5G/6G, XR and the Metaverse – A Silicon Valley View

Prof Mischa Dohler, *FIEEE FRAEng FRSA FIET*

VP Emerging Tech, Ericsson Inc, Silicon Valley

Advisory Board, FCC (TAC) & Ofcom (Spectrum)

Visiting Professor, King's College London

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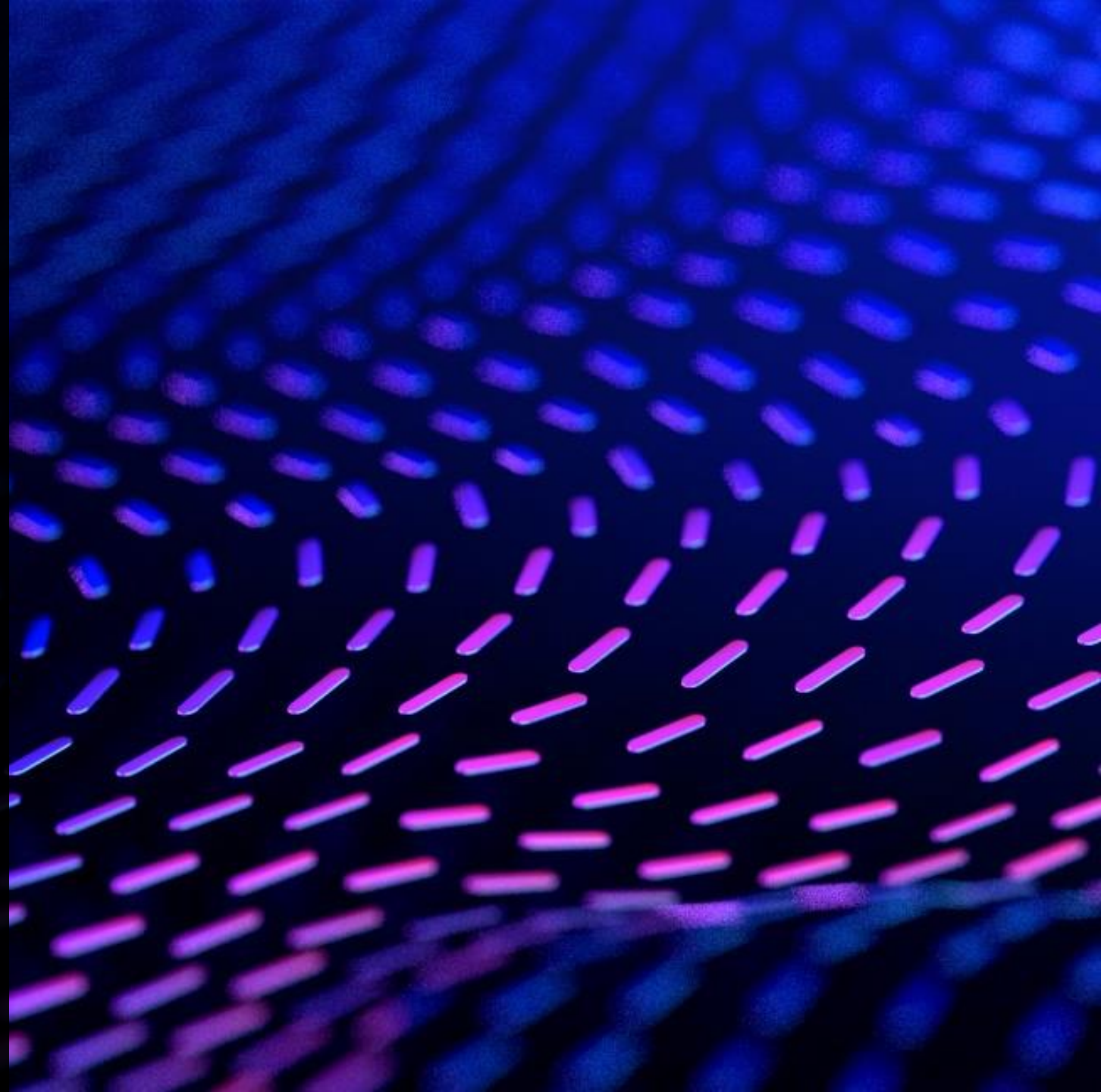
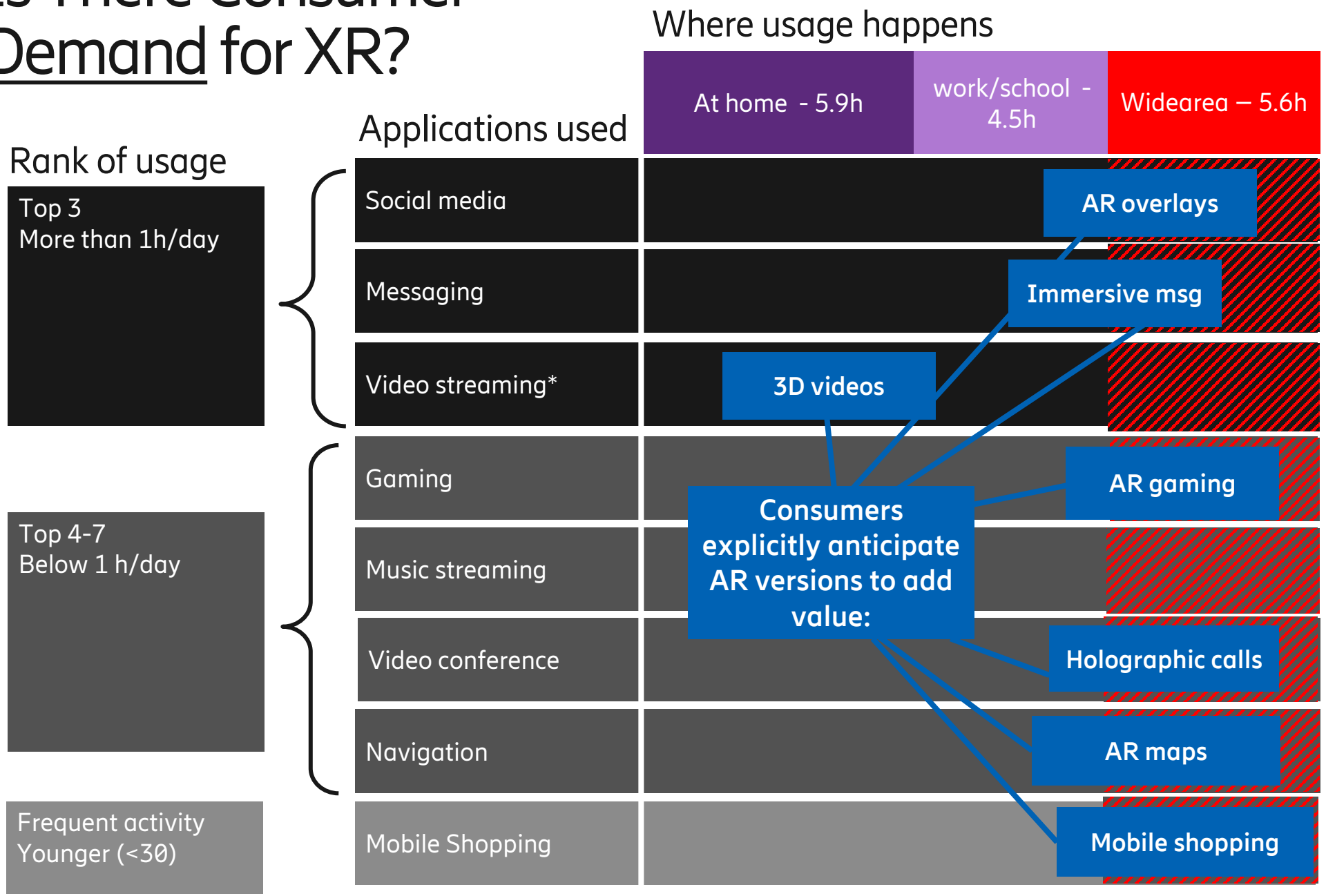


Is There Consumer Demand for XR?



