



SUBMARINE CABLES

Remi Van de Calseijde | Corporate Affairs | ENISA Telecom Security Forum | 13 October 2021

ABOUT LIBERTY GLOBAL



United Kingdom – 50% Ownership



Ireland - 100% ownership



Belgium – 57% Ownership



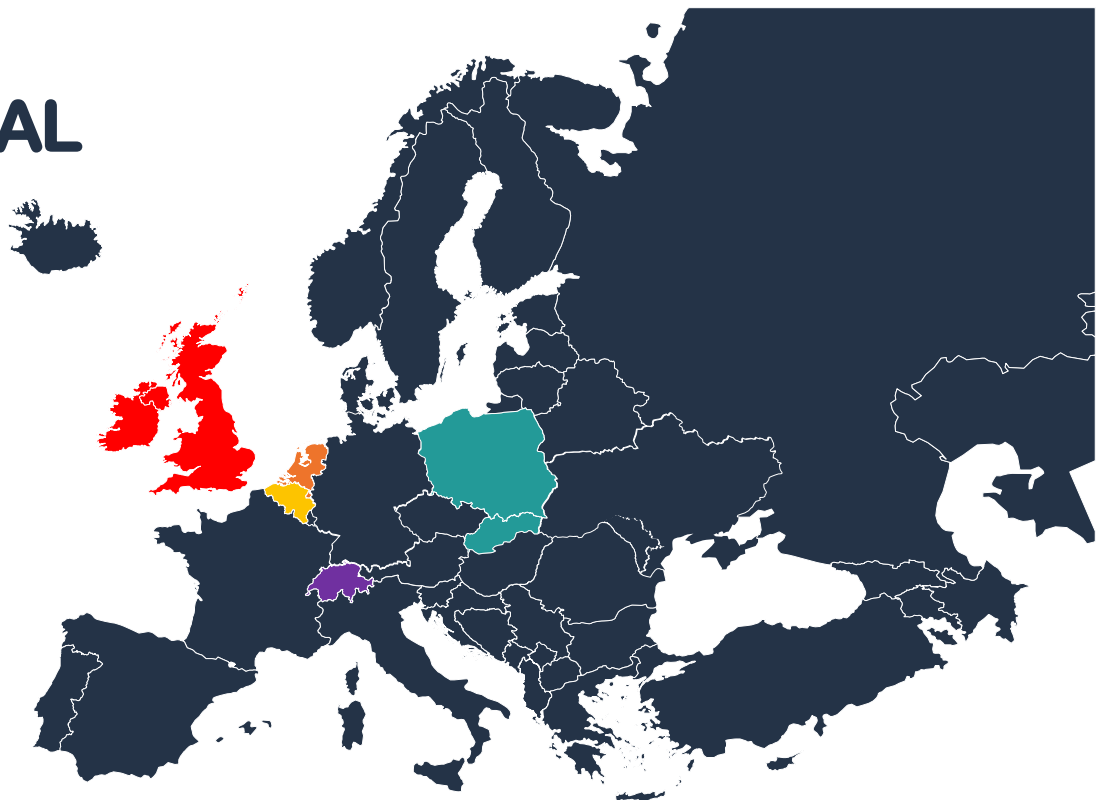
Switzerland – 99% Ownership



Poland – 100% Ownership
Slovakia – 100% Ownership



The Netherlands - 50% Ownership



11M Homes Passed



5.7 Mobile Subs



5.7M Customers

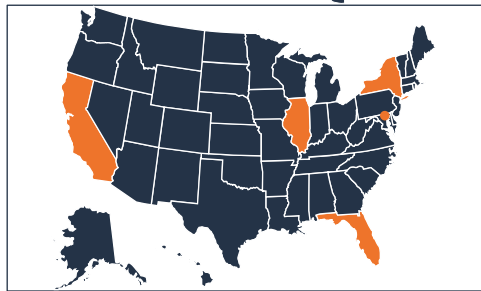
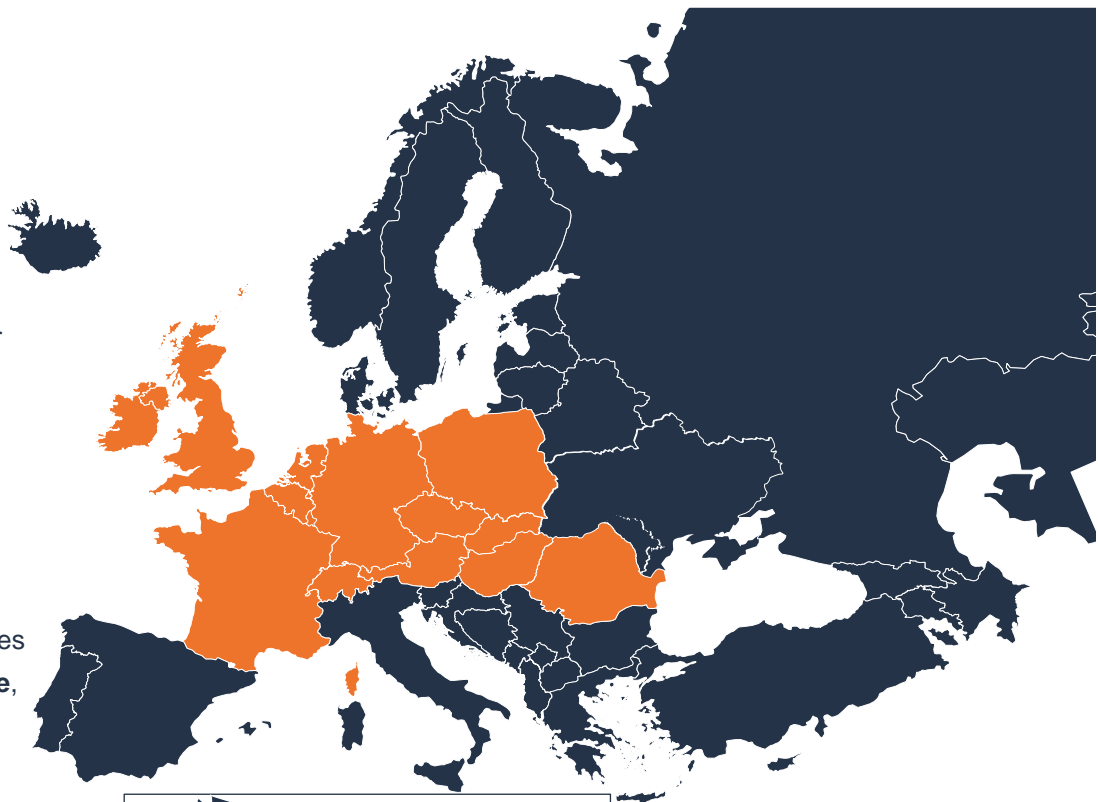


