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# Wholesale Fiber in the US – an Inflection Point

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# Wholesale Fiber in the US – an Inflection Point

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**March 2024**

The wholesale fiber investment opportunity in the US

## Inside



## WHITEPAPER

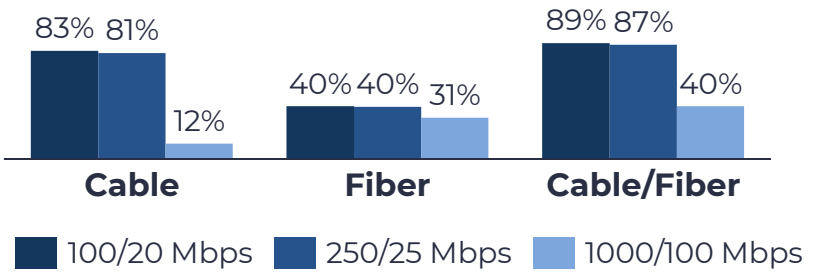
This paper dives deep into the US broadband market, analyzing the current landscape dominated by cable networks and the challenges that serve as a roadblock for fiberization. Drawing from successful global precedents and tackling the specific barriers within the US, we highlight the potential for a successful wholesale fiber infrastructure deployment in the US.

# The US has a long way to fiberization – as cable continues to dominate

The US broadband market is complex and varied due to its large geography and demographic spread. It stands as an outlier amongst its peers with its low correlation between the level of fiberization and average wired broadband speed. Although only 20% of fixed broadband subscribers are connected to fiber, 77%+ wired broadband subscribers enjoy 100 Mbps+ download speeds. Even with fiberization levels below the OECD average, the US substantially surpasses the OECD's average speeds for subscribers.

Cable technology predominates within the U.S., with speeds up to 250/25Mbps (download/upload) accessible to more than 81% of American homes. This, however, also suggests that merely 20% of households are reaping the advantages of the symmetrical upload speeds provided by fiber.

**Figure 1:**: % Fixed broadband technology and speeds available to households (Download/Upload)[1]




Leveraging advancements like the faster DOCSIS 4.0, cable-centric companies such as Comcast and Charter are intensifying their efforts to enhance and extend their cable networks to rival the performance of fiber. These enhancements come with lower capex implications compared to overbuilding fiber. The financial considerations, coupled with limited consumer awareness and opposition to allowing physical modifications to their properties, have been significant barriers to the widespread adoption of fiber in the US.

