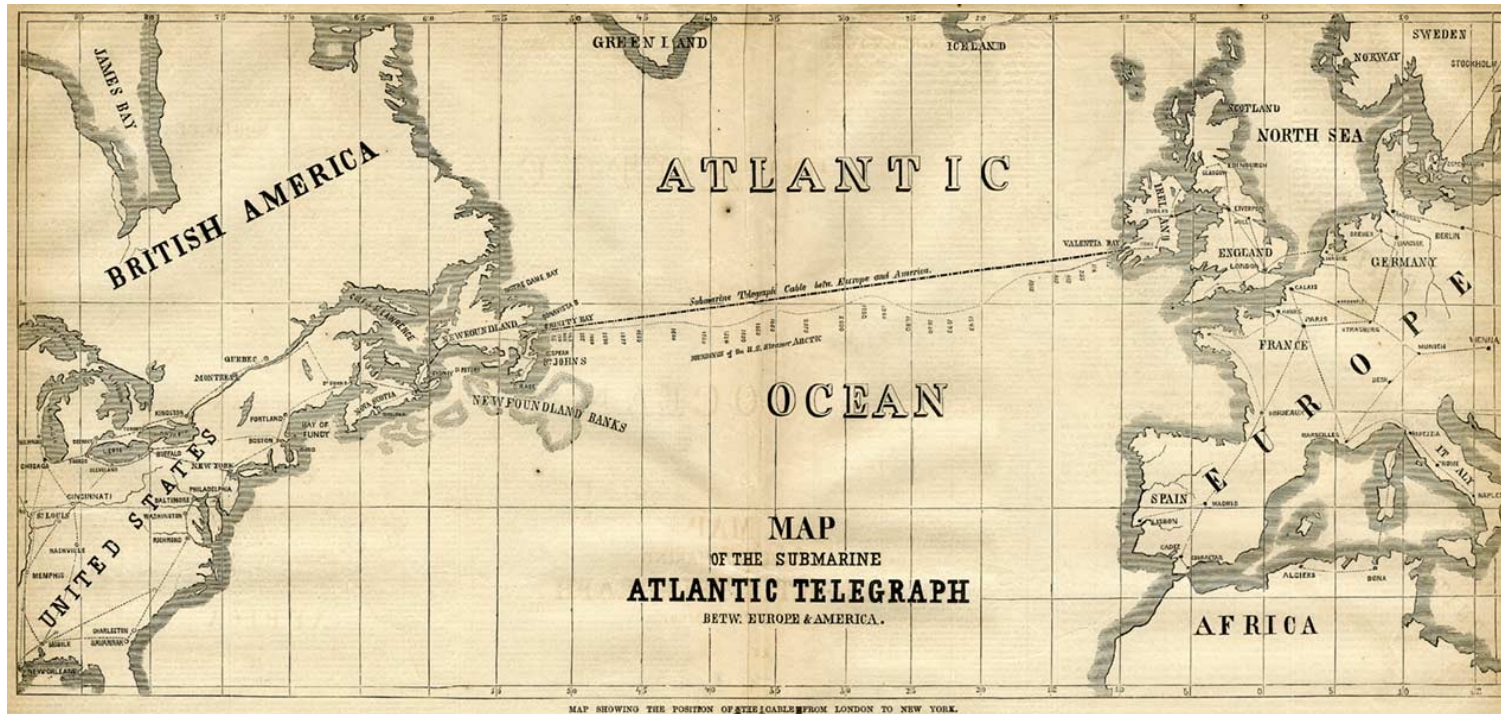


Submarine Cable Connectivity in the Atlantic

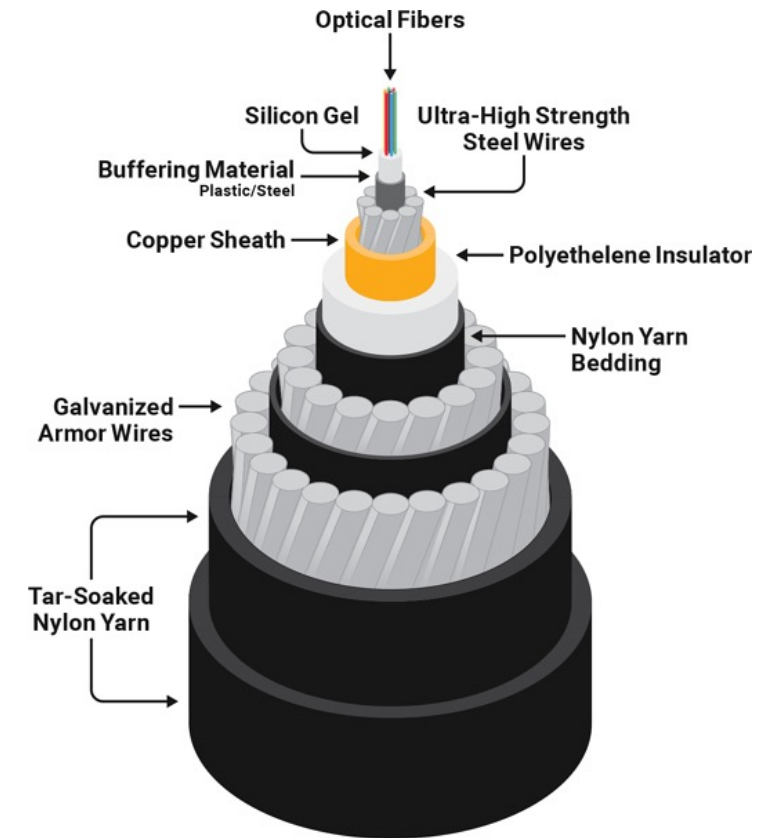
Lane Burdette

Digital Atlantic
March 1, 2024

From submarine telegraph to modern fiber-optic, the Atlantic is key



Map of the 1858 Atlantic Cable route from *Frank Leslie's Illustrated Newspaper* (Aug 21, 1858) via atlantic-cable.com



Today's Trans-Atlantic submarine cables

