

Making Universal Connectivity Investable

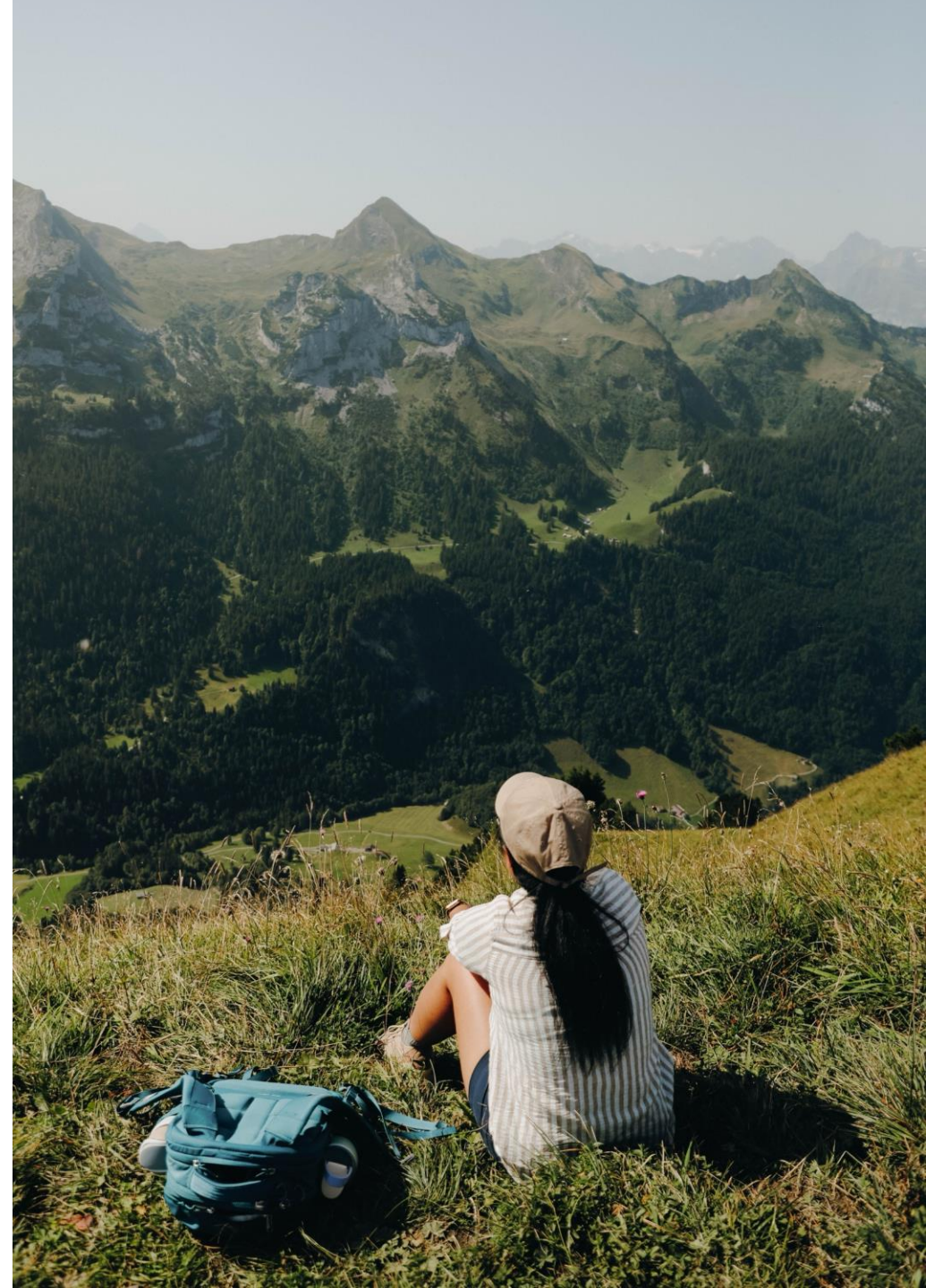
From coverage targets to investment
architecture

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The big picture

- Why is the investment case not working here?
- What can regulation or public policy change to improve that investment case?



Why it matters now?

- Do people have a signal?
- Do people and businesses have connectivity that is actually capable of supporting the digital economy?



