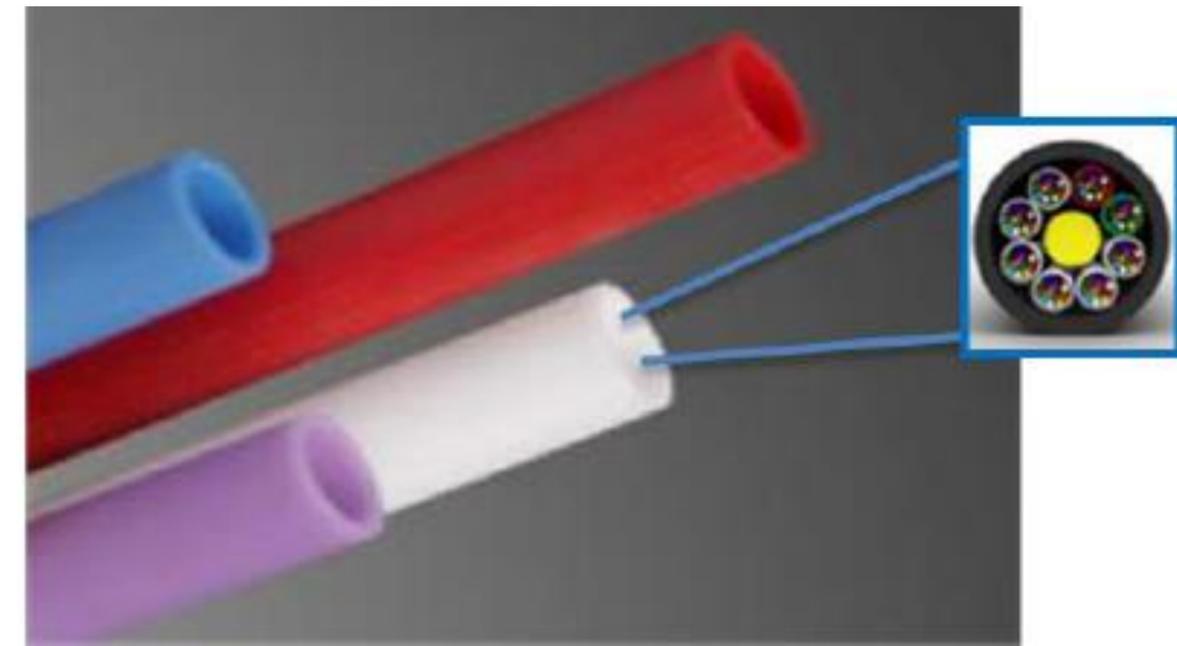## Bend-Insensitive Resilient Fibres are CRUCIAL to succeed!

Ubiquity Era – Fibre Density / Some Realizations

Record Fibre Density
5.5 fibres per mm^2

**Duct
6912f
40.0mm**

Record Fibre Density
8.0 fibres per mm^2

Microduct 144f 4.8mm

And more to come!