North Atlantic ("Trans-Atlantic")

- AC-1 – 1998*
- Yellow – 2000
- EXA North & South – 2001*
- FA-1 – 2001*
- Tata TGN-Atlantic – 2001*
- Apollo – 2003*
- EXA Express – 2015
- AEC-1 – 2016
- MAREA – 2018
- Havfrue/AEC-2 – 2020

- Dunant – 2021
- Grace Hopper – 2022
- Amitie – 2023
- Anjana – 2024
- Nuvem – 2026

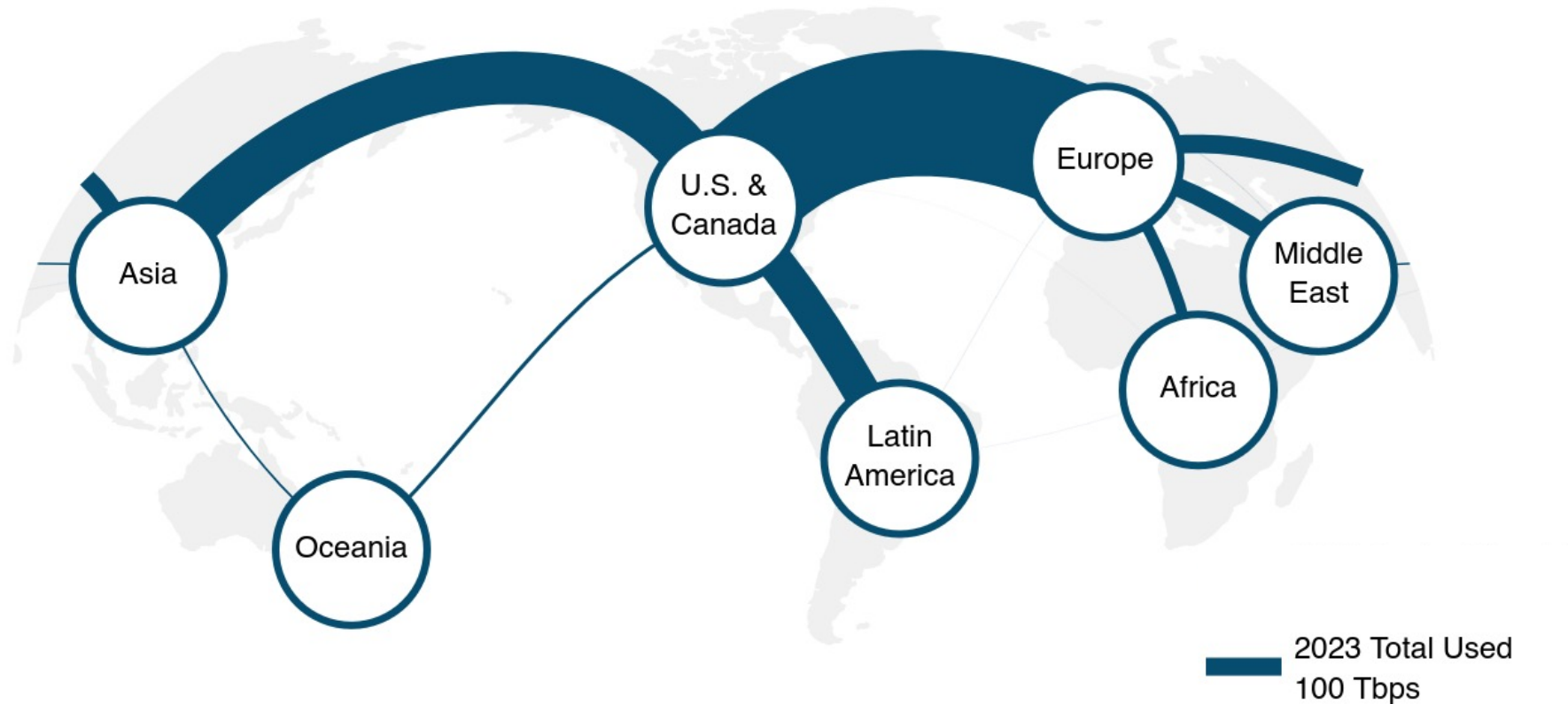
South Atlantic:

- SACS – 2018
- SAIL – 2020
- EllaLink – 2021

**cable has 2 segments*

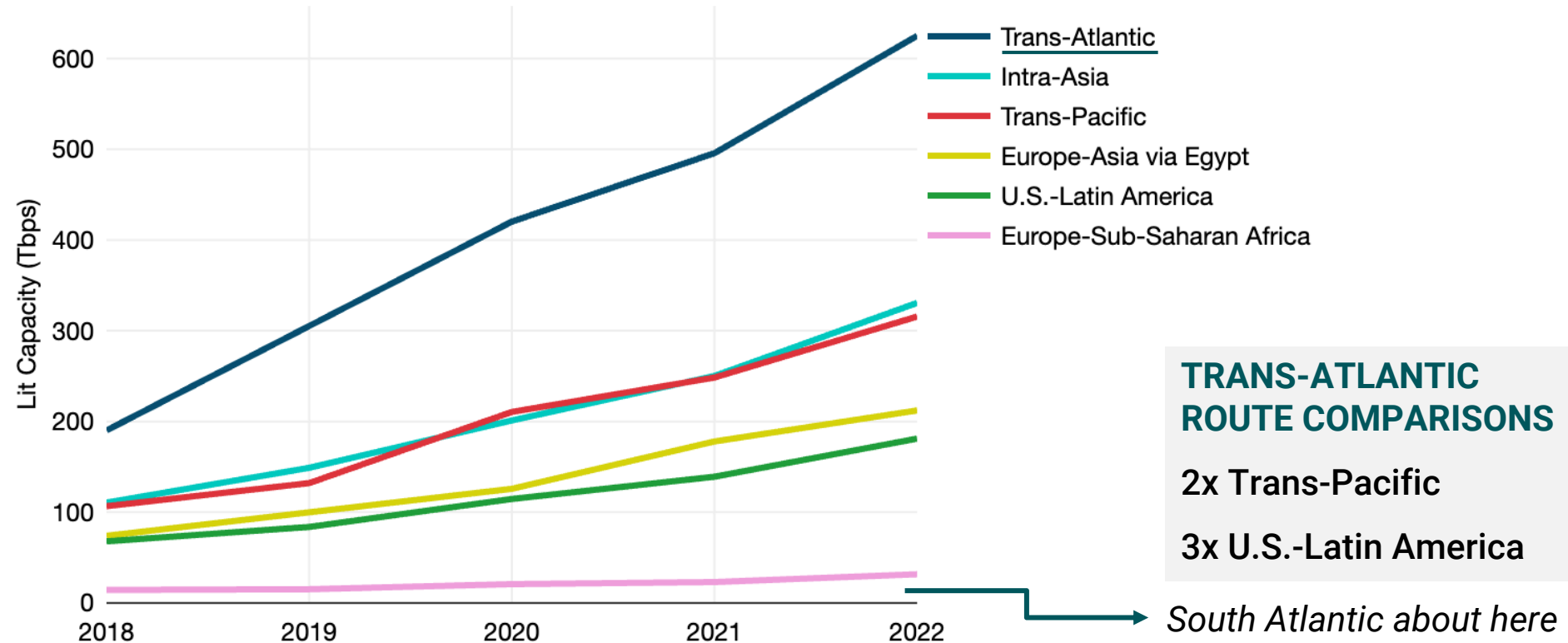
Still our largest global route

Used Inter-Regional Bandwidth, 2023