*incl. live broadcast & HD video

Source: Ericsson ConsumerLab reports: Ready Steady Game (2019), Augmenting daily commute ()2020, 5 ways to a better 5G (2021)

Possible use on the move
Possible use at specific location

Majority of top 5G appl. wanted by consumers are augmented by XR.

78 % of consumers are gaming. Top locations home & commuting

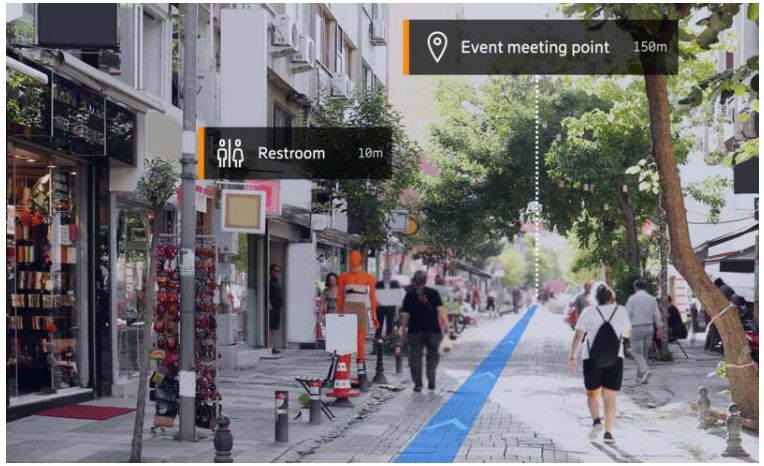
Commuting:
Connectivity for entertainment, relaxing be productive/work & safety/cars

Digital advertisement in XR

Our predictions for XR timeline and device type

VR to AR
2023 - 2025

HUD, blended information



AR takes lead
2025 - 2027

Recognize surrounding, geo-specific

All day XR
2027 - 2030

Fully immersive

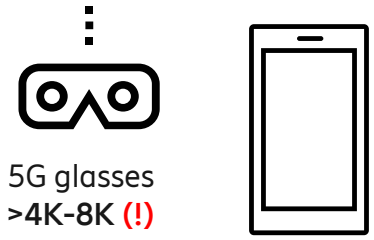
Likely scenario development

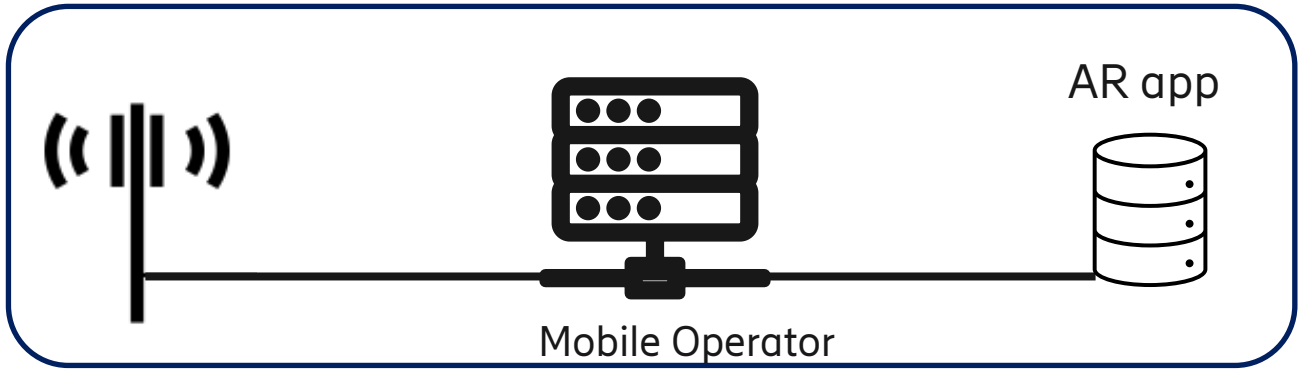
- VR (see through), simple AR / Heads Up Displays
- Static, on device, tethered
- Starts with local deployments

