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Copper switch-off: Regulation for a Successful Transition into the Fibre World

22 November 2022

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Copper switch-off: Regulation for a Successful Transition into the Fibre World

Feyo Sickinghe
Principal Regulatory Counsel
Bird & Bird

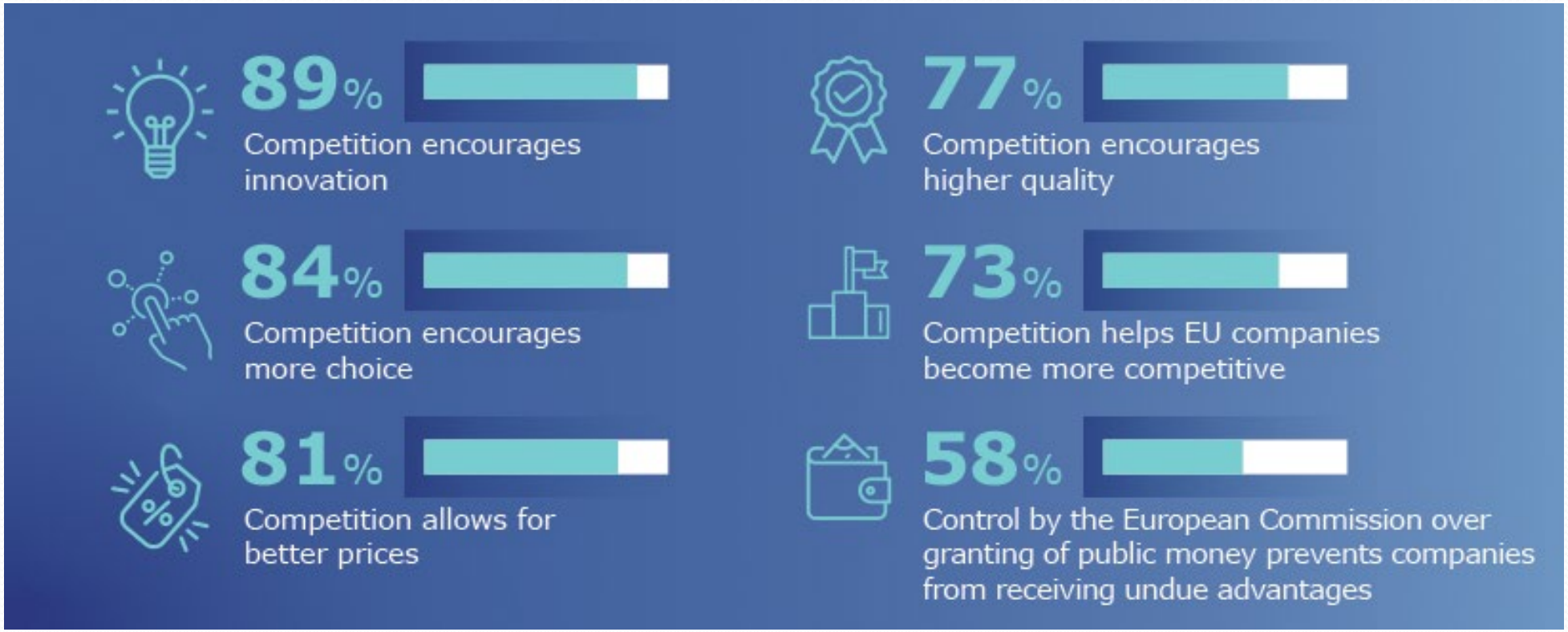
European Declaration on Digital Rights and Principles for the Digital Decade

Adopted 14 November 2022

Connectivity

"Everyone, everywhere in the EU, should have access to affordable and high-speed digital connectivity. We commit to: – ensuring access to excellent connectivity for everyone, wherever they live and whatever their income – protecting a neutral and open Internet where content, services, and applications are not unjustifiably blocked or degraded".

Eurobarometer Consumer and SME Survey



Margrethe Vestager: “The results from the survey are clear: competition improves the daily life of citizens and SMEs, bringing better prices, more choice and increased innovation. This support is consistent across the EU, and it is a reminder that fair competition is as important as ever.”

BEREC copper switch-off report 2022

- In 20 of the 32 countries where the NRA provided data the SMPO has already announced that it plans to switch-off its legacy copper access network (e.g. close MDFs).
- In 13 of them the SMPO has already closed copper-based network elements (e.g. MDFs).
- In 17 countries the NRA has already set rules for the migration process and copper switch-off.

Art 81 EECC: alternative access products of at least comparable quality should be in place.

The three challenges

Competition

- How to preserve and actively promote competition

Migration

- How to stimulate copper switch-off?

End user

- How to incentivize VHCN retail take-up?

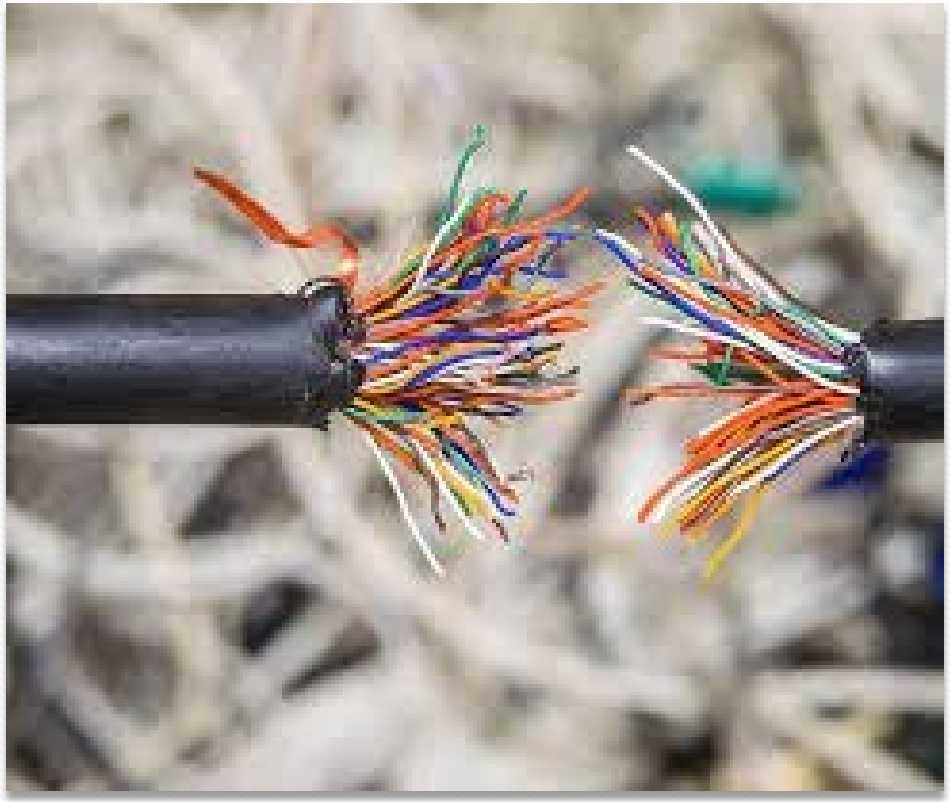
Regulatory issues for guiding migration proces by NRAs

- Deciding on the parts of the legacy access network to be decommissioned.
- Migration framework.
- Notice period and factors that affect it.
- Information provision obligations on the SMP operator.
- Duration of existing obligations.
- NRA's procedure to establish migration rules.
- Stakeholder involvement.
- Regulatory treatment of migration costs.
- Trial/test run with the operators.
- Ensuring/monitoring the availability of alternative access products of a suitable quality.