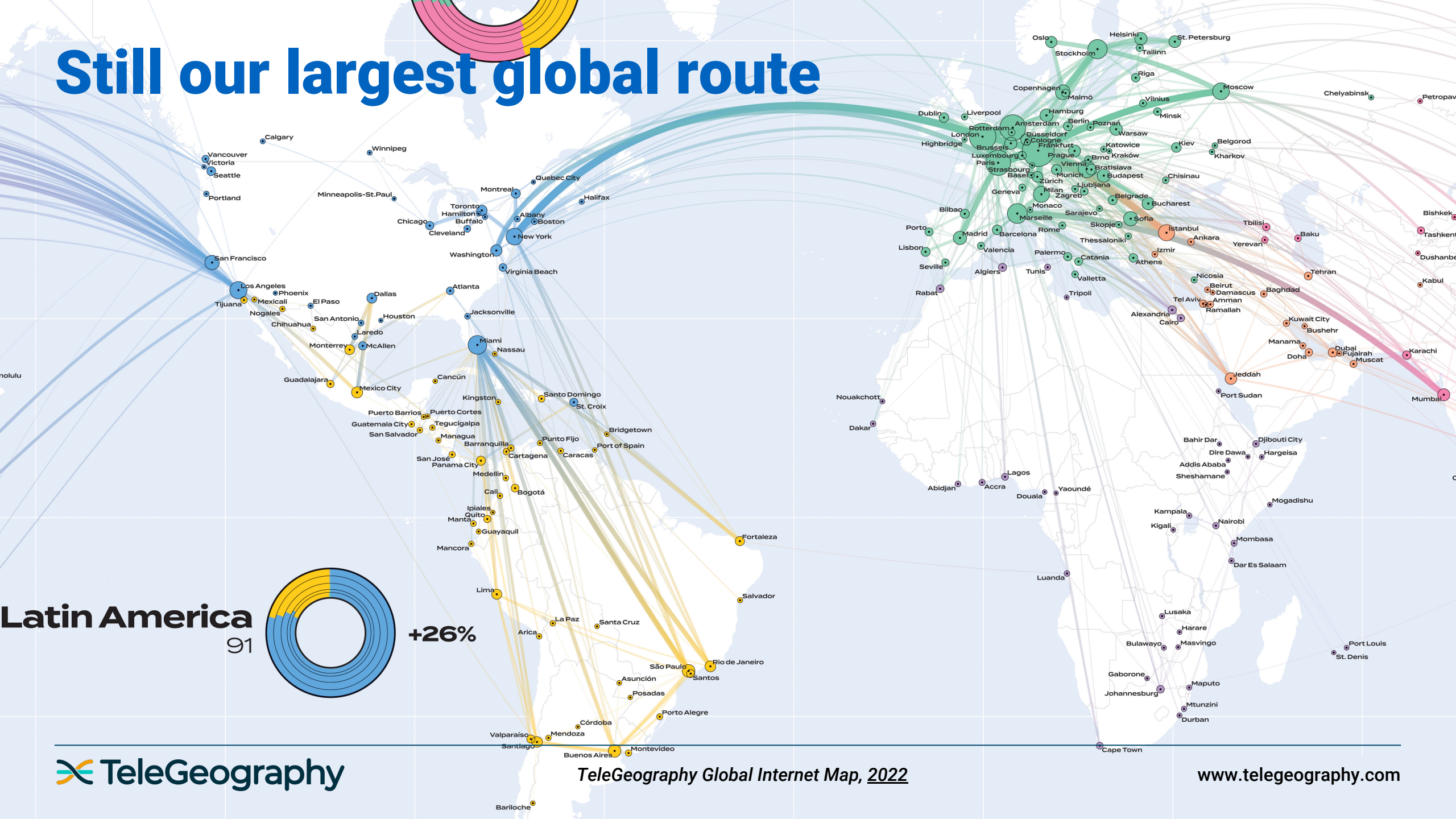


Still our largest global route

Lit Submarine Cable Supply by Route, 2018-2022

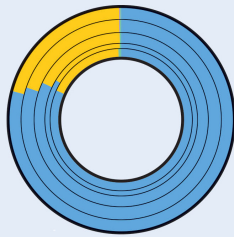