Why the investment is not happening.

Planning!

Spectrum!

Permits & Licenses!

Management & priority!

Funding!



Financing coverage projects

Universal service
fund

State fund

Reducing/ waiving
spectrum fees
against coverage
targets

Coverage
obligation in
licences

Waive spectrum
reframing fees
against coverage
targets

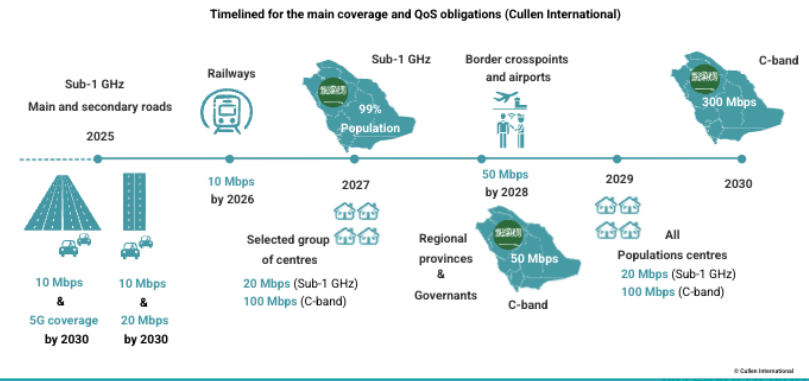
Fines (deployment
instead of financial
sanction)

Coverage requirements

Moving a requirement to cover a certain percentage of the population to a define detailed requirements over dozens of pages

	Coverage requirements imposed on the main MNOs						
	Coverage of national population	Coverage of national territory	Coverage of underserved areas	Coverage of roads	Coverage of railway routes	Coverage of other infrastructure	Obligations that require a particular technology
France	700 MHz auction 98% of the population by 17 Jan. 2027 99.6% of the population by 8 Dec. 2030 + additional obligations per region (Bouygues Telecom, Free Mobile, Orange, SFR) 800 MHz auction 98% of the population by 17 Jan. 2024 99.6% of the population by 17 Jan. 2027 + additional obligations per region (Bouygues Telecom, Orange, SFR) 900, 1800 MHz, 2.1 GHz award By 31 Dec. 2022, 100% of sites must provide 60 Mbps download speed for one user 3.6–3.8 GHz award 100% of sites with transmitters of more than 5 W must provide at least 240 Mbps theoretical download speed by 2030 (speed to be shared by all users). (Bouygues Telecom, Free Mobile, Orange, SFR)	No	700 MHz auction 92% of the underserved areas population by 17 Jan. 2027 97.7% of the underserved areas population by 8 Dec. 2030 (Bouygues Telecom, Free Mobile, Orange, SFR) 800 MHz auction 97.7% of the underserved areas population by 8 Dec. 2030	700 MHz auction 100% of main roads by 8 Dec. 2030 (Bouygues Telecom, Free Mobile, Orange, SFR) 900 MHz, 1800 MHz, 2.1 GHz award 100% of main roads by 25 Jan. 2022 (Orange and SFR) 100% of main roads by 9 Oct. 2025 (Bouygues Telecom) 3.6–3.8 GHz award 5G-specific services available outside moving vehicles with a theoretical download speed of at least 100 Mbps per site with latency of 10 ms maximum	700 MHz auction Regional express trains (indoor) – national + 80% by 17 Jan. 2027 + 90% by 8 Dec. 2030 + additional obligations per region (Bouygues Telecom, Free Mobile, Orange, SFR) 900 MHz, 1800 MHz, 2.1 GHz award Regional express trains (outdoor) – national + 90% by 31 Dec. 2025 (Bouygues Telecom, Orange, SFR)	2.1 GHz award MNOs committed to improve indoor mobile coverage (provision of voice and SMS services over Wi-Fi is mandatory since 2021) and to provide fixed broadband services in remote areas (mandatory since 2018). (Voluntary commitments)	3.6–3.8 GHz award Using the 3.5 GHz band: Each MNO must deploy 10,000 sites by 2025. All sites with transmitters of more than 5 W must provide a theoretical download speed of at least 100 Mbps per user, per 10 MHz block, by 2030.