Source: BEREC (2020), BEREC Response to the Targeted consultation on the revision of the Commission's access recommendations, BoR (20) 169, Q34

Benefits of Copper Switch-off for operators

- Lower fault rates and maintenance cost
- churn minimisation
- Energy savings (60%)
- Operational cost savings (60%)
- Free up capital and resource to be redeployed



Twin transition

EC Strategic Foresight Report identifies 10 key areas of actions for a successful twinning.

Nr 6: Mobilising **additional future-proof investment** into new technologies and infrastructures.

Energy savings and copper recycling

Table 2: Operators replacing copper by FTTx stories

Operator	Replace copper by fiber network	FTTX Benefits(environmental benefits)
European top telecom operator	Operator started its network transformation process since 2016, with the aim of decommissioning all copper plants by 2025,	The operator has removed sold 65 000+ tons of cable, recycled 7000+ tons of waste (i.e. electrical equipment). In term of energy saving, operator has saved around 1000 GWH.
European top telecom operator	Launched in 2020, the decommissioning of the copper network will completed by 2030	The operator will remove 80 000 tons of cable that will be recycled. Important energy savings are also expected. The level of these savings has not yet been evaluated
European top telecom operator	Copper switch-off will be performed alongside the development of FTTH network. The deployment of FTTH network will be driven by the consumer demand	Energy savings is a key environmental benefit. Recycling of copper is not yet considered as an option since its reusability may be questionable
APAC region top telecom operator	Since 2008, operator has begun to replace legacy copper network with fiber network. At current stage, FTTH and FTTB have achieved high coverage rates and copper coverage is less than 1%.	Fiber networks simplify the entire network architecture. The flat network architecture and the enhanced performance of network equipment have reduced network deployment complexity of the number active network devices, making the entire network more energy efficient and effective.

Source: IDATE DigiWorld

"EUR 700 mln"

Connectivity indicators in DESI

Table 1 Connectivity indicators in DESI

	EU	
	DESI 2018	DESI 2020
1a1 Overall fixed broadband take-up % households	75% 2017	78% 2019
1a2 At least 100 Mbps fixed broadband take-up % households	15% 2017	26% 2019
1b1 Fast broadband (NGA) coverage % households	79% 2017	86% 2019
1b2 Fixed Very High Capacity Network (VHCN) coverage % households	26% 2017	44% 2019
1c1 4G coverage % households (average of operators)	91% 2017	96% 2019
1c2 Mobile broadband take-up Subscriptions per 100 people	90 2017	100 2019
1c3 5G readiness Assigned spectrum as a % of total harmonised 5G spectrum	NA	21% 2020
1d1 Broadband price index Score (0 to 100)	NA	64 2019

Source: DESI 2020, European Commission.