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Ubiquity Era – Flexibility
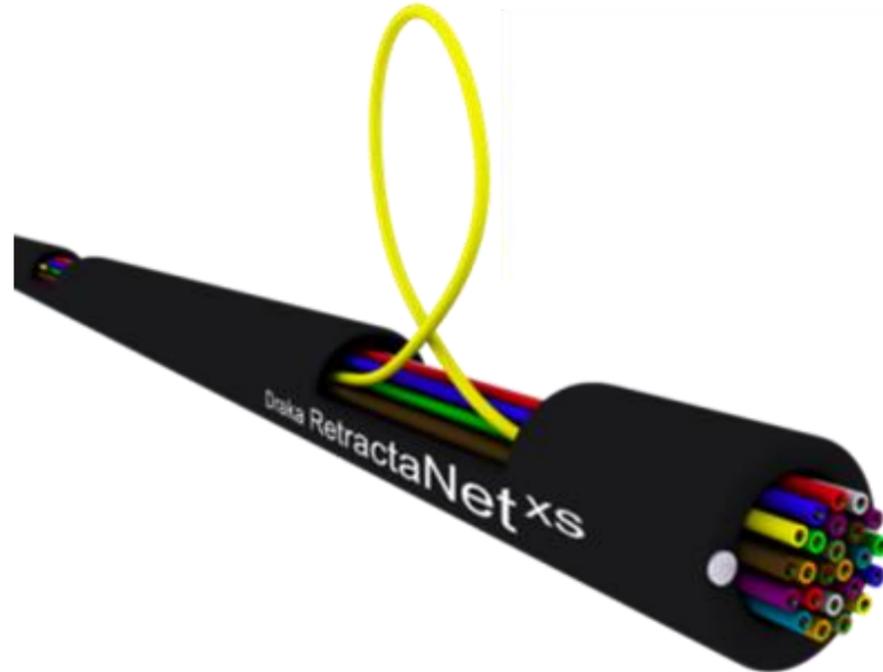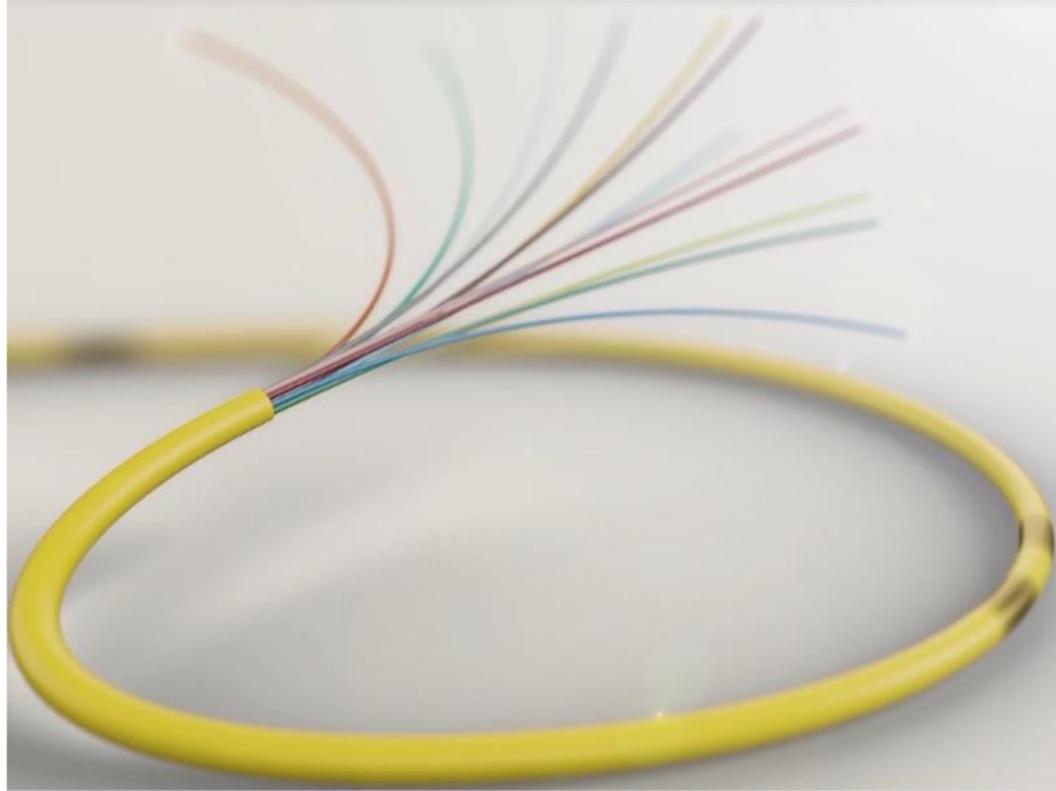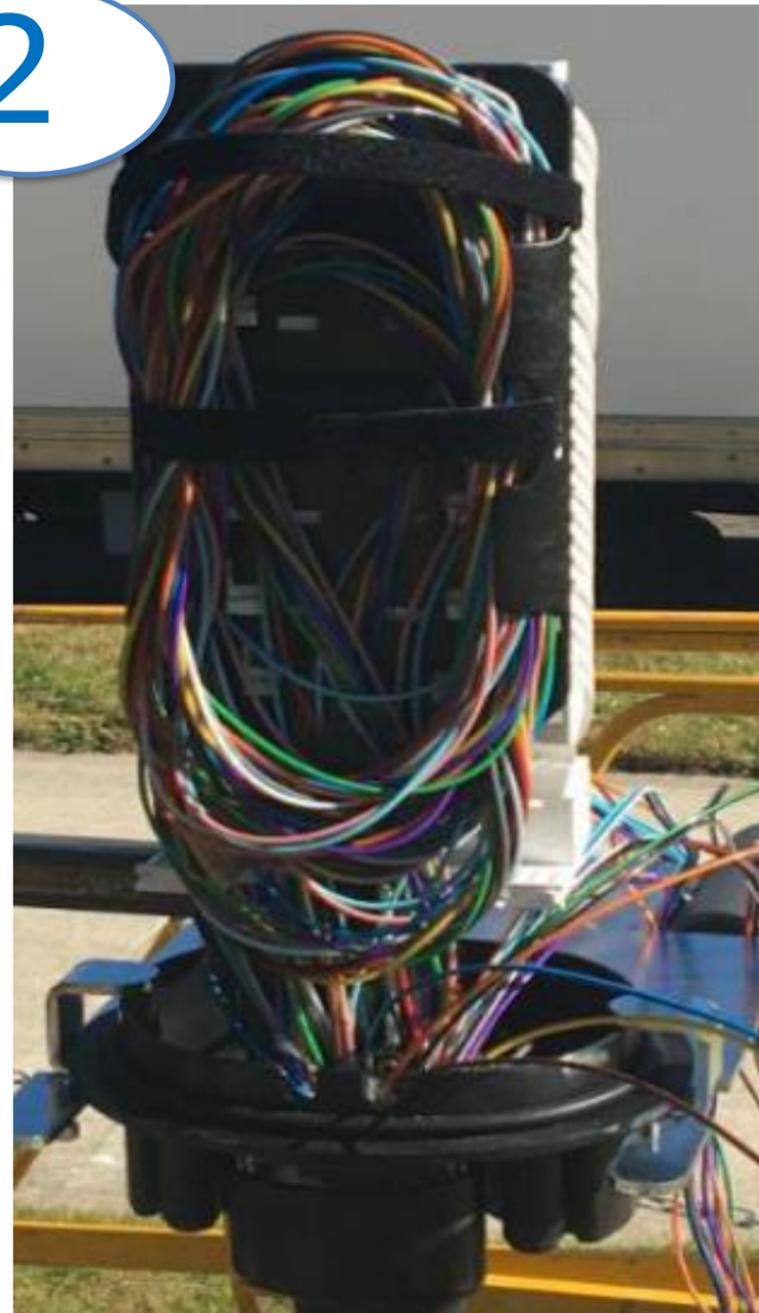

Jointing, Tapping, Connecting

User-friendly and easy to handle cable solutions are **more than ever required** in the ubiquity era

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Flexibility for Improved Joint Tube Management

3,2m of modules stored into the MMJ basket

(1) 24 x 12F FlexTube®

(2) 12 x 12F regular loose tubes

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Thank you.

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