Still our largest global route



Latin America

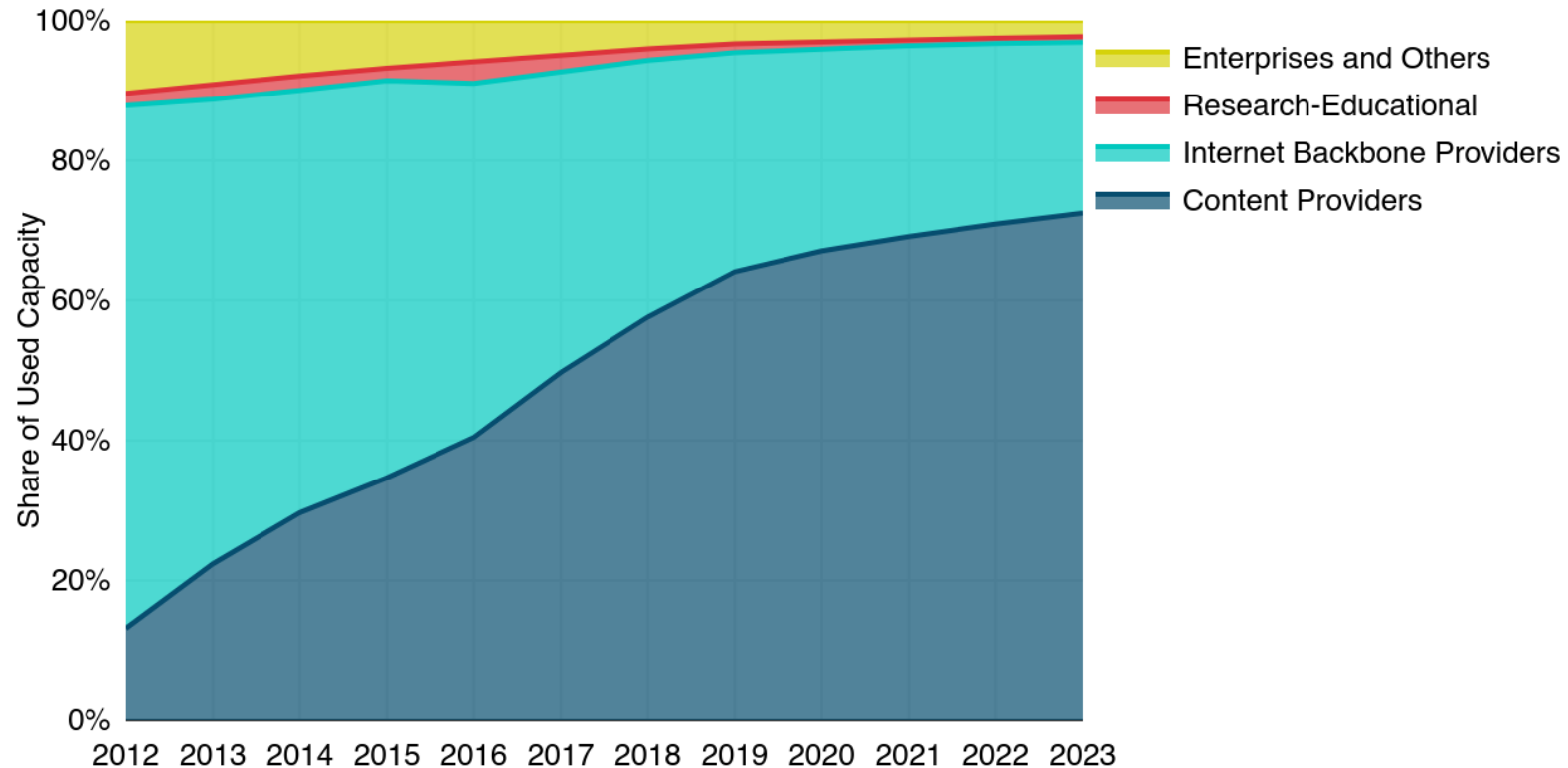
91



+26%

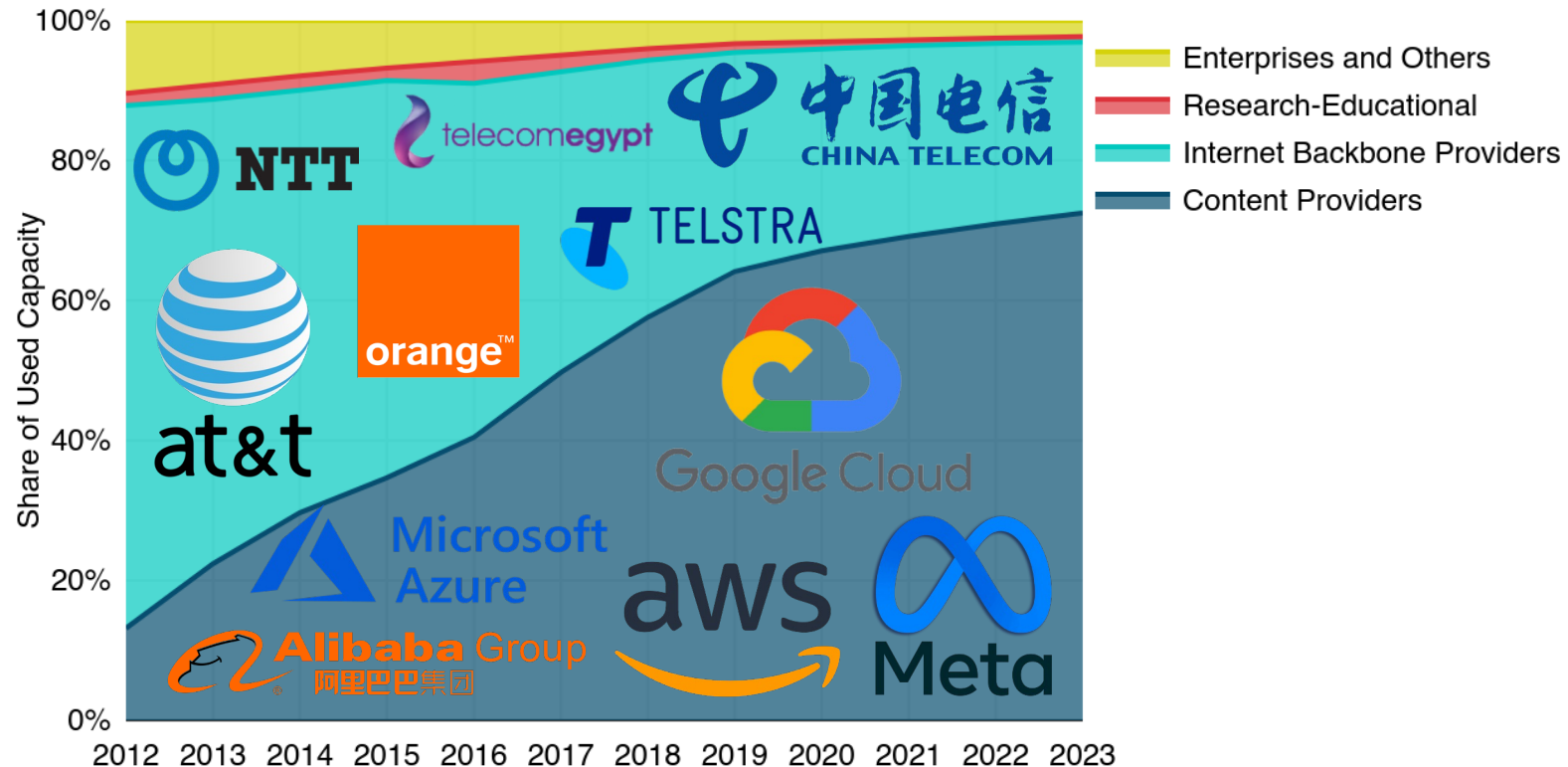
Who's using all this capacity? (globally)