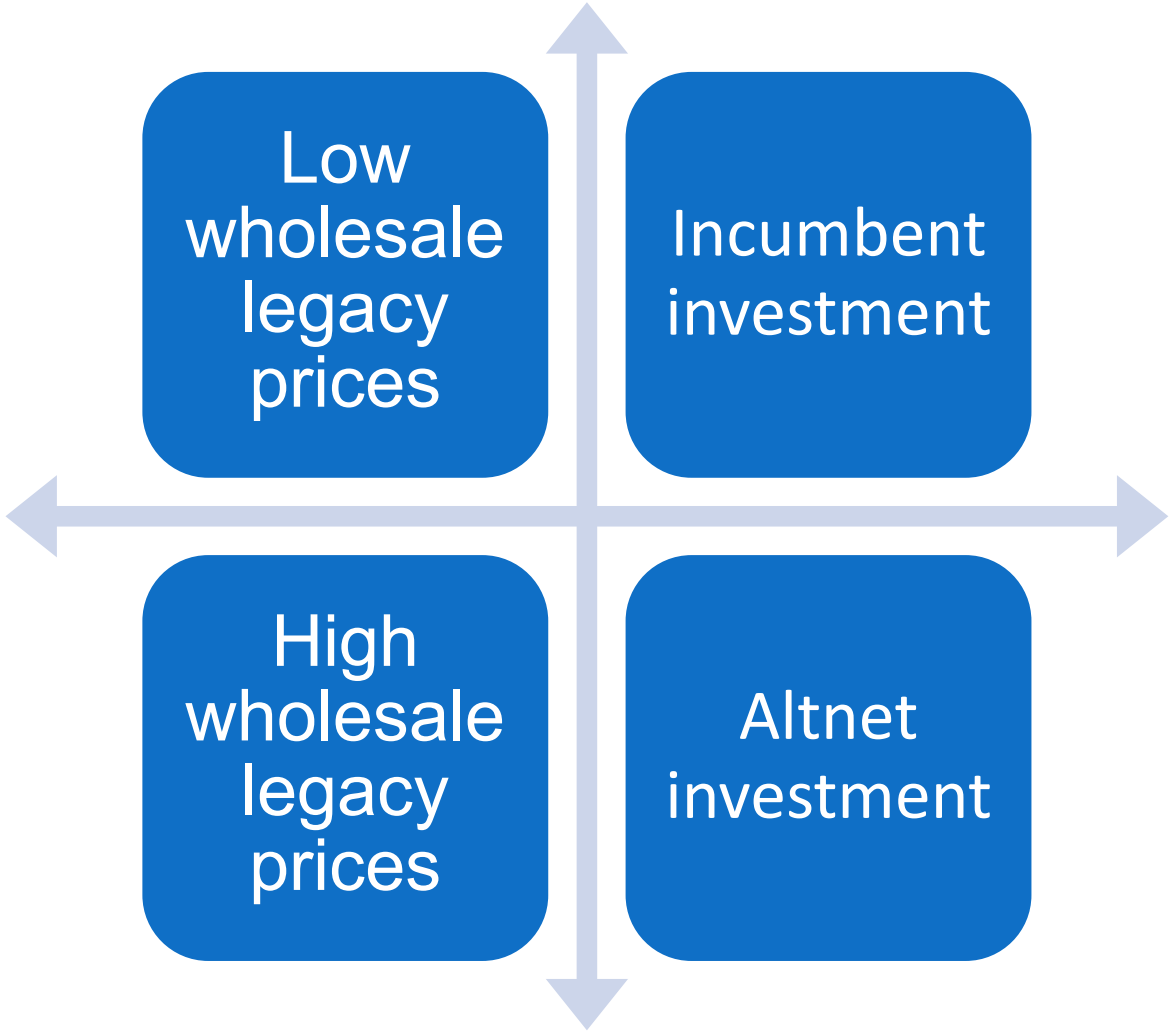
Table 6 Connectivity indicators in DESI

	EU	
	DESI 2020	DESI 2022
2a1 Overall fixed broadband take-up % households	75% 2019	78% 2021
2a2 At least 100 Mbps fixed broadband take-up % households	28% 2019	41% 2021
2a3 At least 1 Gbps take-up % households	NA	7.6% 2021
2b1 Fast broadband (NGA) coverage % households	84% 2019	90% 2021
2b2 Fixed Very High Capacity Network (VHCN) coverage % households	50% 2019	70% 2021
2b3 Fibre to the Premises (FTTP) coverage % households	38% 2019	50% 2021
2c1 5G spectrum Assigned spectrum as a % of total harmonised 5G spectrum	20% 04/2020	56% 04/2022
2c2 5G coverage % populated areas	NA	66% 2021
2c3 Mobile broadband take-up % individuals	80% 2018	87% 2021
2d1 Broadband price index Score (0-100)	64 2019	73 2021

Source: DESI 2022, European Commission

"Higher share of VHCN coverage than its uptake indicates that demand may be limited or has not yet caught up with the supply"

Who will invest?



Source: Cadman (e.a. 2019): Study on the determinants of investment in VHCN – a System Dynamics approach: Volume 1: Technical Report, November 2019, p. 68-69.

Panellists

Ms Rita Wezenbeek
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Director Connectivity
DG-Connect
European Commission

Mr Emmanuel Gabla
Member of the Arcep Executive Board
BEREC Vice-Chair 2022

Dr Marc Schütze
Vice President Regulation
Group United Internet and 1&1 at 1&1 Versatel (Germany full-service provider for companies 52,000 km fibre network, 300 cities), VATM board member

Ms Tiziana Talevi
Director of Regulation & Competition
Iliad (France, Italy and Poland, 46 million customers, sixth biggest mobile operator in Europe)

Mr Pablo Freire
Chief Strategy Officer
MÁSMÓVIL Group (Spain – 15.2 million customers)

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Copper switch-off: Regulation for a Successful Transition into the Fibre World

Rita Wezenbeek
Director Platforms and acting Director Connectivity
DG-Connect, European Commission

The NRAs have a clear role to play in the design and supervision of the switch-off

- Framework Directive vs. Article 81 EECC
- Decision to switch-off copper network belongs to operators
- NRAs have specific tasks & oversight the entire process

Copper switch-off should be encouraged, once the proper conditions are met

- A positive process: accelerates migration to VHCN
- Should not be hampered by unnecessary obstacles

Copper switch-off should not be used strategically by operators to re-monopolize markets

- NRAs to ensure that the right of access seekers and end-users are guaranteed
- Gigabit Recommendation to provide guidance on how to apply Article 81 EECC

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Copper switch-off: Regulation for a Successful Transition into the Fibre World

Emmanuel Gabla
Member of the Arcep Executive Board
BEREC Vice-Chair 2022

The different phases: the timeline of Orange's plan

Copper switch off will be progressive.

- 2021-2023: experimentations
  - Experiment total decommissioning (service is no longer provided) of copper network on 7 continental municipalities. Sharing feedback with stakeholders (operators, administration, local representative, associations…).
  - Start of « commercial switch-off » where it's possible: dwellings meeting the requirements are no longer eligible to new copper-based contracts, existing contracts stay unchanged.
- 2023-2025: transition
  - Scale-up of the switch-off process with more municipalities. Experiment of complex situations (dense areas, sensitive sites, islands, etc.). New large sharing of feedback with stakeholders and public consultation in 2025.
  - **Completion of « commercial switch-off » for all municipalities by January 2026**.
- 2026-2030: switch-off
  - Millions of lines are decommissioned every year until **complete final switch-off by December 2030.**

Arcep's goal: a need to ensure fair competition and consumer's interest during the transition

In a context of fast rolling-out of FttH French operators consider it inefficient to maintain a copper network on top of a fiber after 2025, when all the users have access to high-speed fixed electronic communications without using the copper network.

Therefore, the SMP (Orange) plans to switch-off the copper network by 2030. But the transition induced by this industrial choice requires to mitigate several risks on the competitive landscape.

Arcep's measures aim at ensuring that all end-users can migrate from the copper network at fair conditions, preserving competition and quality of service.

Risks identified

Risks on availability of service for consumer

- A premature end to the unbundling of the copper local loop could result in the impossibility for some clients to get an economic and affordable access to the internet.

Risks on planning choices

- The SMP will choose the areas in which it will switch off the copper network first. This could be a powerful lever to unfairly strenghthen its market position.

Risks on availability of specific business needs

- Currently, some specific services for businesses are provided widely on copper but only by very few operators on fiber. Switching-off the copper network may endanger competition on the market related to those services.

Risks on information assymetry

- The SMP could use its knowledge of the plan to optimize its fiber investments in comparison to its competitors.
- The SMP could use its knowledge of the copper network to target new FttH clients.

Mitigating risks: solutions

Risks on availability of service for consumer

- Obligations on availability of technological solution to get very high-speed fixed access for every client before switching-off an area.
- Obligations on number of available fiber providers before switching-off.

Risks on planning choices

- Obligation of transparency on various criteria for every selected area for switch off.
- Obligation of data sharing of an estimated calendar of switch-off for all French municipalities.

Risks on availability of specific business needs

- Obligations on availability of technical solutions to provide business services without copper before switching-off.

Risks on information asymetry

- Minimal notice period before switching-off.
- Obligation of data sharing on comparison of copper network database and fiber database.

