GSMA Intelligence

Open for Debate:
Fixed Wireless Access vs. The Metaverse

Which is the Bigger Opportunity for Operators?

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The 5G FWA Opportunity

DATE

28/04/2022

AUTHOR

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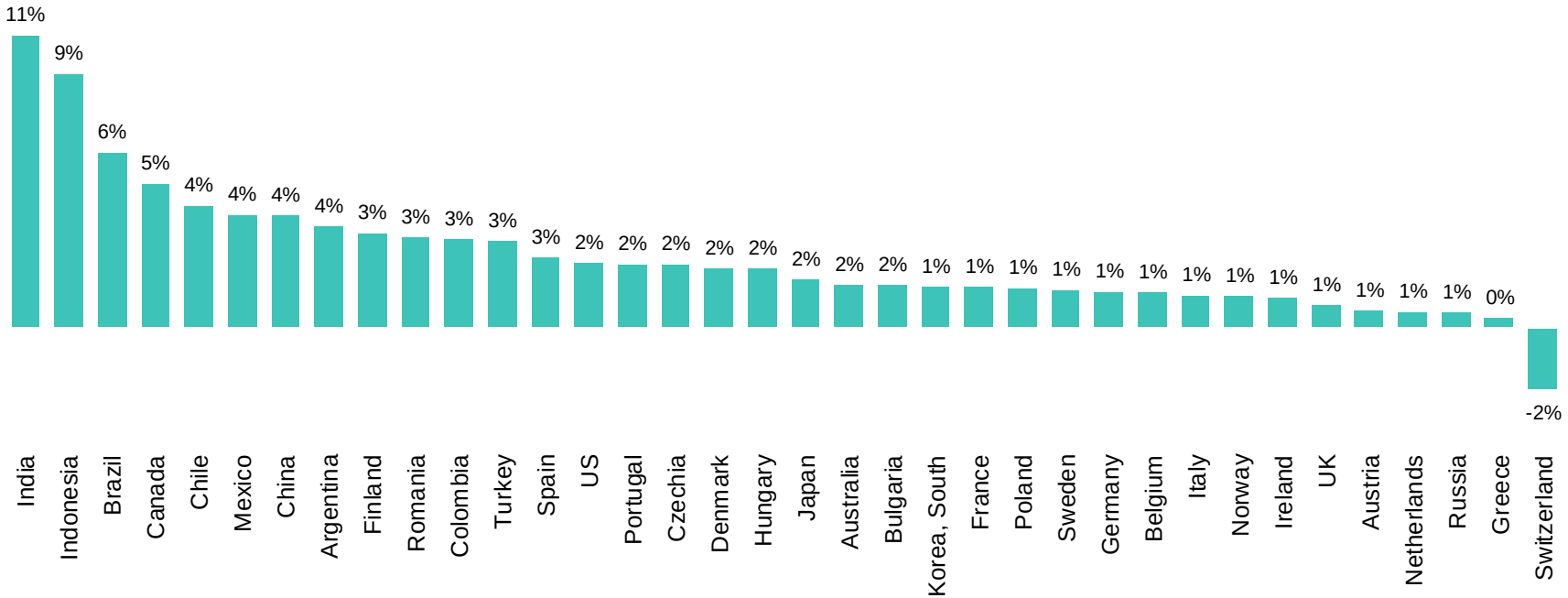
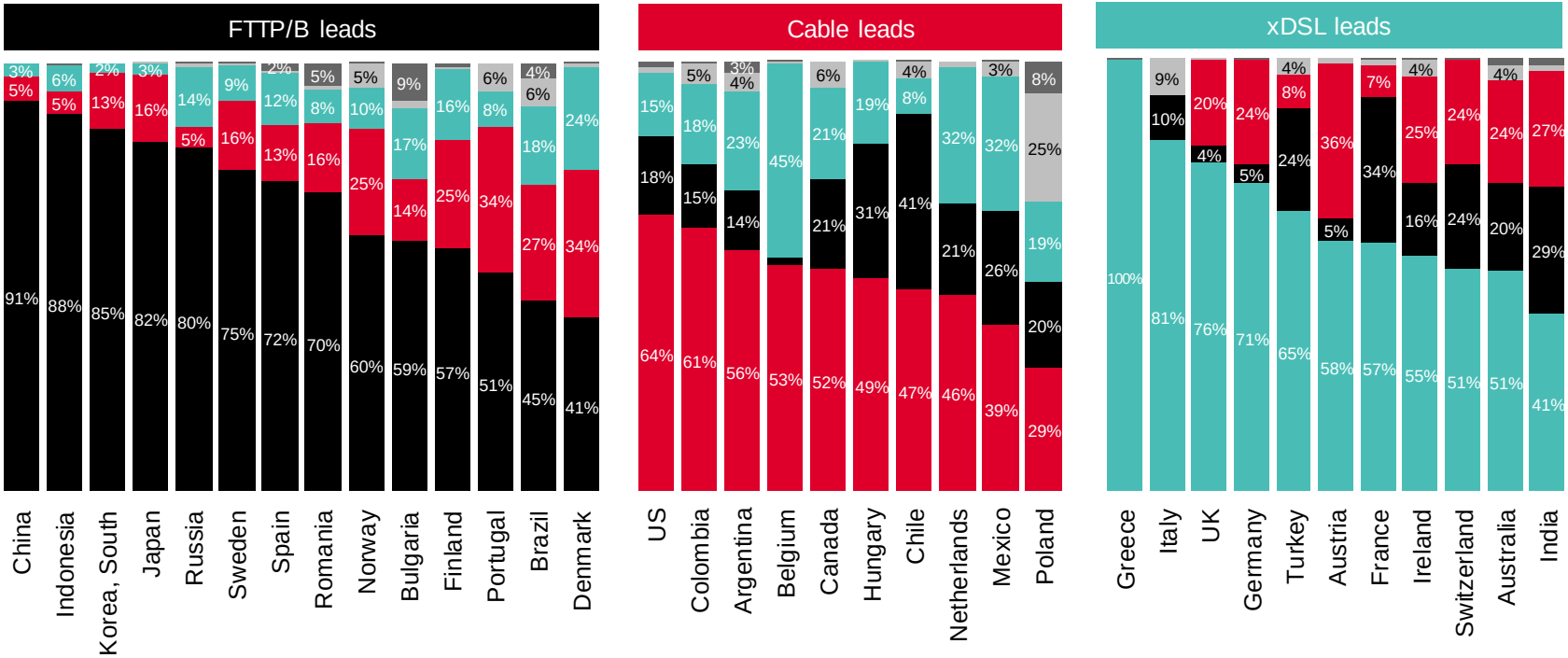
Fixed broadband growth overview



