20th Annual
TFI Technology Conference
Austin, TX
January 23-24, 2025

2025 Wireless & Broadband Industry Panel

Implications for Tax & Valuation

Jeff Binkley (Moderator)
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Agenda

I. Introductions / Kick-Off

II. Wireless Network Perspectives

III. Broadband Network Perspectives

IV. Panel Discussion – Implication for Tax & Valuation

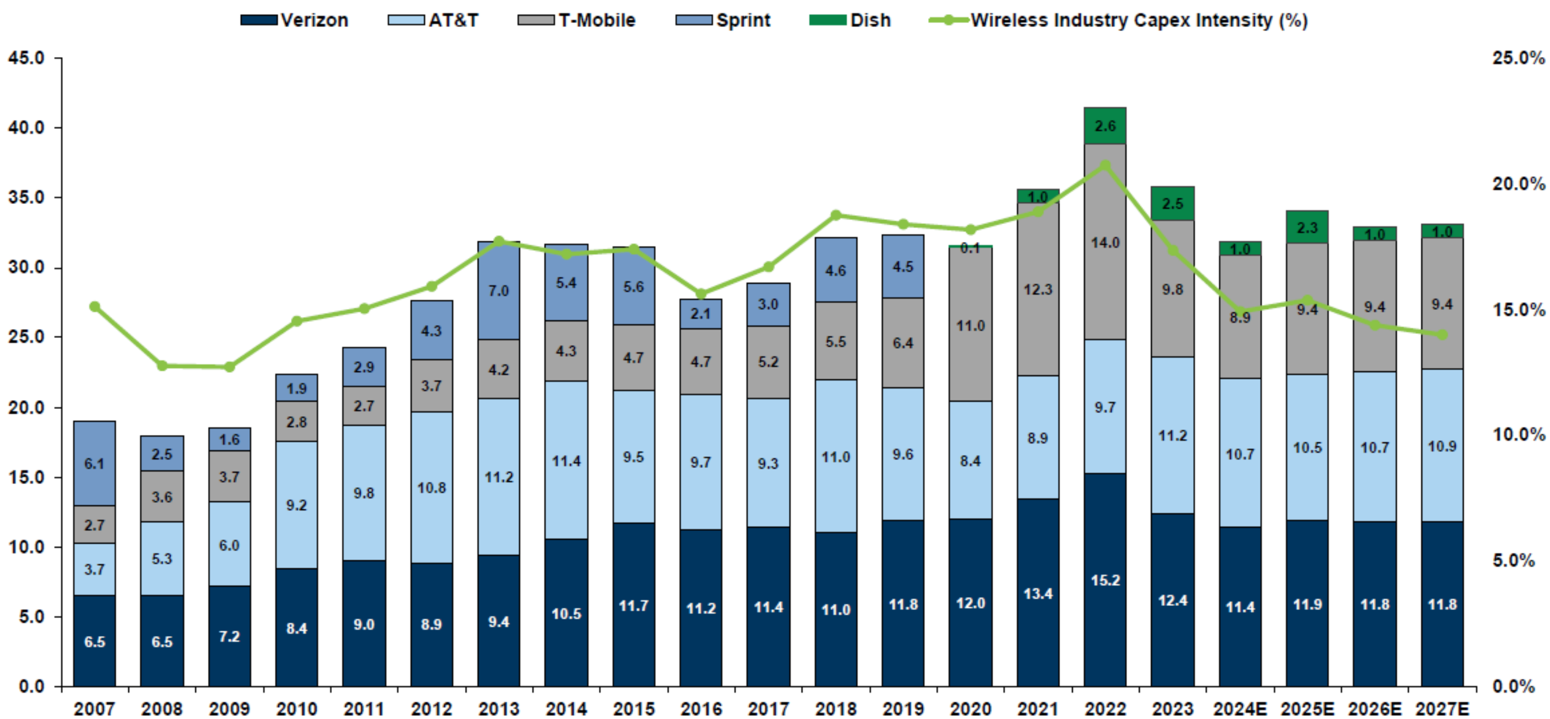
V. Q & A

I. Introductions / Kick-Off

II. Wireless Network Perspectives

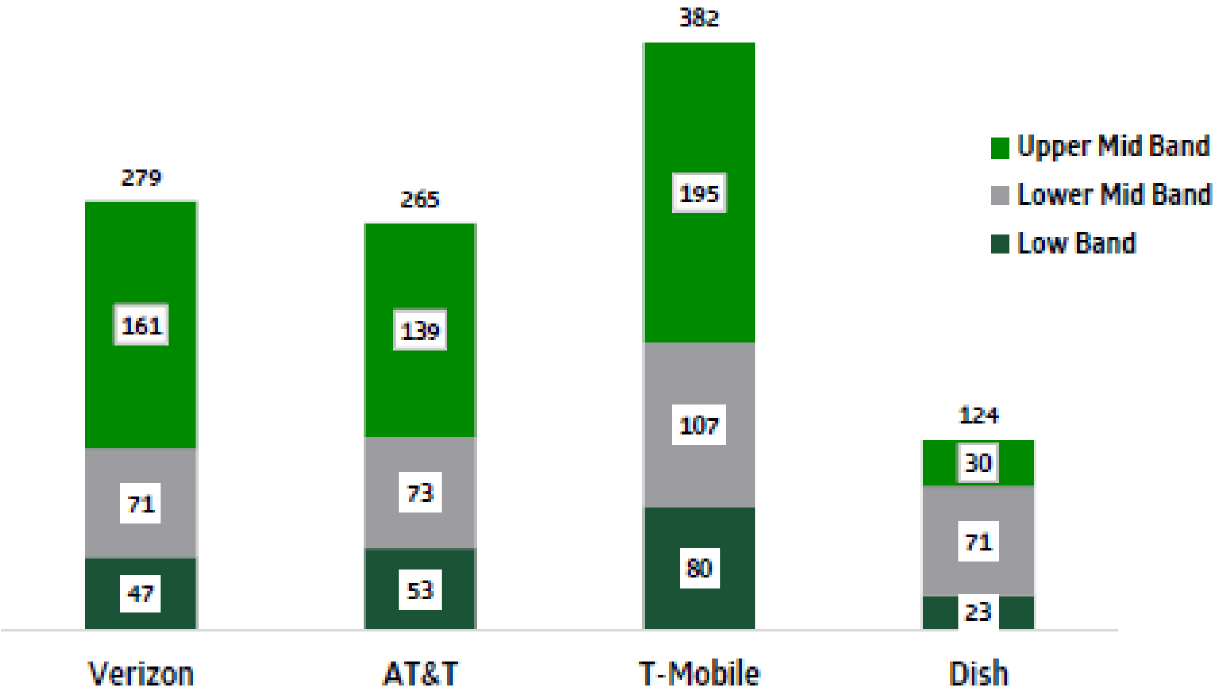
Wireless CapEx Trends & Intensity (% of Revs)