Thank you for your attention

Emmanuel Gabla
Member of the Arcep Executive Board
BEREC Vice-Chair 2022

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Copper switch-off: Regulation for a Successful Transition into the Fibre World

Tiziana Talevi
Director of Regulation & Competition
Iliad

ILIAD GROUP at a glance

ILIAD GROUP **45.3m Subs** **€8.1bn LTM Revenue** **30% Revenues invested (2021)** **6 Mobile operator**

FRANCE 100%[1]

21,2m Subs **€5.5bn of LTM Revenue**

2 Fixed operator **3 Convergent operator**

- ✓ #1 in 5G[2]
- ✓ #1 FTTH altnet with c.30m FTTH sockets
- ✓ B2B diversification ongoing

POLAND 100%[1]

14.7m Subs **€1.8bn of LTM Revenue**

1 Mobile operator **2 Convergent operator[4]**

- ✓ Leading convergent operator in a growing market
- ✓ Strong pace in network rollout with 10.0K active sites
- ✓ Strategic partnerships with Cellnex & InfraVia

ITALY 100%[1]

9.4m Subs **€0.9bn of LTM Revenue**

4 Mobile operator

- ✓ > 9m mobile subs (12% market share consumer market)
- ✓ Massively deploying own mobile network: 10K sites (+1.7K yoy)
- ✓ FTTH launch in January 2022 driving take up

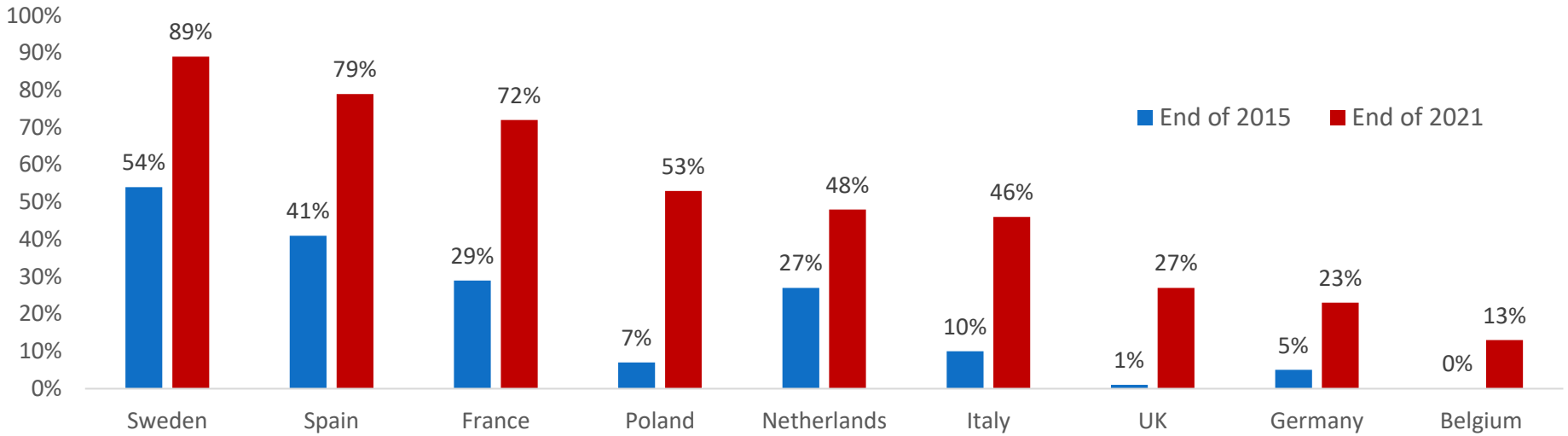
Other stakes and participation in the industry

- ✓ *30% ownership in OTP in Poland (70% Cellnex)[5]*
- ✓ *49% ownership of 1st Altnet FiberCo in France (IFT[3])*
- ✓ *100% ownership of Fiberco in Poland*
- ✓ *32% ownership of Eircom in Ireland*
- ✓ *50% ownership of Telecom Reunion Mayotte*
- ✓ *12% ownership of Unieuro in Italy*

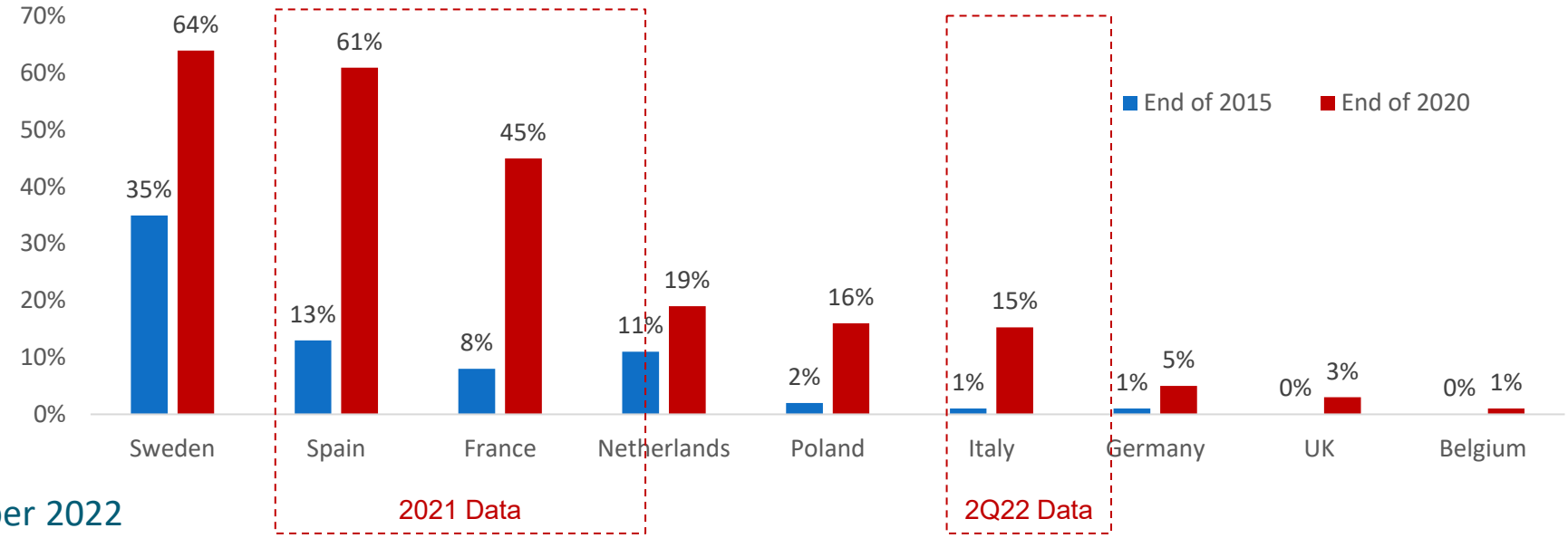
Note: All figures presented are as reported as of September 30 2022 and except for revenue, they are pro forma of UPC acquisition and stake disposals of respectively 30%/10% in OTF/OTP
(1) Company & management (2) In terms of number of sites (3) Investissements dans la Fibre des Territoires (« IFT ») (4) Based on UKE- 2021 Report dated 30 June 2022 and including UPC contribution based on FY21 financials (5) iliad has a contractual right to sell to Cellnex Poland sp. z o.o. in relation to the 30% shareholding of a subsidiary of iliad in On Tower Poland sp. z o.o. ("OTP").