- Glasses-style
- 5G AR takes lead
- Local → wide area networks

- Global adoption
- Stand-alone, cloud, multi-user
- Privacy key

Tech innovation for XR use-cases: MEC-rendered AR





	Device-Rendered Content	MEC-Rendered Content
GPU	<1 W processing power	350 W
Memory	Limited	Unlimited
Battery	Significant Impact	Low Impact
Connectivity	MBB 10kbps-1MBps	TCC 0.1-10s Mbps & 10-40ms latency & 3ms jitter

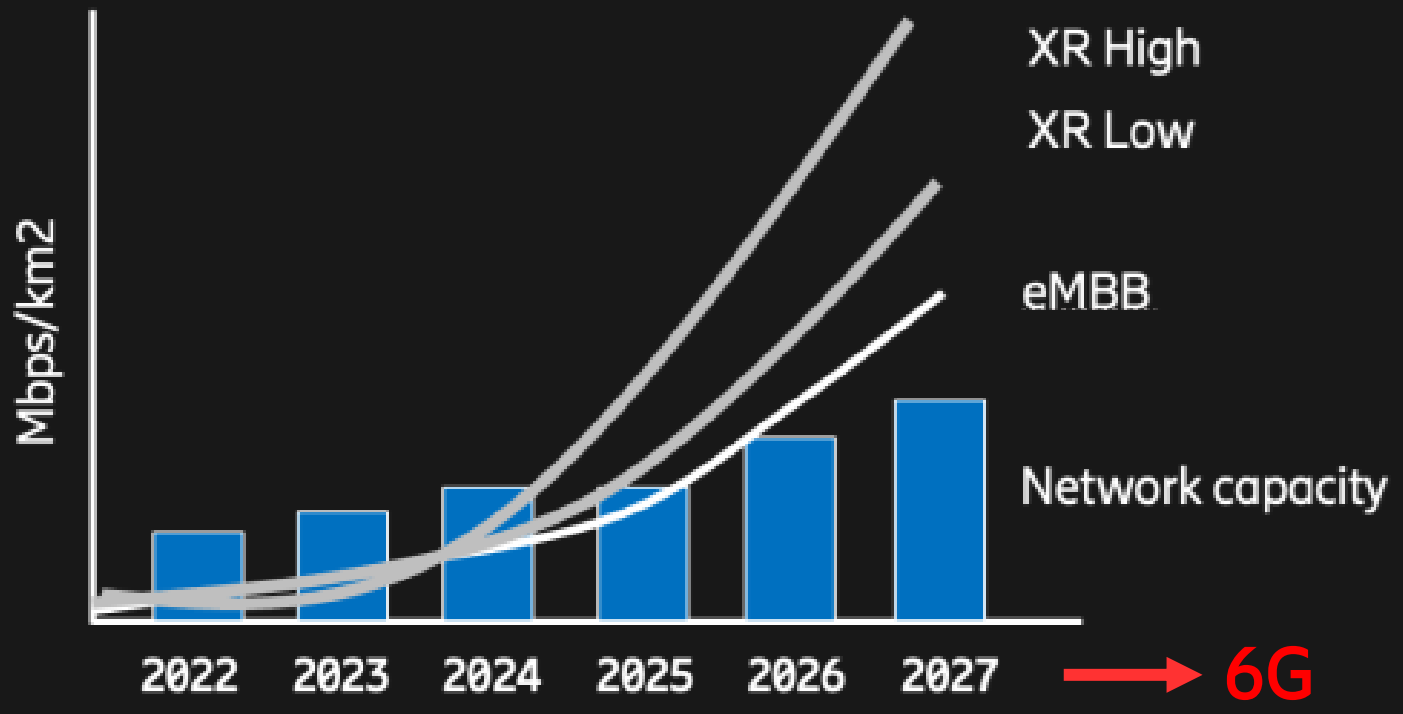
Improvements on features, spectrum and densification

Requirements

- Low latency
- Link symmetry
- Higher speeds

Types

- XR Low (10% uptake)
- XR High (50% uptake)



To avoid a future XR traffic crunch, we need to allocate additional spectrum for IMT via the ITU as well as regional regulatory authorities and national regulators.

In particular, spectrum in the centimetric range is needed for wide-area XR (7-15 GHz).

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