Category	Obligations
National coverage	99% population coverage across the country with 4G or newer technologies by 31 Dec. 2027 using the sub-1 GHz bands. Deliver a nationwide median download speed of 300 Mbps using the C-band spectrum by 31 Dec. 2030.
Population centres (as detailed by CST)	Population centres with over 5,000 residents have been categorised into three groups. The obligation will be required to be met by the spectrum winner for a specific group of centres, defined during the bidding process, for the deadline of Dec. 2027 and for all centres by 2029. All centres (on all the spectrum winners): • 4G coverage by Dec. 2025 (sub-1 GHz) • 5G coverage with a minimum download speed of 20 Mbps (sub-1 GHz) and 100 Mbps download speed by 31 Dec. 2029 (C-band) For a group of centres (each spectrum winner will be assigned a group): • 5G coverage with a minimum download speed of 20 Mbps (sub-1 GHz) and 100 Mbps download speed by December 2027 (C-band).
Regional provinces and governorates (as defined by the government)	Median download speed of 50 Mbps using the C-band spectrum by 31 Dec. 2028
Major cities (18 cities defined by CST)	5G coverage using total bandwidth of at least 200 MHz of the C-band spectrum in 50% of the sites by 2027 and 70% of the sites by 2029
Border crosspoints and airports	5G coverage with 50 Mbps median download speed by 31 Dec. 2028 (sub-1 GHz)
Railways	5G coverage with at least 10 Mbps download speed along routes by 31 Dec. 2026 (sub-1 GHz bands)
Main roads (as defined by the government)	Using sub-1 GHz bands: • 20 Mbps by 2025, using 4G or new technology • 5G coverage by 2029
Secondary roads (as defined by the government)	Using sub-1 GHz bands: • 10 Mbps by 31 Dec. 2025, using 4G or new technology • 20 Mbps by 31 Dec. 2030





Global Economic Model and Study Tool

Country Pilots

Acknowledgments

Global Economic Model and Study (GEMS) Tool

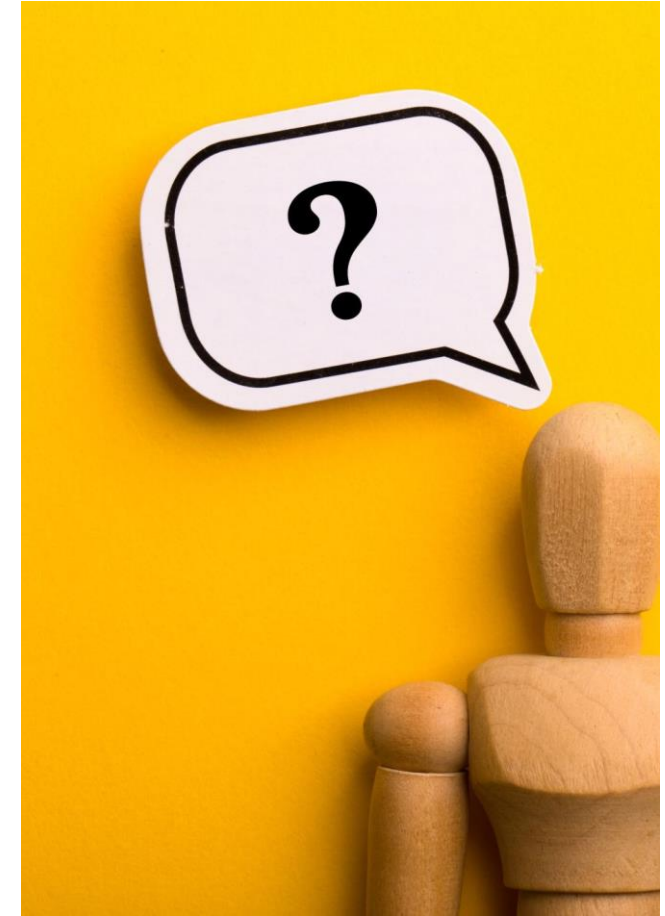


Europe is also thinking about competitiveness



What we need to do?

- Diagnose before intervening
- Treat time and certainty as economic variables
- Reuse infrastructure before financing duplication
- Fund the residual gap
- Measure outcomes, not just infrastructure



Thank you!

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