Used International Bandwidth by Source, 2012-2023



Who's using all this capacity? (globally)

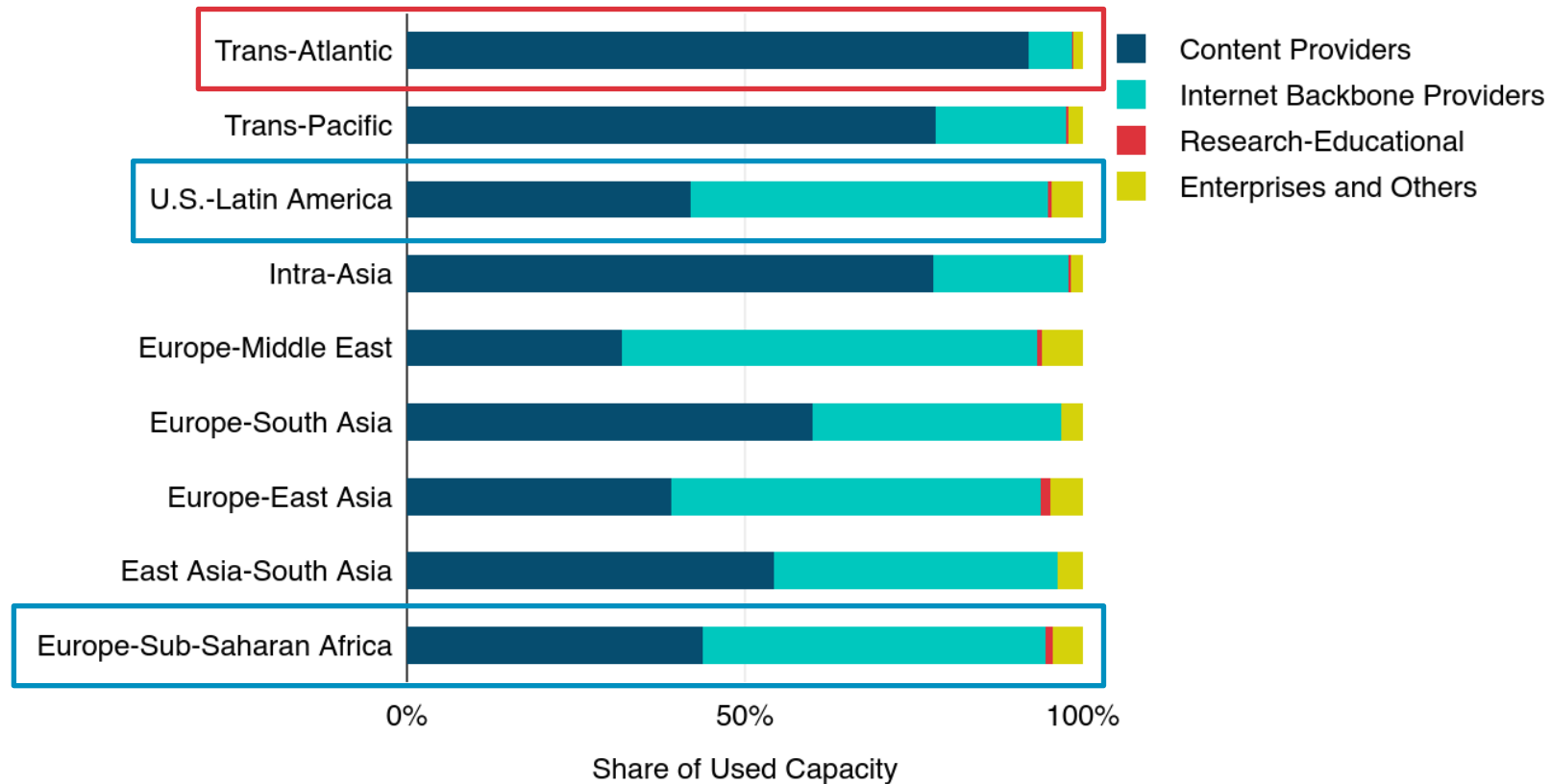
Used International Bandwidth by Source, 2012-2023