## Despite low take-up of fiber, the US manages widescale availability of high-speed broadband

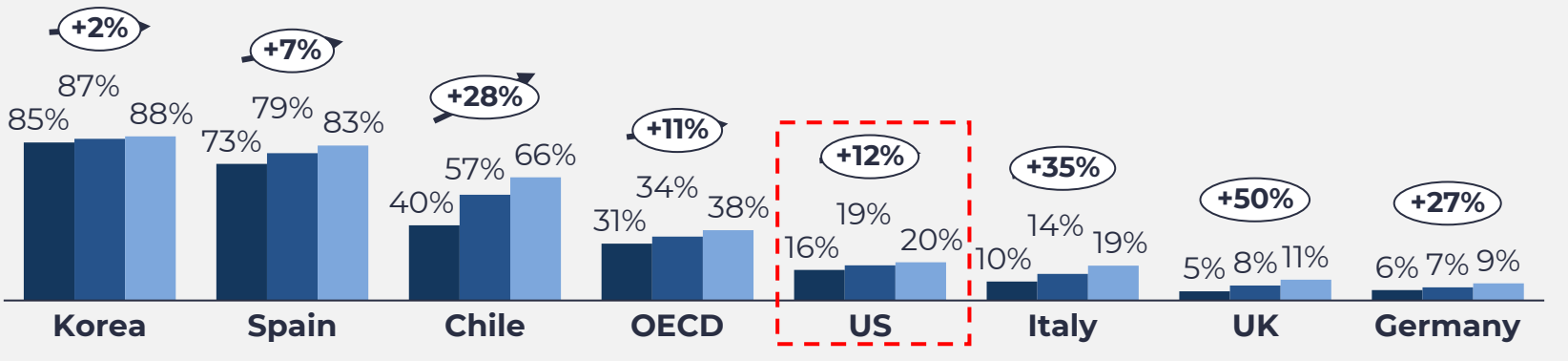



**Figure 2:** Percentage of fiber connections in total fixed broadband[2]

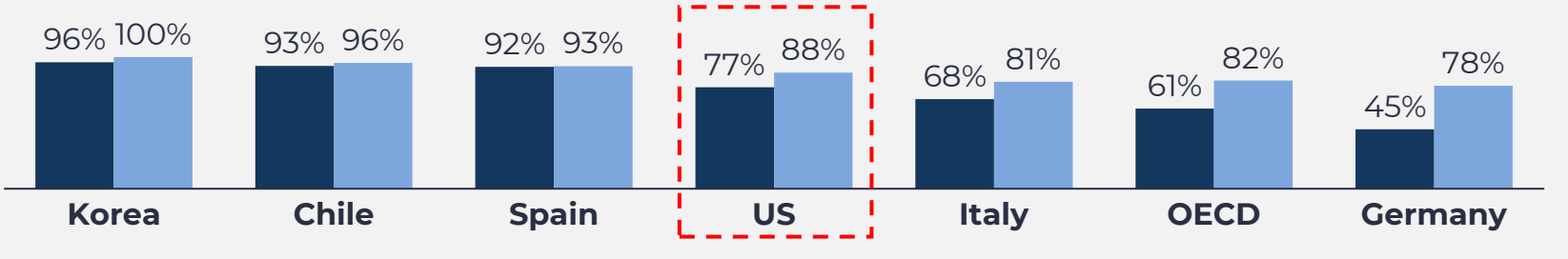



**Figure 3:** Percentage of subscriptions by speed tiers, 2022[2]



1. FCC 2023 2. OECD; fiber numbers exclude FTTC/N Capex: Capital expenditure

# Take-up is the biggest challenge for fiber in the US, not coverage

Although the pace of fiberization in the US has been somewhat slow, a more significant challenge lies in persuading households to transition to fiber. Even with an increasing proportion of the population having access to this technology, only about 13% opt for fiber broadband subscriptions. This reluctance encompasses not only those hesitant to switch to a new fiber provider but also individuals who choose not to upgrade to fiber when their existing ISP upgrades from legacy systems.

Price remains a significant barrier to the wider adoption of fiber. Cable can be up to 67% less expensive for comparable download speeds, with fiber only becoming economically viable at gigabit and higher speeds. Consumer demand for the symmetrical upload speeds provided by fiber appears limited, even though cable offers upload speeds of just 20 Mbps at prices as high as $60 per month. Given the lack of imminent applications requiring gigabit-plus speeds, the average consumer is not inclined to upgrade to a 2 Gbps service.

**Figure 4:** US population covered by fiber, and take-up[1] where fiber is available[2]

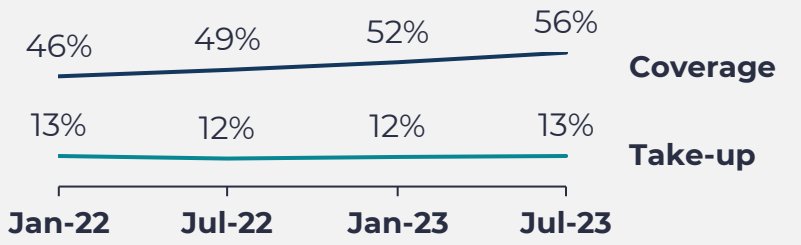
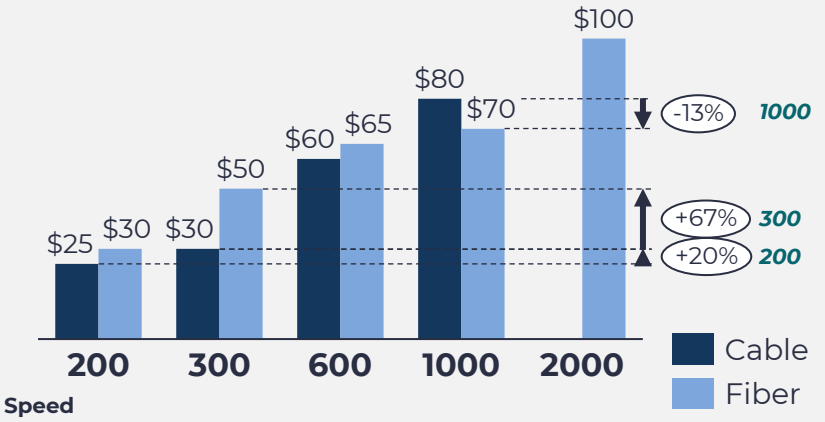