12.7 RGUs

RELEVANCE

Why submarine cables matter to Liberty Global

- Primary objective of our networks is to provide **excellent connectivity** for the **end-users** of our affiliates and joint-ventures
- To this end, our **IP networks span the globe** – **supported by submarine cables** both on **transatlantic** routes and within **Europe**
- Our networks are present at many third-party sites (colocations), providing **geographical resilience**, **optionality** and **optimal routes**
- Additionally, we provide IP transit, as well as interconnectivity to **Liberty Latin America** – services also supported by submarine cables



Approximate locations of AS6830 PoPs
(in orange)

APPROACH

Intercontinental (transatlantic) connectivity

- We lease capacity on **four transatlantic cables**, from the US to Germany, the UK and the Netherlands
- **Leasing capacity** facilitates **practice of fibre-/capacity 'swaps'** between operators, improving flexibility: owning one or more fibre-pairs is not a necessity
- **Geographical diversity** (and thus **optionality**) is key:
 - Helps address demand for transatlantic connectivity via most **optimal routes**, handing **off traffic as close as possible** to the end-users of our affiliates & JVs
 - Also provides **greater redundancy & risk management** possibilities

Pan-European connectivity

- A dense **mix of submarine and terrestrial** connectivity underpins the European side of our network
- Similarly to transatlantic connectivity, **geographical diversity is a key driver** for our pan-European routes
- This entails leasing capacity on several cables between Ireland, the United Kingdom and continental Europe, enabling us to **route traffic around potential problems**
- Submarine cables are **by no means invulnerable**, incidents such as **fibre cuts** are relatively frequent (particularly in the English channel/North Sea)



MARKET DEVELOPMENTS

Global aspects

- **Demand** for international connectivity continues to **soar**
- Demand is addressed by a **flourishing market**, with **prices for bandwidth** typically **declining**
 - New capacity is being lit
 - New cables are being deployed and planned
- **Content providers** replaced international carriers as key sources of demand, as **TeleGeography** (2021) notes:
 - They account for ~2/3 of used capacity
 - They do so primarily on transatlantic routes, linking their data centres with IP interconnection hubs
 - Major content parties move into an investor/owner role
- On Europe-Asia routes, **traditional carriers** are still the main sources of demand

European aspects

- **Europe** continues to be **well-connected**, but quite a few submarine cables are starting to show their age (>25y) – maintenance costs may trigger ‘early’ decommissioning
- **Market participants respond** to on-going and looming **cable retirements** (e.g. TAT-14, 2001-2020) on transatlantic routes, in view of continuing demand
- **Stratix** (2019) finds **repeated** long-distance cables are more affected by aging, whereas **unrepeated** cables (≤500km) have lower maintenance and upgrade costs



POLICY OUTLOOK & RECOMMENDATIONS

Incentivising investment

- The EU and Member States (MSs) – individually and jointly – are keen on **incentivising investment** in this area
- For example, **EllaLink** was ‘launched’ during Portuguese EU Presidency – linking **Europe** and **Latin America** (co-funded by the EU)
- Member States have called on the Commission to take action:
 - Mapping available connectivity infrastructures
 - Gain an overview of data flows to and from Europe
- A stable and predictable regulatory environment is key – in Europe, this should entail a harmonized implementation of applicable policies and regulations

Fostering diversity

- Public stakeholder attention to all elements relevant to reaching Europe’s connectivity ambitions is welcome – submarine cables are a **key element** in this regard
- At the same time, the market responds to the growing demand for connectivity – **public funds** should be used where commercial investment is not viable and should not crowd out private investment
- However, in view of need for **geographic resilience**, it is **not just** the **total** amount of **capacity** which matters
- Incentivizing **‘extra’ drops** (where possible) on existing or planned cables can help operators diversify routes – enabling effective risk management





THANK
YOU