Logos included as examples and do not represent specific datapoints

Content providers dominate the Trans-Atlantic more than any other route

Share of Used Bandwidth by Category for Major Routes, 2024

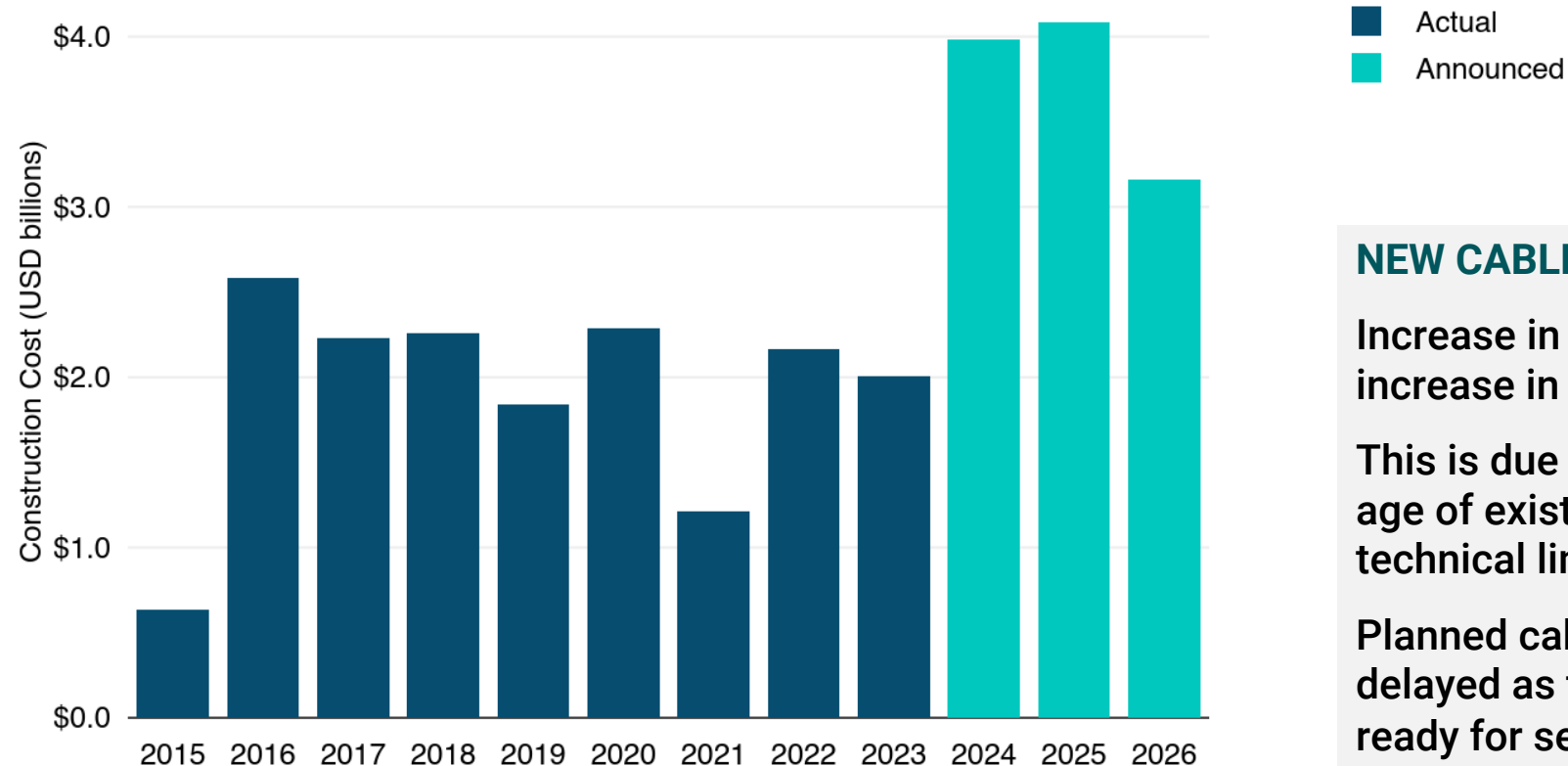


What drives bandwidth demand and cable investment? (examples)

- Availability of capacity and fiber pairs
- Route diversity and redundancy
- Ownership economics
- Network requirements between proprietary data centers; and between data centers and customers
- Availability of cheap and sustainable energy
- Geopolitical and regulatory environments, for both cables and data centers

How much does all this cost? (globally)