CapEx expressed in billions of dollars



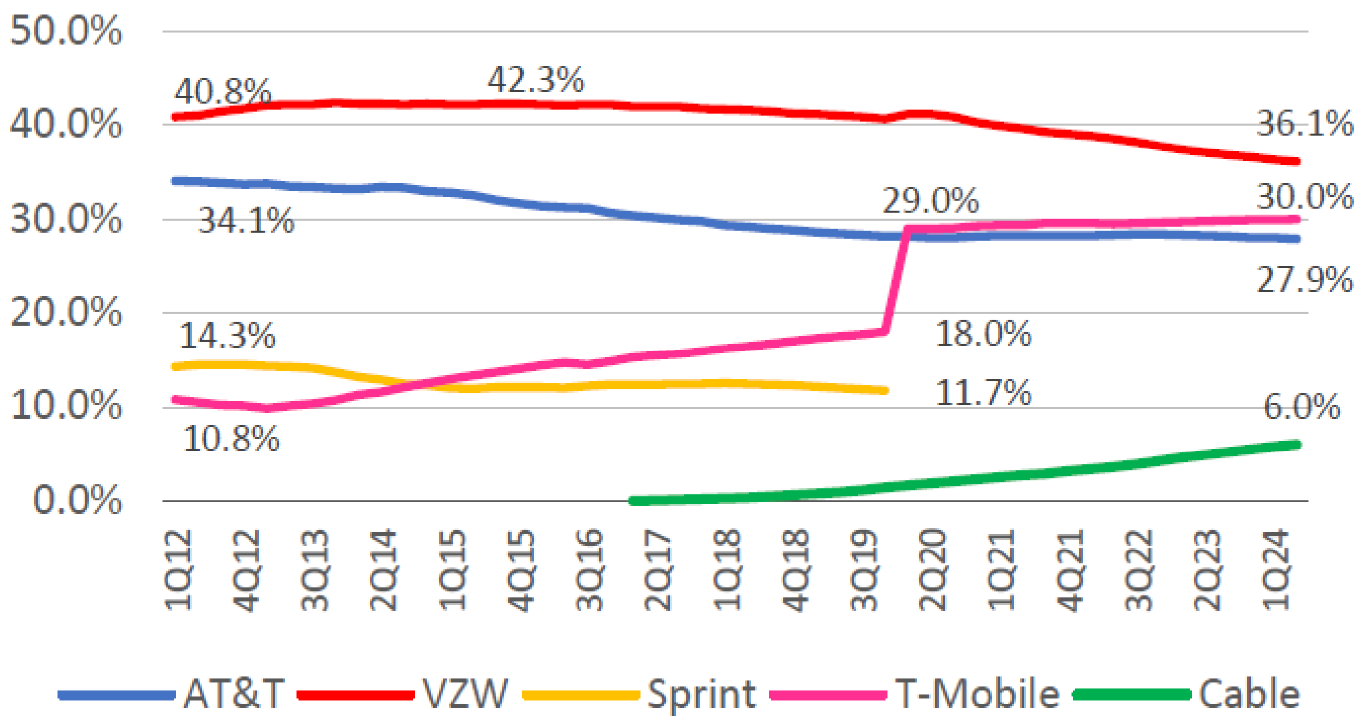
Source: Company data, Goldman Sachs Global Investment Research

Avg Spectrum: sub-6GHz (MHz-Pops/Mkt)