FTTH migration is already a market reality…..

COVERAGE

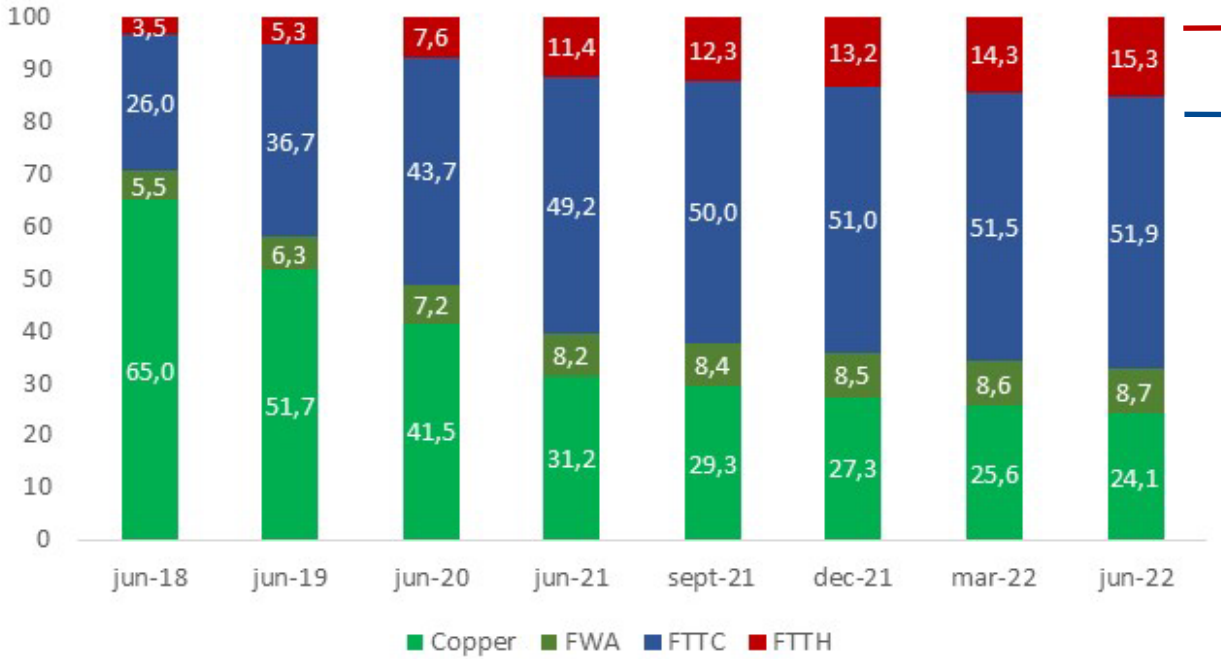


TAKE UP



When UBB technologies are deployed switching from copper happens rapidly

Evolution of access technologies in Italy (% of total access lines)

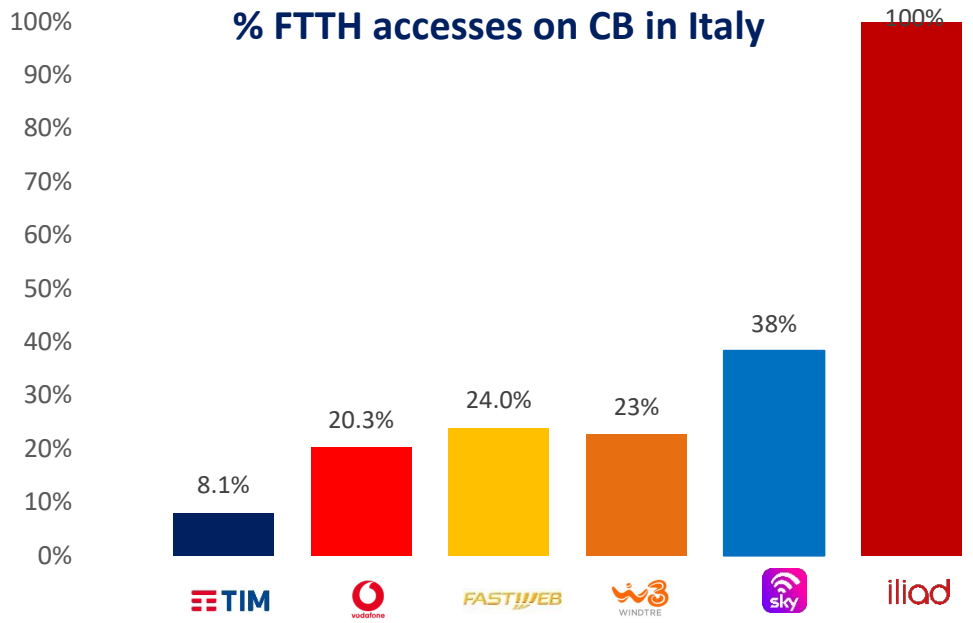


Source: AGCOM Quartely Observatory

+ 1 Mln lines over past 12 months (+34%)

+ 0,5 Mln lines over past 12 months (+ 5%)

% FTTH accesses on CB in Italy



Source: AGCOM Quartely Observatory

Key Messages

- When FTTH is truly available migration to fiber takes place over a short period of time and **competition is key** to stimulate FTTH take up (alternative operators migrate customers to FTTH much faster than incumbents)
- All **operators bear their own end-of-cycle copper costs** (box, presence, collection, after-sales service, FTTH Migration costs, ecc.)
- Increase of copper wholesale prices **does not provide any economic signal and incentive** for faster FTTH migration but only benefits the incumbent at the detriment of competition and end users
- Measures to increase and speed up FTTH migration are:
  - Ensure **effective deployment of FTTH** to all households (100% of lines with adequate substitute service)
  - Mitigate FTTH migration costs for operators (ie. high one off costs)
  - Provide financial assistance to households for in-house infrastructure works
- **Competition** remains **the key driver for investments in FTTH**
- Public authorities have their role to play.