Construction Cost of Submarine Cables, 2015-2026



NEW CABLE BOOM

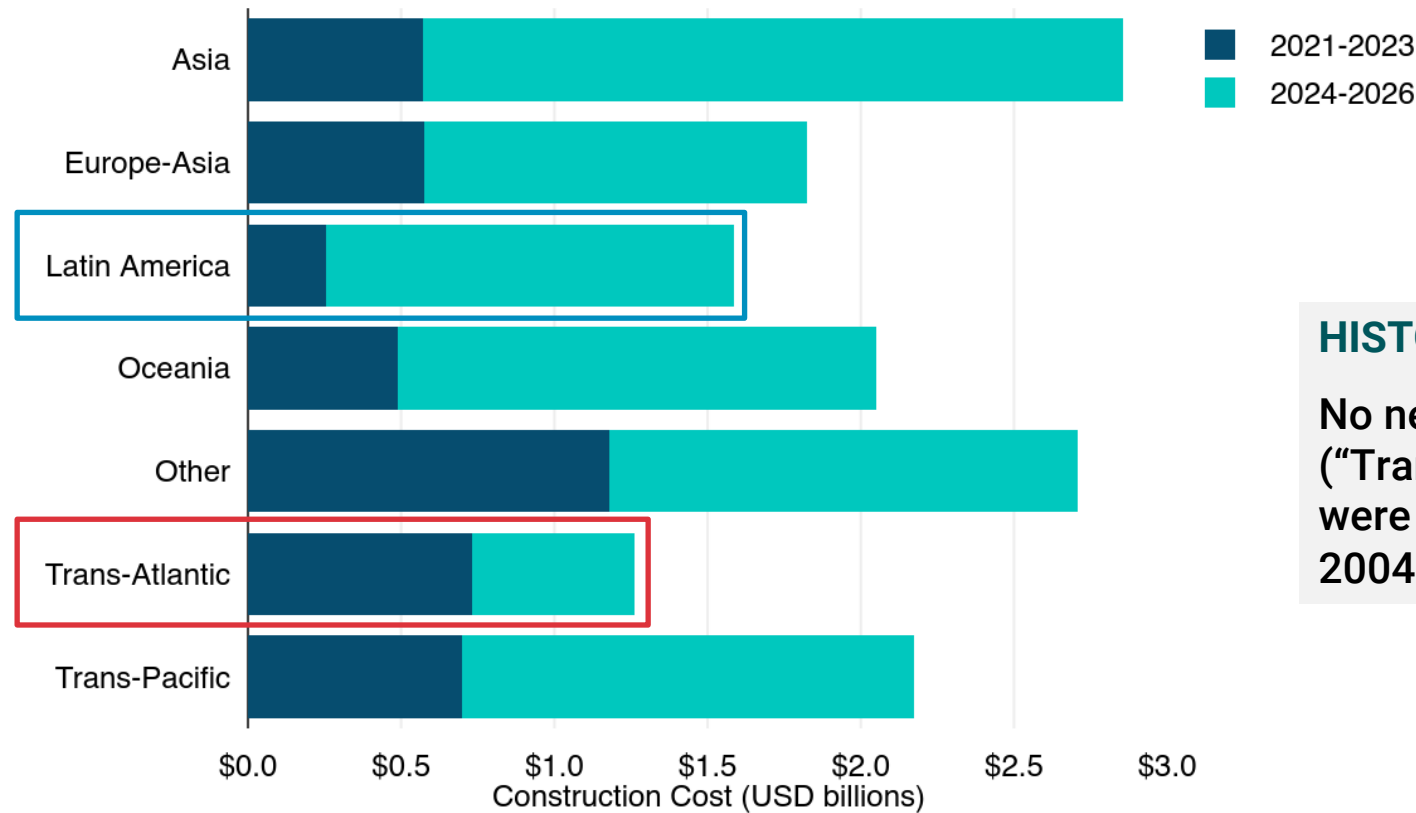
Increase in cost driven by increase in number of cables.

This is due to growing demand, age of existing systems, and technical limitations.

Planned cables may also be delayed as they approach their ready for service (RFS) date.

Comparatively less, but still impressive, investment planned for the Atlantic

Construction Cost of New Submarine Cables Entering Service by Region, 2024



HISTORICAL NOTE

No new North Atlantic (“Trans-Atlantic”) cables were built between 2004-2014

What should regulators do?

Selected ICPC best practices (summarized)

- Encourage multiple and diverse submarine cable landings
- Promote transparent regulatory regimes that expedite cable deployment and repair
- Identify submarine cables in state mapping resources and tools
- Ensure that any cable protection zones are adopted [only] with consultation & support of cable operators

<https://iscpc.org/publications/icpc-best-practices/>



Submarine cables are just one part of the equation

- Beach landings alone are insufficient
- Sufficient backhaul and route provisioning needed to reach consumers
- Satellites complement (not replace) submarine systems; help to reach unconnected or under-connected communities

Thank You

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