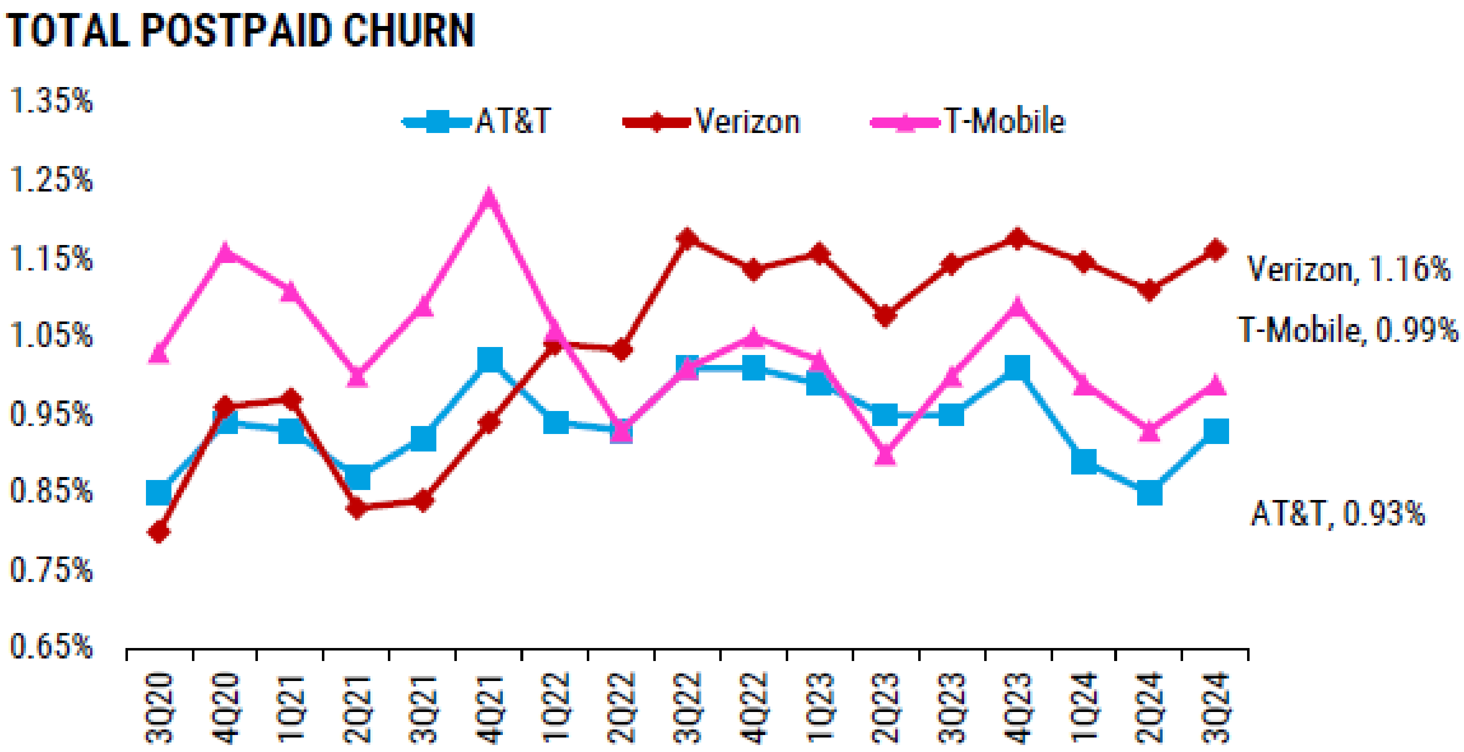
Source: FCC Data, TD Cowen estimates

Share of Wireless Market Last 12 years



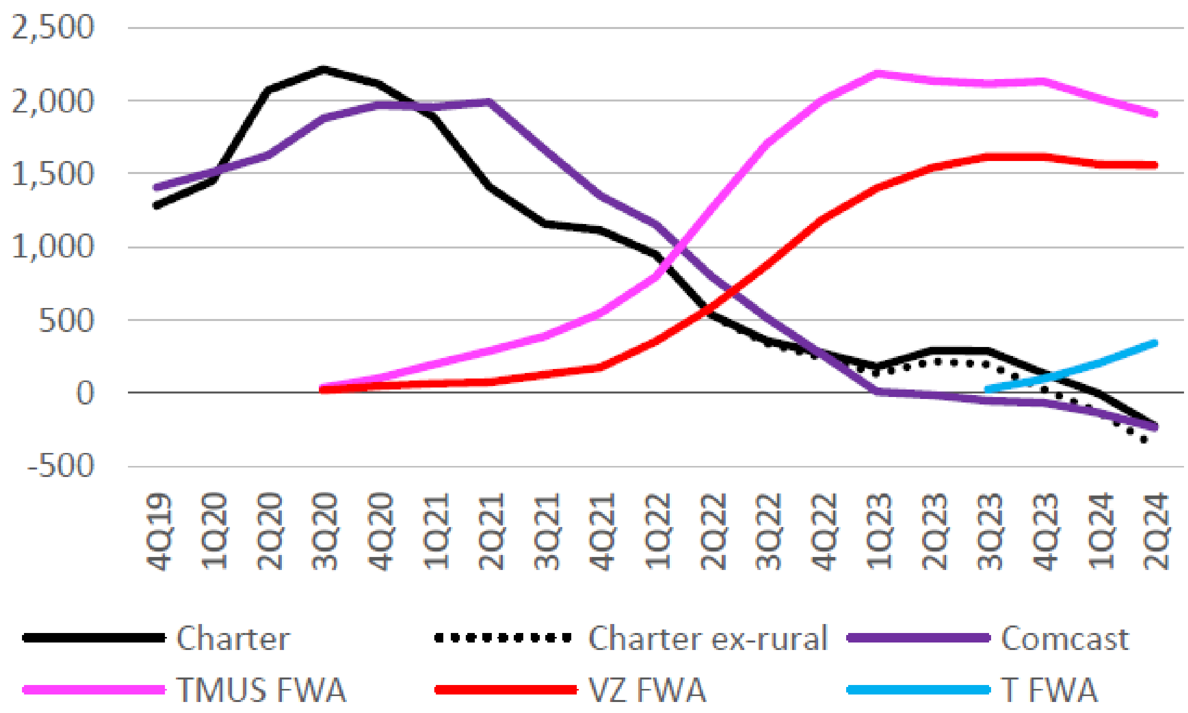
Source: Arete Research estimates, based on company data.