Source: GSMA Intelligence

A Shifting mix

Fixed broadband connections by technology as a percentage of total fixed broadband connections – end of 2020



Fixed broadband connections include residential and business.

FTTP/B Cable xDSL FWA Other

Source: GSMA Intelligence

FWA is popular (again)

Live commercial 5G FWA network

Planned commercial 5G FWA network

Status defined as Live where at least one operator has commercially deployed 5G FWA network

5G FWA launches

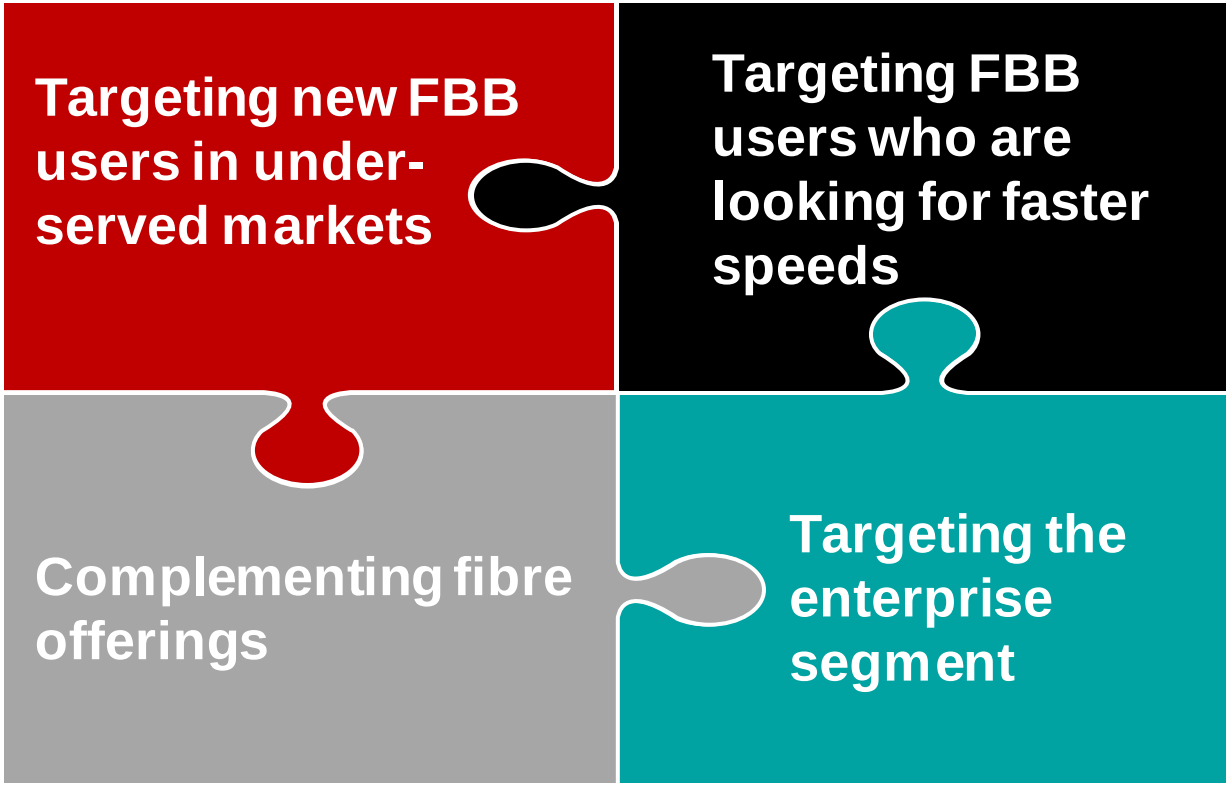
As of Q1 2022:

- **74** fixed broadband service providers (the vast majority operators) had launched commercial 5G-based fixed wireless services across **38** countries.
- **16** fixed broadband service providers (the vast majority operators) had announced plans to launch 5G-based fixed wireless services.

90	Fixed broadband service providers (the vast majority operators)
43	Countries

Source: GSMA Intelligence

The 5G FWA Opportunity



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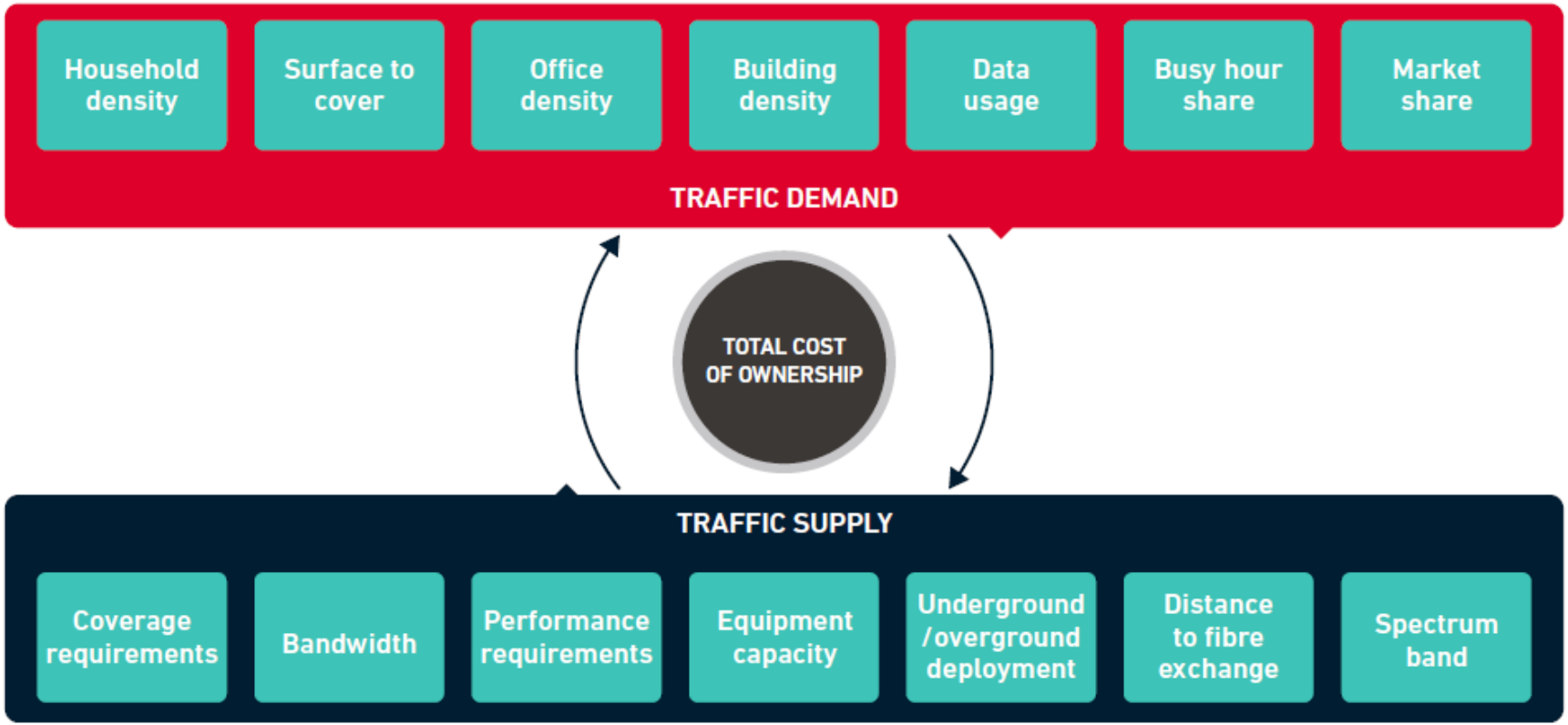
FWA Regulatory Recognition