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Copper switch-off: Regulation for a Successful Transition into the Fibre World

Dr. Marc Schütze
Vice President Regulation
Group United Internet and 1&1 at 1&1 Versatel

Requests for a Successful Migration driven by Competition

Regulation must ensure Fair Access – Deregulation is not a goal in itself

First Request: A one size fits all approach **is not appropriate for all EU Countries**

- In Germany, the copper and fibre market is dominated by Incumbent Deutsche Telekom which is fully vertically integrated
- Altnet fibre deployers are mostly also fully vertically integrated
- Wholesale only model is an exemption in Germany

Vertically integrated suppliers have a strategic interest to protect their own retail business. Because of their unique market position (bottleneck owner), they are able to provide access seekers, if at all, with wholesale services that are determined mainly by the supplier and not the access seeker (take it of leave it approach)

- Hence the German wholesale market is dominated by Bitstream Access dictated unilaterally by the providing operator – generally no duct or dark fibre access – even not by SMP / Deutsche Telekom.
- **Positive examples from other countries do not have vertical integration of the incumbent**, e.g., Sweden, Denmark, New Zealand. Duct and dark fibre access are crucial for success of sustainable and efficient competition.

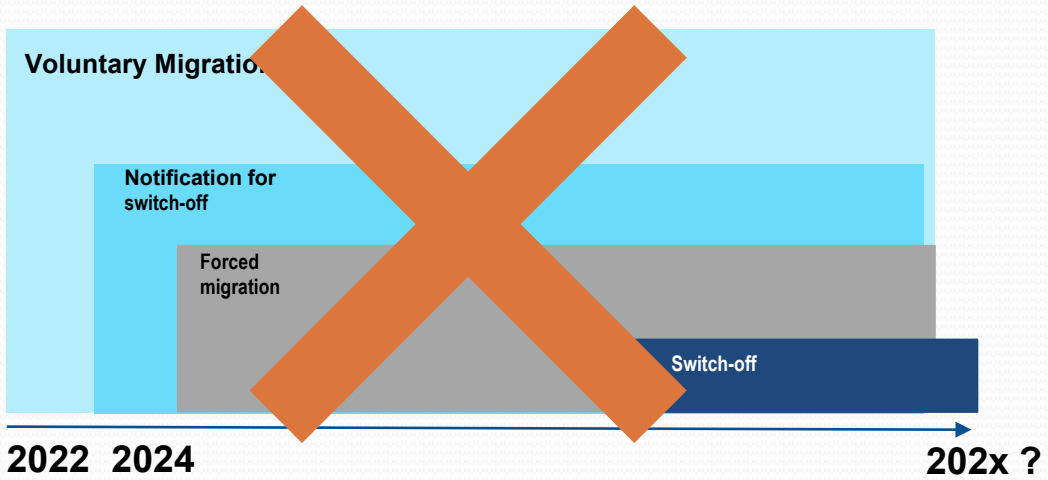
German wholesale access seekers face a realistic risk of a market which is dominated by wholesale suppliers with one-sided negotiating power – competition on networks is at risk and the economic space for access seekers in Germany is shrinking! Telekom is already today gaining market share at the cost of wholesale customers. This situation must be considered in the migration process. **Not every market is suitable for deregulation.**

Requests for a Successful Migration driven by Competition

Regulation must ensure Fair Access – Deregulation is not a goal in itself

Second Request: Creating a pro-**competitive market by sector specific regulation with competition on the networks** to avoid forced switch-off (1)

Wrong approach has to be stopped



Early Art. 81 EECC proceedings combined with deregulation would lead to **anti-competitive results – Monopolies**
No competition on networks and no competition between networks

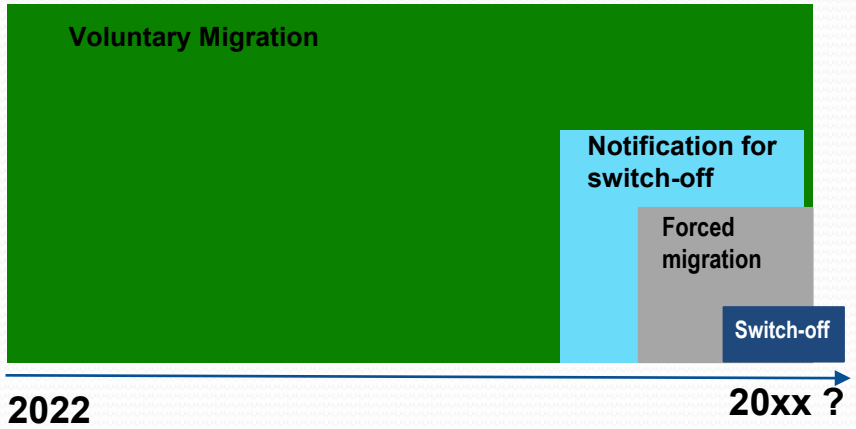
Plausibility Check: When and if forced migration becomes necessary on a larger scale, the NRA's work to ensure a competitive market has failed because there has been no fair access rights in place. In a competitive market with fair access rights and competitive pricing, migration would have been largely voluntary.

Requests for a Successful Migration driven by Competition

Regulation must ensure Fair Access – Deregulation is not a goal in itself

Second Request: Creating a pro-**competitive market by sector specific regulation with competition on the networks** to avoid forced switch-off (2)

We demand a shift of focus on voluntary migration



Regulation must ensure and focus on **voluntary migration**

- Removing the obstacles - i.e. strengthening the rights of access to avoid overpricing and ensure demand-driven products and incentivize upgrade of customers on FTTH.
- **margin squeeze between copper and fibre reduces voluntary migration interests on wholesale access seekers side**
  - cost orientation regulation stimulates pressure on the market in favour of end-customer best – differentiation in products, services and pricing
  - Second best is a fully efficient ERT – the price anchor (regularly VDSL) must be cost-orientated – in Germany, there is neither cost orientation nor ERT
- Migrating > **95 %** of households on **voluntary basis –** only a small number of households affected by forced migration.
- Creating a **market with competition on networks** to avoid forced switch-off

Be Aware: incumbents are earning excessive profits on copper infrastructure they have received for free – which has been pointed out by Commissioner Breton several times – by artificial regulation – **access seekers have co-financed** and **continue to co-finance** the expansion of the fiber network by Deutsche Telekom to **approx. 50%** - **overpayment** (wedge) must be **used to pay and incentivize the migration process in all networks - Overpayment hast to be used to booster migration for all stakeholders.**

Requests for a Successful Migration driven by Competition

➡ Regulation must ensure Fair Access – Deregulation is not a goal in itself

Third Request: A target vision for the market in 2030 needs to be set

- Avoiding transfer of incumbent‘s SMP in the migration process by strong SMP regulation. “Regulation Light“ is the wrong approach ➡ deregulation means increase in prices and disadvantages for end-customers.
- **Vertical integration calls for stronger regulation than wholesale only** – similar to termination markets – de facto each FTTH supplier has SMP and could be regulated due sector specific regulation in case of failed contract negotiations.
- Competition law can not replace sector specific regulation as it focuses on specific abuse rather than systemic competition objectives such as analogues pricing.