Wireless – Total Postpaid Churn - Healthy



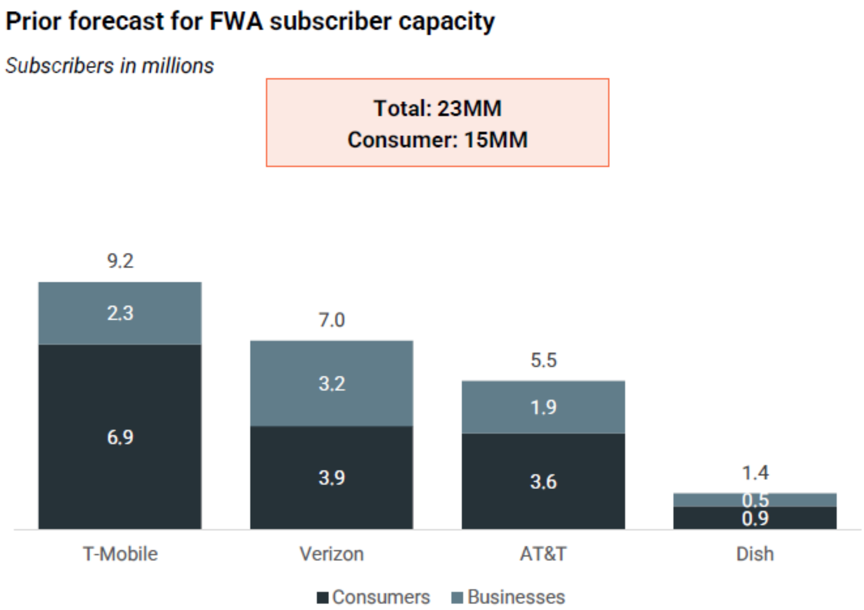
Source: Company data, Morgan Stanley Research

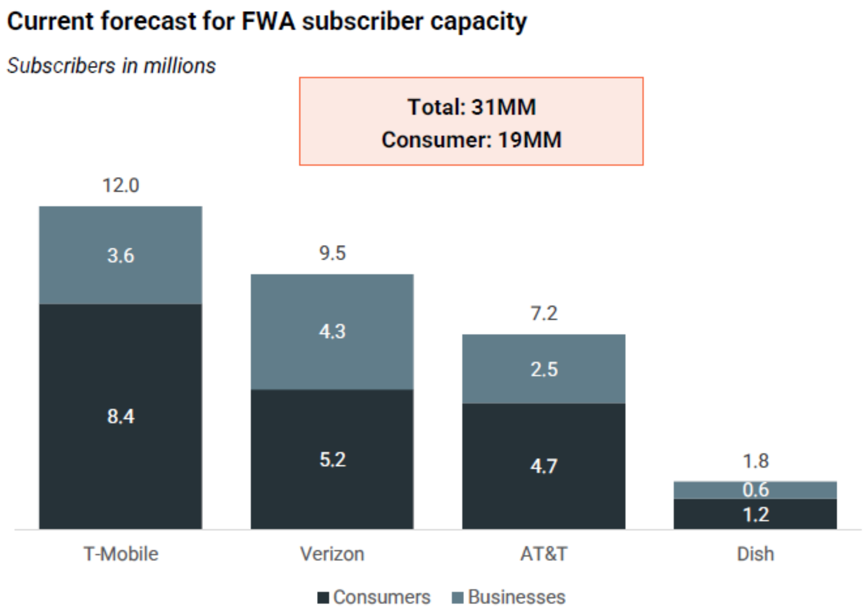
FWA: Eating Cable Broadband (LTM net adds 000)



Source: Arete Research estimates, company for overall broadband net adds.

FWA – Changing Forecasts as Tech Changes





Convergence: Wireline going Wireless

T/TMUS/VZ Headed Down the Path: AT&T mentioned convergence 26 times on its last two earnings calls. Verizon validating the strategy with the Frontier acquisition. T-Mobile less committed but expects 12-15MM homes and has $20B of M&A dry powder if necessary.