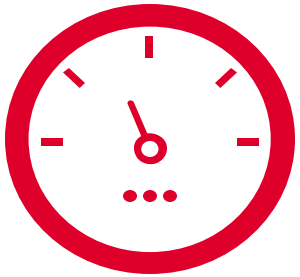
Country	Regulatory Authority	Government Investment	Targeted properties passed
Canada	CRTC Broadband Fund	Fund $600 million	380,000 and 1,000 public institutions
Italy	Government-owned infrastructure company, Infratel	Varies (regional tenders) 1 million	1 million in initial phase (to 2021)
Spain	Government Programme for the Extension of Next Generation Broadband; EU	€500 million (+ €400 million from EU)	2.2 million additional people by 2021
UK	Ofcom: Rural Gigabit Connectivity, other schemes	£5 billion	All: gigabit-capable broadband to every household by 2025
US	FCC: Rural Opportunity Fund, phase 2 of the Connect America Fund	$22 billion	700,000 in 10 years

FWA cost-effective? Number crunching

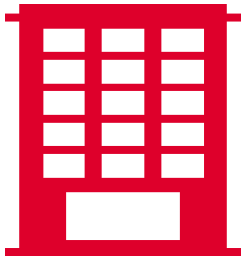


Traffic demand levers

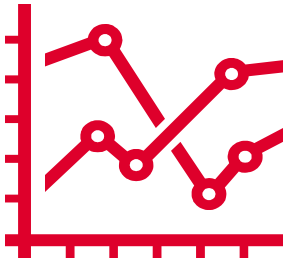
Population density & surface area



Data usage



Building & road density

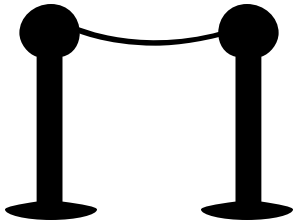


Market share

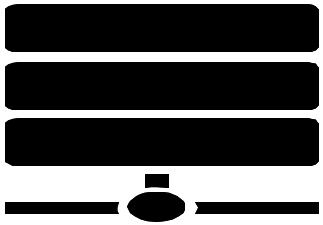
Traffic supply levers

Performance requirements

Spectrum



Deployment mode



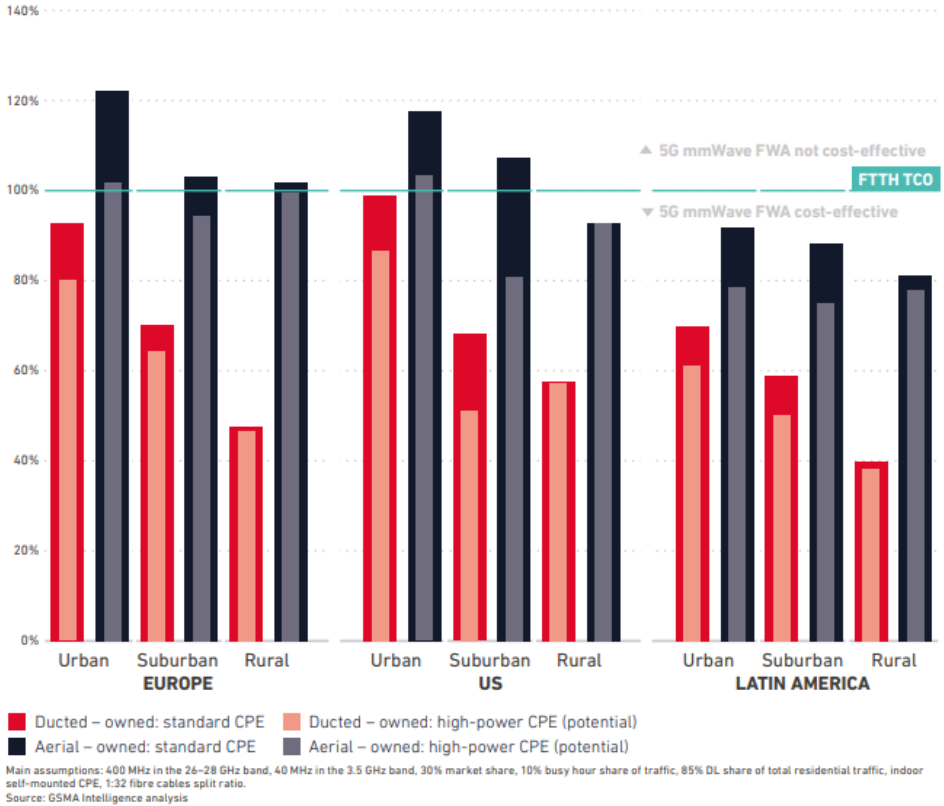
Equipment capacity

mmWave FWA vs. FTTH

When does it make sense ?

- Comparing TCOs: 5G mmWave FWA vs. FTTH for a MNO within 10 years