- **Empowering access seekers**
- fibre deploying alternative operators should offer takeover of former copper wholesale contracts opposed to trying to win copper end-customers
- **Access** to fibre networks **according to demand** is necessary to **prevent local monopolies**
- Deregulation works best with a successful co-investment model; not so in Germany; access contracts are closed only for a comparably short amount of time

Avoiding quasi monopoly markets

- High copper prices do not create incentives for migration - Overpayment (wedge) must use to incentivize migration in all networks and upselling of higher bandwidths
- **No additional costs** can be put on **access seeking operators**
- Fully efficient ERT – the price anchor (regularly VDSL) must be cost-orientated

Requests for a Successful Migration driven by Competition

➡ Regulation must ensure Fair Access – Deregulation is not a goal in itself

Fourth Request: More transparency regarding Commission's activities

- Openness of the Commission to discuss the copper-fiber-migration as an essential topic of today's telco sector is much appreciated
- **Work of the Commission** currently is too much of a **closed shop** from an operator's perspective

  ➡ **lack of transparency and lack of rule of law**
- In **Art. 32 EECC** (notification of national measures) cases, operators have **no insight** into the work of the Commission and the communication with the NRA even though it is of **high importance** for operators to have the chance to comment the NRA´s statement to **avoid bias of the Commission – NRA has a strong stake to defend its decision and therefore may just provide one-sided information**
- **Operators need a right to also comment** NRA orders and statements **within the notification** process whereas now it is only possible to inspect files after the order has already been passed
- We're also facing the issue of **lack of transparency** in terms **of the new Access Recommendation – the draft of any successor or new Recommendation must be presented to the public in a full consultation process**
- The Commission is asked to step in as a neutral institution to counterbalance the NRA's subjective approach.

Dr. Marc Schütze

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Copper switch-off: Regulation for a Successful Transition into the Fibre World

Pablo Freire
Chief Strategy Officer
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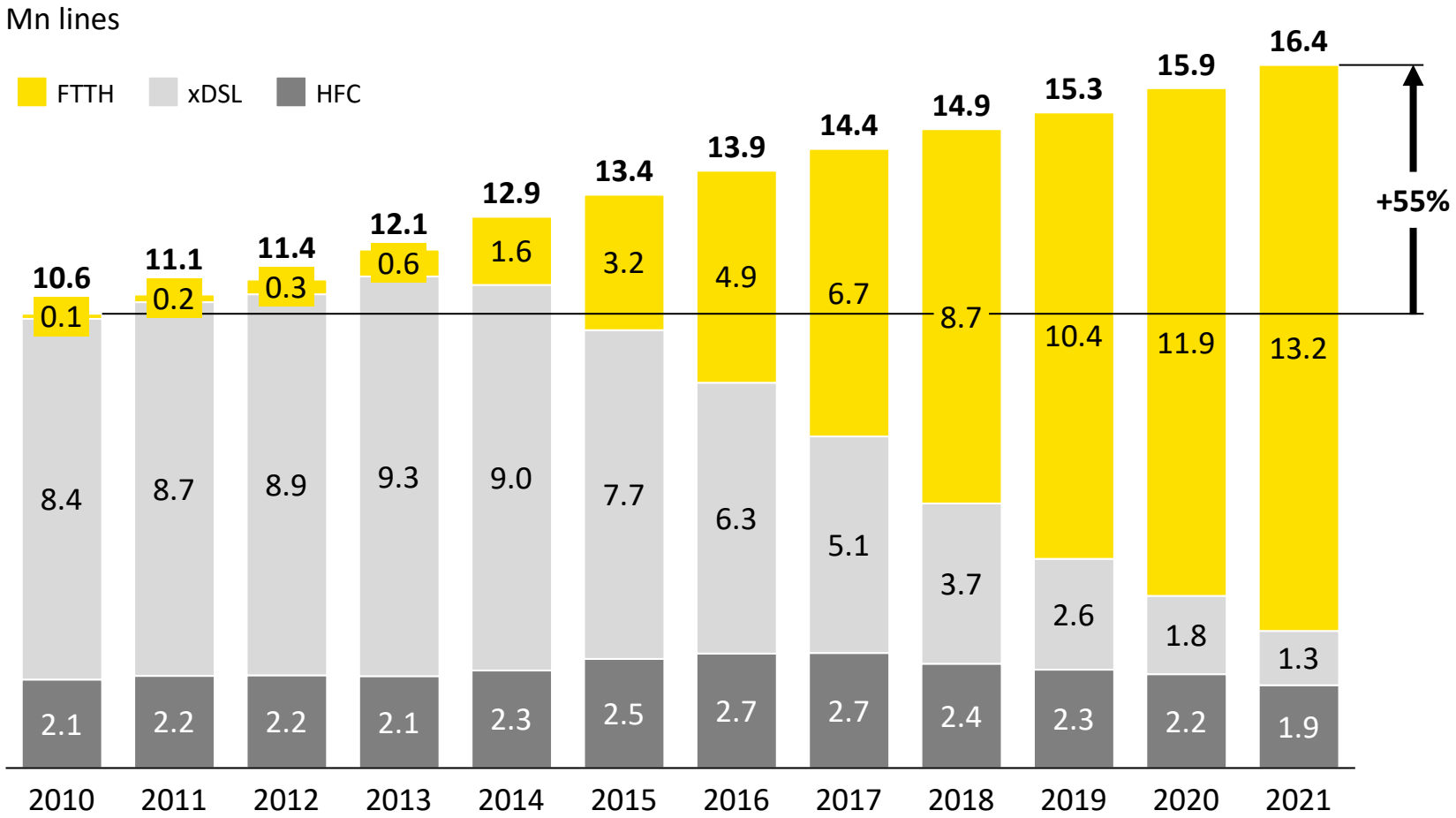
Successful copper to FTTH migration



Source: CNMC

1. Only **8% copper lines** in 2021 vs. **80%** in 2010
2. ~1,000 copper exchanges **switched off** until 2021
3. 65,000t of cable **dismantled**, 7,140t of electrical and electronic equipment **recycled**
4. The process is **expected to end in 2025** with close to 3.800 copper exchanges switched off
5. In Jan 2022, **Telefonica has sold its copper network** for €200Mn

Regulatory framework

Copper switch off regulation (2009)

1. Copper exchange eligible for switch off when **>25% customers** connected through **alternative technologies** (FTTH/HFC)
2. **5-year prenotice** where there are active LLU services **reduced to 2 years in 2021**
3. **1-year prenotice** for the remaining copper exchanges