**Figure 5:** Download speeds (Mbps) by technology and Tier 1 ISP price plans[3]




| |
|---|
| **Price** |
| **Adequacy of cable** |
| **Lack of awareness** |
| **Switching hassle** |
| **Contractual obligations** |
| **Bundles** |
| **FWA** |

**Figure 6: The steep hurdles faced by fiber take-up**

Beyond cable's adequacy and consumer sensitivity to price, unawareness of fiber's benefits and its availability also impedes uptake. Homeowners' reluctance to permit necessary physical upgrades for fiber installation, coupled with contractual commitments and the inertia of bundled services, limits fiber adoption.

An emerging trend in the US market, as detailed in our article “FWA’s transitory role on the path to fiber in rural USA,” is the growing preference for Fixed Wireless Access as an alternative to traditional fixed broadband. Dominating the 2023 US broadband landscape, FWA accounted for 97% of the net increase in fixed broadband subscriptions[4]. Many subscribers are opting for FWA over fiber, drawn by its straightforward installation process and competitive pricing.



1. Take-up: Subscribers/Premises connected 2. Broadband Now 3.WhistleOut 4. Leichtman

# Strategic wholesale fiber deployment is likely to overcome the take-up hurdles in the US

The US' challenges with fiber coverage and take-up are multi-fold:

- High CPPP especially in unconnected and under-connected areas
- Extensive cable network serving as competition
- Operator inertia in network upgrades due to lack of competition
- High cost of capital due to macroeconomic conditions
- Historically limited subsidy and government support.

The US broadband market is heavily concentrated – with the top 4 vertically integrated ISPs commanding over 81% market share. Merely 1% of broadband subscriptions rely on a wholesale network.

A wholesale model splits the conventional TelCo into a "NetCo" and a "ServiceCo". The NetCo operates a wholesale-only fixed network infrastructure, leasing capacity to one or multiple ServiceCos that operate as Retail Service Providers (RSPs).

Wholesale networks foster competition, lower prices and improve service quality. Unexplored in the US, this model creates the right mix of incentives to overcome challenges with fiberization.

Wholesale networks are well suited for greenfield deployments in high CPPP and long lead time unconnected areas – especially when executed in partnership with an infrastructure investor. The relatively passive nature and steady income generation of the asset make it desirable for infrastructure investors who have access to low-cost, long-term capital.