- Assuming holdings of 400 MHz of mmWave spectrum and 40 MHz of mid-bands
- Urban, sub-urban and rural in Europe, US and Latin America

- In rural most cost-effective option when new ducts or poles must be built, up to 65% cost savings
- In suburban can be cost-effective when new ducts/poles are needed, up to 45% cost savings
- In urban when new ducts are needed up to 25% cost savings



mmWave FWA vs. FTTH

Sensitivity checks

Traffic demand

- New ducts: @10% busy hour, high levels of market share
- New poles: @10% busy hour, less than 30% MS in rural, 20% in suburban and 10% in urban
- Shared or rented: low levels of market share and busy hour share

Civil works CAPEX

- When above $25k, $35k and $50k per kilometre in LatAm, Europe and the US and market share below 50% in rural, 30% in suburban and 15% in urban
- Assuming it is above $50k, $70k and $100k per kilometre, when market share below 30% in urban and 50% in suburban

CPE strategy

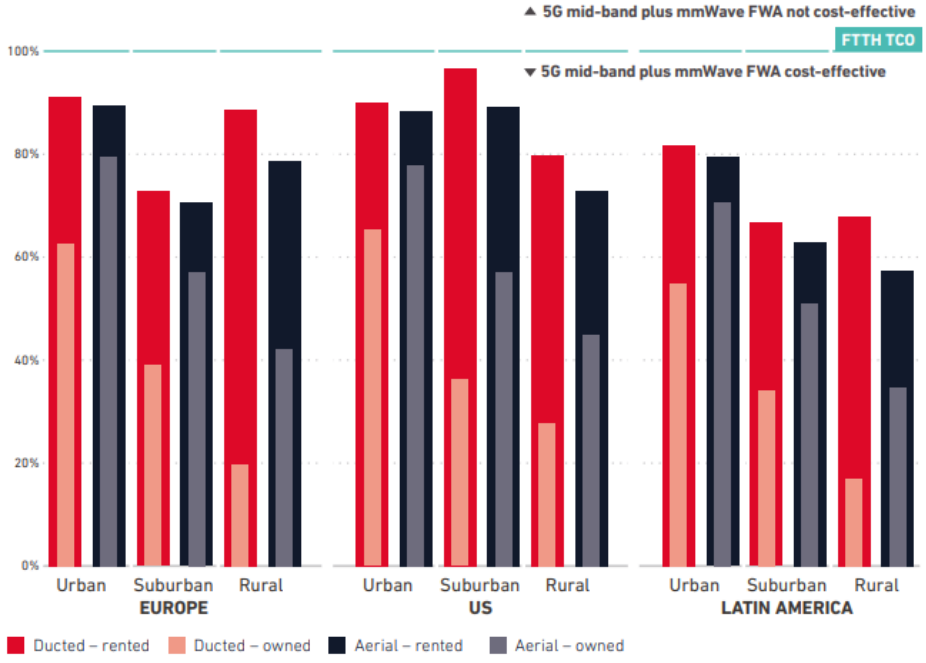
- ODUs: hybrid strategy could improve cost savings by 10 to 15 percentage points vs. standard indoor self-mount CPEs
- New high-power CPEs could improve cost savings in urban and suburban by 15 to 20 percentage points