Regulated price **8.6€/line/month**, **cost oriented**, service available **nationwide**

FTTH regulation (NEBA)

1. Indirect access service at provincial level (**NEBA**) or central office level (**NEBA Local**)
2. Unregulated areas (70% population) **criteria**:
   - Telefonica's **share of FBB market <50%**
   - **3 FTTH/HFC networks** with minimum coverage of 20%

Regulated price **16.68€/line/month**, **economic replicability** methodology, **geographic segmentation**

Network rollout regulation

1. **MARCo** - wholesale access to Telefonica's passive infrastructure at cost-oriented prices
2. **ORLA** - regulated leased lines offer at cost-oriented prices
3. **Public subsidies** for FTTH rollout, 905Mn € awarded since 2013 (69% captured by Telefonica)
4. **Façade deployment** allowed

Population gathered in **urban areas** (81% vs. 72% EU average) and **flat buildings** (66% vs. 42% EU average)

Conclusions

1. The regulatory framework for copper switch off and FTTH in Spain has enabled a **fast transition of Spanish customers to Fibre**
   - Relatively quick switch off period (5 years, then just 2)
   - Unattractive indirect access conditions (NEBA)
   - Low entry barriers for network rollout (Subsidies, MARCo, structural reasons, etc.)

2. The **low entry and expansion barriers** have enabled the emergence of **new FTTH wholesale players** (Onivia, Lyntia/ Avatel and Adamo) with sizeable networks (~8 Mn BUs) and **fast-growing players** (Digi, 3.7 Mn BUs)

3. The **EC's decision** on the Orange-Jazztel case (wholesale access to Jazztel's national ADSL network for the benefit of MASMOVIL) has turned Orange into a **relevant player in the wholesale market**

This **well-functioning wholesale market** has bolstered competition on the retail FMC market

- **8 relevant FMC players** at national level
- **32 MVNO players**, most of them offering FMC through own FTTH network and/or fixed access agreements
- And **low prices**…

-29%

*"Compared to all EU27 countries, **prices for household broadband baskets [FMC] in Spain are lower than the EU average**"*

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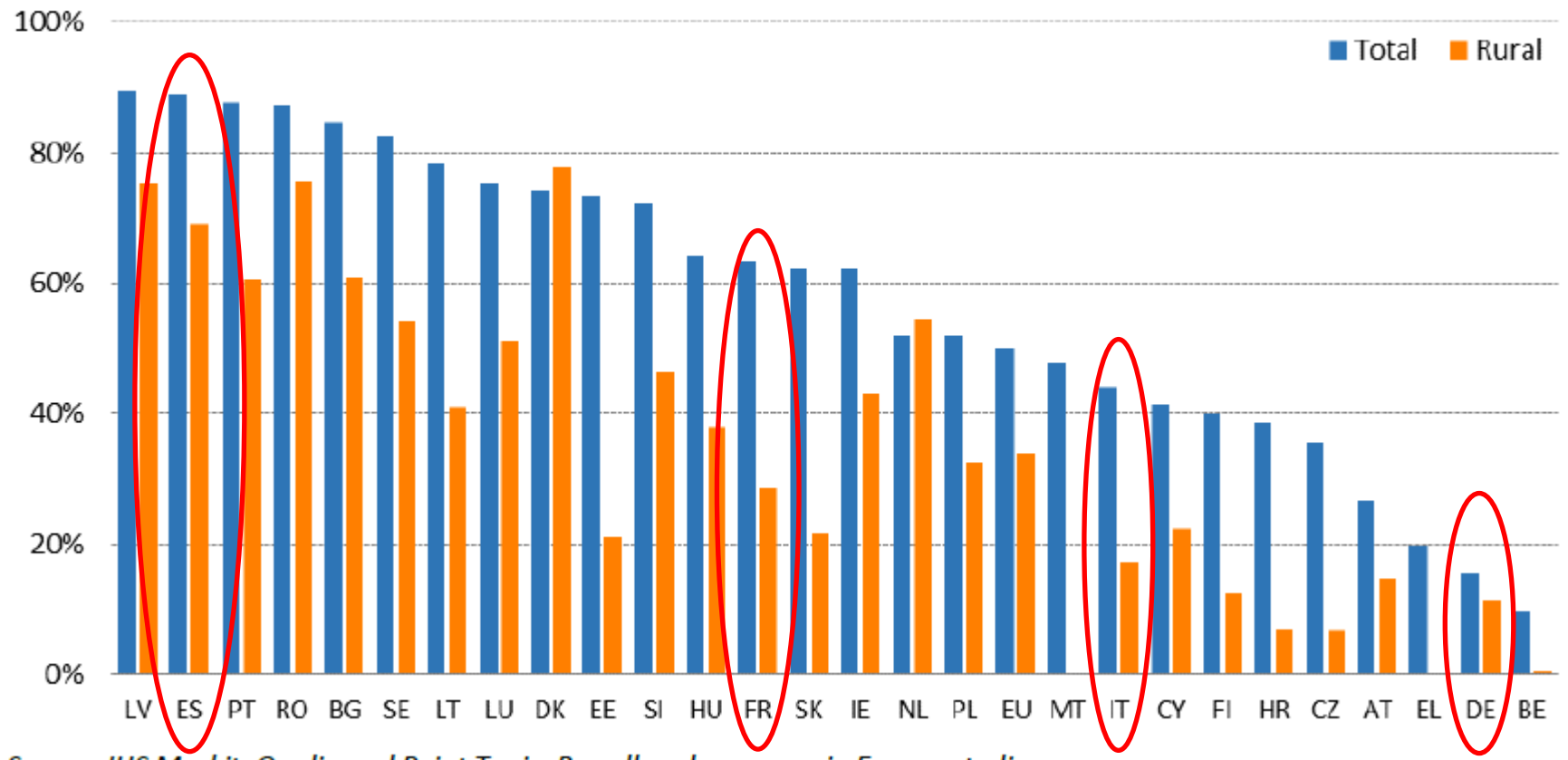
Copper switch-off: Regulation for a Successful Transition into the Fibre World

DESI index 2022

Figure 22 Fibre to the Premises (FTTP) coverage (% of households), mid-2021



Source: IHS Markit, Omdia and Point Topic, Broadband coverage in Europe studies

"Germany is lagging behind"

Regulatory issues for guiding migration proces by NRAs

- Deciding on the parts of the legacy access network to be decommissioned.
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- Trial/test run with the operators.
- Ensuring/monitoring the availability of alternative access products of a suitable quality.

Source: BEREC (2020), BEREC Response to the Targeted consultation on the revision of the Commission's access recommendations, BoR (20) 169, Q34