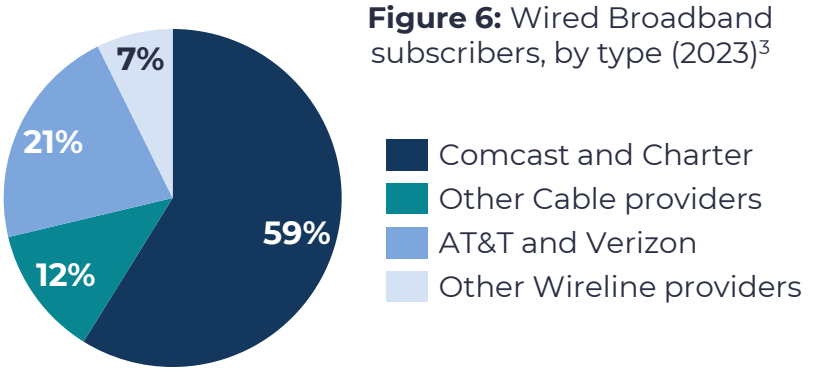



**Figure 6:** Wired Broadband subscribers, by type (2023)[3]

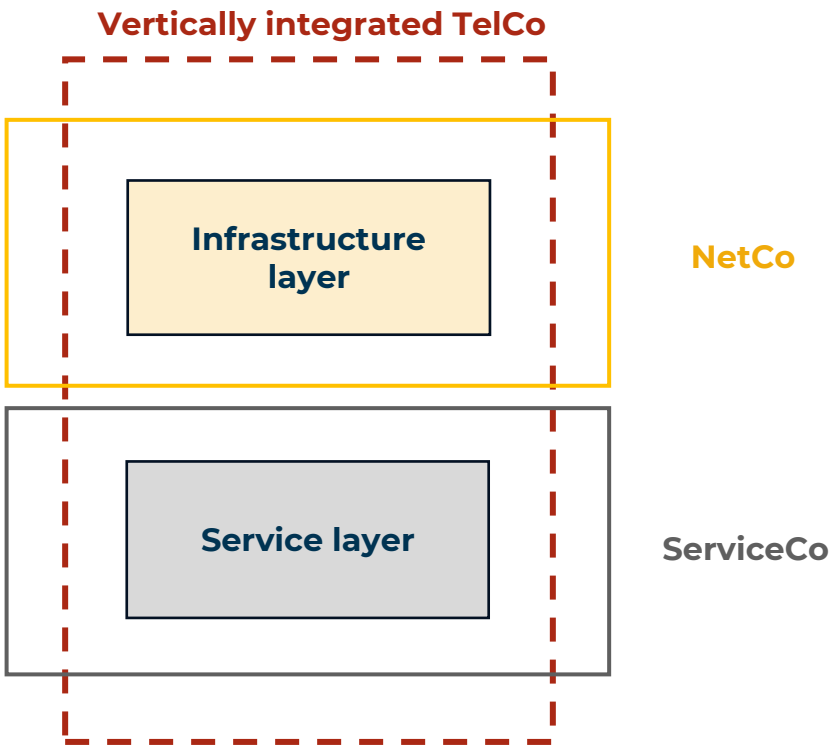



**Figure 7:** Vertically integrated vs Wholesale model

The multiple RSP model on the ServiceCo side is set up to maximize take-up. Multiple small regional service providers, often with better service and NPS scores than national operators, can be onboarded quickly and without significant capex to serve clusters of population.

To achieve cost efficiency in high CPPP low population density areas, wholesale networks can effectively compete to win the recent flurry of US government programs such as USD42.5bn BEAD that subsidizes operators deploying fiber in under-connected and unconnected areas.

CPPP: Cost per premise passed

# Europe’s wholesale fiber playbook offers valuable insights for the US

The convergence of high cable penetration, vast geographic areas with sparse population, and the dominance of vertically integrated incumbents significantly impede fiber expansion in the US. However, lessons from European markets that have surmounted similar challenges offer valuable insights for US infrastructure investors and operators interested in the wholesale fiber sector.

Open Fiber in Italy exemplifies how a well-capitalized, strategically aligned wholesale operator (with Enel providing infrastructure access and expertise and Vodafone as a key RSP) can effectively challenge incumbents. Yet, unlike the US scenario, Open Fiber didn't face a pre-existing saturated cable network.

Deutsche Glasfaser's approach in Germany’s crowded market showcases a rural-centric wholesale network reaching over 2mn homes, aiming to expand to 6mn. Supported by infrastructure investors like EQT and OMERS, Glasfaser’s strategy may suit the US's low-density and under-served areas.

In the UK, Vodafone collaborates with CityFibre, an altnet, to deliver a full-fiber network without owning substantial infrastructure. This partnership, facilitating access to over 8mn homes, demonstrates the potential for branded RSPs to partner with well-funded wholesale networks.

Initiating wholesale networks in the US, requiring significant capital, time and logistical efforts, encounter distinct challenges across diverse geographical, economic and political contexts. Utilizing insights from international successes can guide the development of effective strategies and uncover opportunities for wholesale fiber projects in the US.

## Open Fibre’s meteoric rise has played a part in forcing TIM’s NetCo sale decision

The Italian broadband landscape has witnessed two significant milestones within the European broadband sector: the rise of one of the largest and most successful wholesale operators, and the NetCo-ServiceCo separation executed by a Tier 1 European telecommunications company.

open fiber

Open Fiber is a wholesale-only infrastructure operator building out an extensive greenfield FTTH network in Italy. Started as a JV between Enel Group (a utility company) and CDP Equity – the company benefitted from RoW and the infrastructure experience of Enel. It operates with key retail partners such as Vodafone and Wind.