Mid-band plus mmWave FWA vs. FTTH

When does it make sense ?

- Comparing TCOs: 5G FWA vs. FTTH for a MNO within 10 years
- Assuming holdings of 400 MHz in mmWave and 100 MHz in mid-bands
- Urban, sub-urban and rural in Europe, US and Latin America

- Substantial cost savings when new ducts or poles must be built:
  - up to 80% in rural
  - 70% in suburban
  - 45% in urban
- Cost-effective also when ducts/poles can be shared / rented
  - with up to 30% savings in rural and suburban
  - 15% in urban



Main assumptions: 400 MHz in the 26–28 GHz band, 100 MHz in the 3.5 GHz band, 85% DL share of total residential traffic, indoor self-mounted CPE, 1:32 fibre cables split ratio, baseline data consumption growth, 30% market share, 10% busy hour share of traffic.
Source: GSMA Intelligence analysis

Mid-band plus mmWave FWA vs. FTTH

Sensitivity checks

Traffic demand

- New ducts or poles: high levels of market share and busy hour share
- Shared or rented : @20% busy hour when market share > 40% in rural, 20% in urban and suburban
- If high data consumption growth, FTTH cost-effective when busy hour > 10% and market share > 30%

Civil works CAPEX

- When > $5k, $10k and $25k per kilometre in LatAm, Europe and the US and market share < 50% in rural, 40% in suburban and 30% in urban
- Assuming in-premise ducts can be re-used, when > $5k, $10k and $20k and market share < 30% in rural, 20% in urban and suburban

Spectrum & Performance requirements

- @200 MHz in mid-bands and 800 MHz in mmWave, 10 to 15 p.p. improvement in cost savings. @80 MHz in mid-bands and 200 MHz in mmWave, still substantial cost savings when new ducts/poles must be built
- Assuming at least 200mbps DL and 40mbps UL, FTTH cost effective when ducts/poles can be shared/rented

Key takeaways

1. **5G FWA is a reality in many markets**
   - Has demand drivers and strategic rationale
   - Has technology enablers
   - Has regulatory recognition

2. **5G mmWave FWA go-to option for MNOs with scarce mid-band assets when new ducts/poles needed**

3. **5G mid-bands plus mmWave FWA cost-effective for MNOs even when ducts/poles can be rented or shared**

Read More…

Third scenario on ISP with no wireless infrastructure out in May!

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Definitive data and analysis for the mobile industry

Metaverse: A Hyped Reality

The role and opportunities for Telcos

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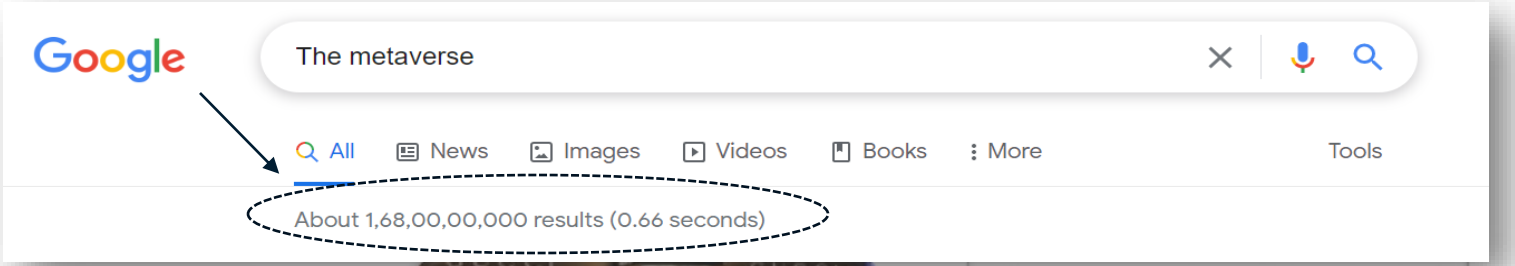
Radhika Gupta,

