

Fiber vs. Fixed Wireless Access



Fixed Wireless provides a path to FTTH. Fiber is deployed as close to the subscriber as possible and Fixed Wireless is used in the last few hundred meters in high cost, low density serving areas when speed and initial cost of deployment are a consideration.

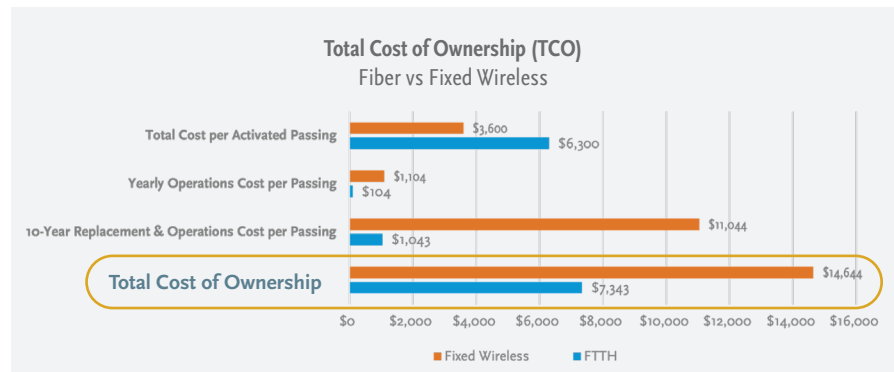
Why Fiber?

An optical fiber provides a noise-free environment for information to flow at the speed of light, providing nearly limitless bandwidth and capacity and low latency (no delay) to subscribers. When fiber is deployed as critical infrastructure, communities see immediate benefits:

- Gigabit broadband speeds and beyond
- Significant Economic Impact
- Jobs, economic diversification, education, healthcare
- Smart Grid modernization – 43% reduction in power outages¹
- Path to 5G (requires robust fiber infrastructure)

Fiber Costs Less In The Long Term²

The initial deployment cost for fiber is more expensive than Fixed Wireless (FWA) but the Total Cost of Ownership (TCO) demonstrates that fiber ends up being half the cost of FWA over time.



Fiber Delivers Gigabit Speeds Without Dependencies³

FWA networks that promise to deliver 1Gbps/500Mbps speeds, but there are limitations to how those speeds can be delivered.

Wireless networks designed based on mid-band spectrum may be challenged to reliably provide RDOF Gigabit-Level Services.



The 5 and 6 GHz unlicensed bands will have limitations to the number of subscribers served with Gigabit services.



When using these bands, the wireless provider is not protected from interference from other wireless users and devices such as common home Wi-Fi routers.

Wireless networks designed based on millimeter wave (mmW) technologies are promising but also have challenges.



The range of these networks are inherently distance limited and require tremendous amounts of fiber to feed them.



Wireless works best with a clear line of sight between the serving antenna and customer. Foliage, construction materials and weather may attenuate the signal.



The capacity of the serving tower/antenna must be adequate to accommodate the downstream and upstream capacities of all users served by that antenna or tower.



Each antenna and/or sector has adequate backhaul capacity with a reasonable oversubscription ratio such as 4:1⁴.



A congestion evaluation is performed.

¹ Chattanooga Economic Impact Study – Professor Bento Lobo UT-Chattanooga

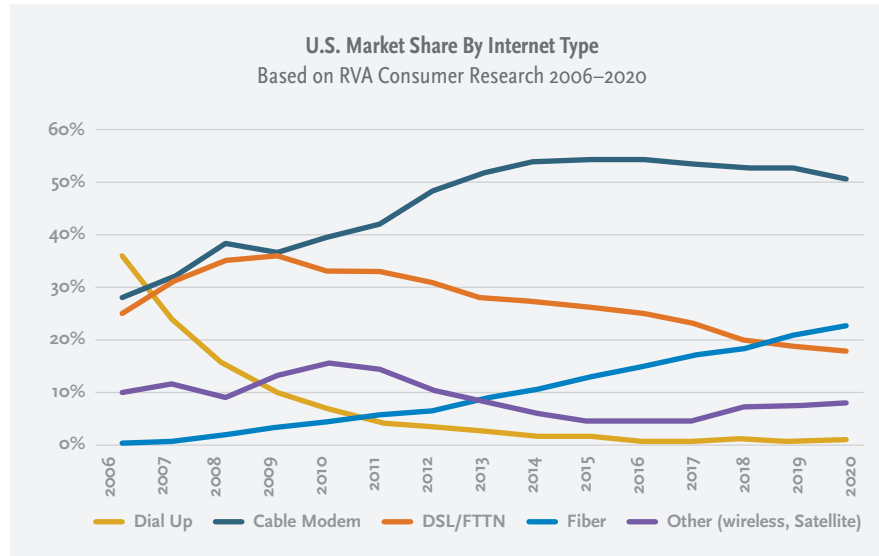
² Fiber Broadband Association

³ Larry Thompson, Vantage Point – FCC Filing

⁴ In most instances this will require the towers/antennas to be served with a fiber network

The Road to 5G is Paved With Fiber

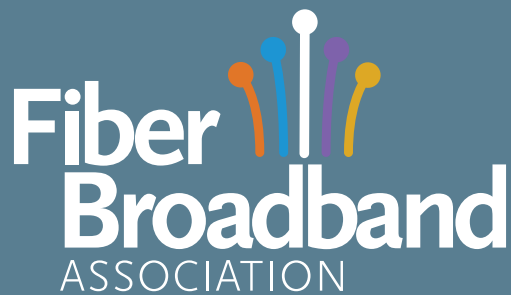
Billions of wireless devices generate performance demands on networks. These demands can only be satisfied with the prodigious amounts of bandwidth made available by fiber networks.



State of the Market

Due to its favorable attributes, fiber continues to take share at the expense of other technologies. Consumers and communities increasingly understand the value of high performance, all-fiber networks and are demanding that service providers provide such access. By contrast, fixed wireless service serves a limited market.

The number of homes passed by all-fiber networks now exceeds 50.6 million; more than 22.5 million homes are connected to all-fiber networks for at least one service (Internet, television or telephone).



If It's Not Fiber, It's Not Broadband