**Coverage[1]:** 13mn households
**Budget:** EUR6.2bn/EUR15bn
**Buildout:** 57,000km/88,000km
**Active Customers:** 2.3mn

TIM

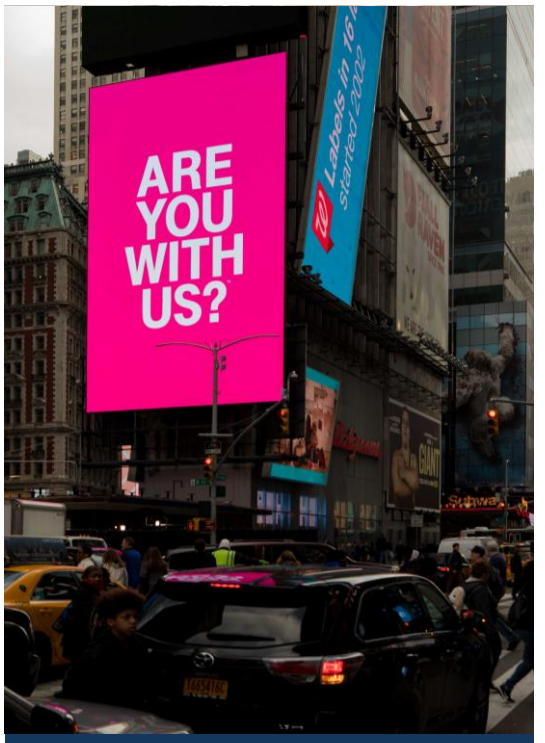
Confronted with rising debt and shrinking market share, Italy's top broadband provider is splitting into a NetCo and a ServiceCo. KKR is set to acquire the NetCo for EUR22bn. While the incumbent's mostly wireline network has been upgraded to FTTx, it can't match Open Fiber's complete FTTH network. This new investment is expected to spur a transition to FTTH for TIM.



1. Reported as of December 2022 RoW: Right of way RSP: Retail service provider

# Wholesale fiber in the US – getting the numbers to work

**Low hanging fruit**




**Setting up for success**

**Leverage the state**

## Low competitive intensity areas

A wholesale fiber network will have to buck the trend of low fiber take-up in the US to be economically viable.

Targeting underserved areas with limited competition will be key to achieving higher take-up.

GigaPower , AT&T and BlackRock's partnership seems to follow this strategy, covering areas such as Phoenix Metro and Las Vegas – cities with some of the lowest median download speeds[1]

## Partnerships are a key to success

A wholesale operator is only as good as the reach of its partner retail service providers.

The nascent and relatively unexplored retail service provider model in the US will require the wholesale operator to evaluate and set up these relationships sooner rather than later.

Locking in a well-known brand looking to enter the RSP space, such as T-Mobile, as an anchor partner sets a wholesale network up for success.

## Subsidies make the economics work

The US' recent federal and state funding programs, such as the USD42.5bn BEAD, incentivize wholesale fiber networks.

With a focus on underserved areas and a preference for fiber technology – programs such as BEAD can be a key part of thwarting the intensive capex and high CPPP synonymous with fiber deployments in the US.

Wholesale operators in countries such as Germany have consistently relied on subsidies to fuel their network expansion.



1. Ookla 2023

BEAD: Broadband, equity, access and deployment CPPP: Cost per premise passed

# Strategic partnerships offer a promising avenue for investors

In the strategic landscape of expanding US broadband, investors have two primary avenues within the wholesale network domain: greenfield and brownfield joint ventures, each tailored to different market scenarios.

In greenfield ventures, the ideal strategy involves partnering with an RSP to construct new wholesale networks in underserved areas. This approach, requiring substantial capital, opens doors to untapped markets, with the possibility to deploy FTTH. For investors, collaborating with RSPs mitigates the risks of entering new markets, ensuring stable, long-term returns through early anchor tenant agreements.

For brownfield ventures, we believe a potential investment in a NetCo split of a TelCo is a possible entry for an investor. This strategic acquisition allows for accelerated market access, an existing customer base from the anchor ServiceCo, and a pre-established operations and team. However, the investor will have to deal with the encumbrances that the legacy system brings with it and not enjoy the clean slate deployment offered by a greenfield investment.

Each model presents a strategic avenue for infrastructure investment, underscoring the need for a tailored approach based on specific market opportunities and investor objectives.

*The US wholesale fiber space is ripe for investment.*

*Fide Partners is uniquely positioned to help our clients get in on the ground floor*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