Head of Data Acquisition, GSMA Intelligence

The buzz

Why is everyone talking about this?



facebook

Meta

Microsoft ACTIVISION BLIZZARD

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What is ~~metaverse~~ The Metaverse ?

The various versions

- **Number of different definitions**
- **Interconnected 3D worlds? 3D Internet? Merging physical and virtual world?**

Meta

"We believe the metaverse, an embodied internet where people have immersive experiences beyond two-dimensional screens is the next evolution in social technology."

ROBLOX

Roblox's CEO David Baszucki believes "a metaverse should have eight features: Identity, Friends, Immersive, Low Friction, Variety, Anywhere, Economy and Civility."

accenture

"Metaverse Continuum" – a spectrum of digitally enhanced worlds, realities, and business models poised to revolutionize life and enterprise in the next decade

EPIC GAMES

SONY

NVIDIA

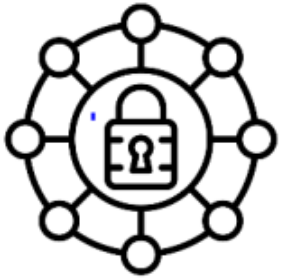
SUPERBA AUGMENTED REALITY

What is ~~metaverse~~ The Metaverse ?

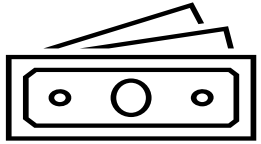
Defining the key elements

Decentralized

Interconnected & Interoperable



Safety & Security



Economy – Creator and Digital

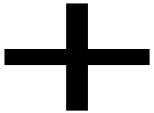
Scan the QR code to find more

Why the increased focus now?

Ecosystem & tools to support metaverse

Supported by Digital Evolution

- Covid-19 accelerated the digital transformation
- Touted evolution of internet (Web3)
- Attempt by big tech to distract audience from underlying issues?



Presence of key enablers:

- Connectivity - 5G networks and beyond, WiFi6, fiber, FWA
- Wearables – AR/VR/Glasses
- NFTs and Crypto
- Avatars
- Artificial Intelligence

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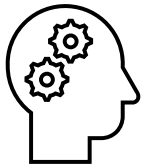
Is it all that easy?

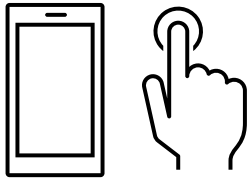
Nothing comes without challenges

Interoperability



Education & Adoption

Safety & Security



Digital Divide ~ 3.7 bn people

REGULATORY CHALLENGES
LACK OF BIZ MODELS

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Seizing Opportunities

The role and opportunity for telcos

Metaverse may be $800 billion market by 2024 (Source: Bloomberg)
The market size of metaverse will be $1.5 trillion by 2030 (Source : PwC)

Infrastructure services

- MEC
- Cloud
- Network Slicing
- Connectivity
- Full-stack offering

AR/VR based experiences

Global XR content telco alliance

orange

verizon

Gaming

Niantic Planet-Scale AR Alliance

Globe

TELUS

Telstra

Create / Invest

SoftBank

SK telecom

ifland

Digital Identity services

AI & Data-analytics services

CONNECTIVITY – 5G and Beyond, Wi-Fi 6, Fibre, FWA, Partnerships in the metaverse ecosystem

The way forward…

Now might be the time to enter

- The journey has begun driven by tech and society
- A trillion $ opportunity by 2030
- Enablers are here
- Challenges to overcome on the way

- Now is the time to start investigating and foray

Interested in knowing more?

Scan this QR code

Comprehensive report on the metaverse

- by GSMA Intelligence

GSMA Intelligence

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Contact us at info@gsmaintelligence.com