Wireline to Wireless > Wireless to Wireline: Going wireless is easier given MVNO wholesale deals, however lacks future-proofed long-term owner's economics. Going wireline will force players such as T-Mobile to buy, build, and/or find a way to push free-market open access.

Race to the Bottom: Convergence will likely be destructive for both industries since players will be forced to fight with each other, sacrificing the other side (for example as Cable sacrifices wireless at $30/line).

Follow the Leader: AT&T is pushing convergence; thus the other carriers must reluctantly follow as the carrier that moves fastest wins. Expect fiber roll-ups to commence. If convergence benefits materialize, this could be a risk for T-Mobile; but won't know the answer for some time.

Best Positioned:

AT&T Charter COMCAST

Cable can leverage MVNOs and will sacrifice wireless margins
AT&T has ~28MM fiber passings; sees opportunity for 10-15MM more

Catching Up:

verizon + FRONTIER

Verizon has ~18MM fiber locations and is playing catch up by acquiring Frontier for an additional 10MM fiber passings by 2026

Most Challenged:

T Mobile

T-Mobile has >70MM postpaid phones so will need to build (costly), **buy** (costly), or push for more widespread adoption of open access

T-Mobile Potential Targets
Who's in Play?

III. Broadband Network Perspectives

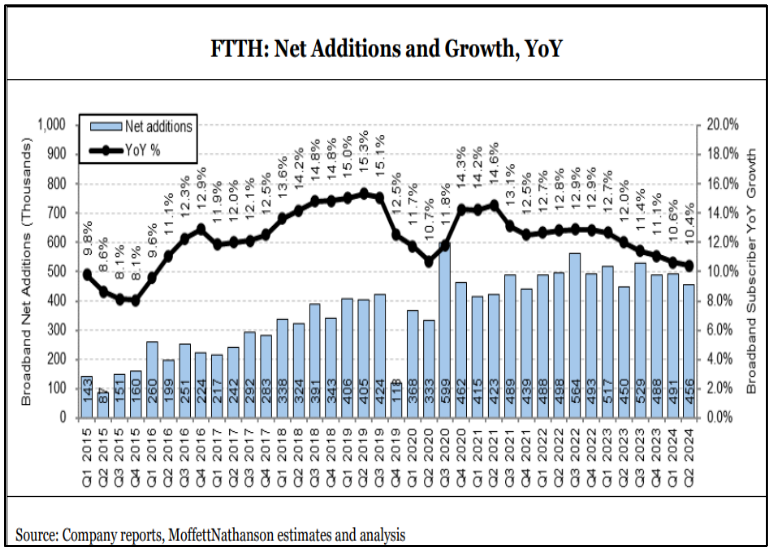
Broadband Subscribers - 2020-2030E by Provider Type

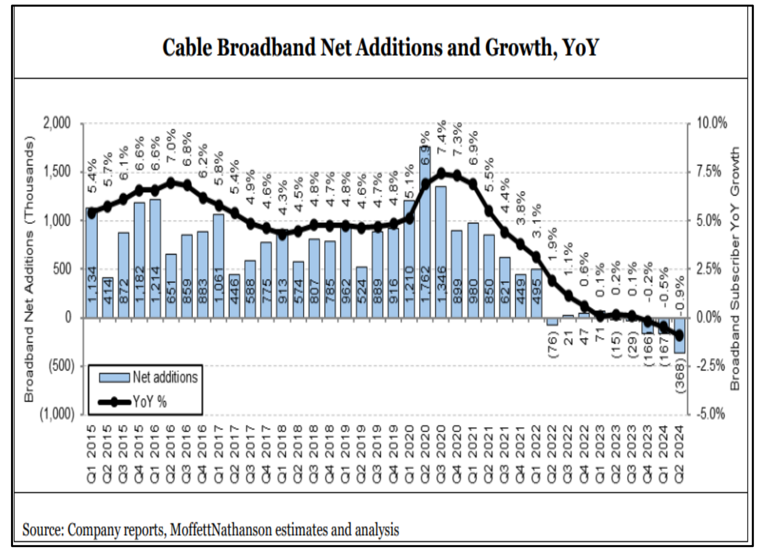
	2020	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Total Broadband Subscribers											
Major Cable	69,318	71,913	72,326	72,281	70,919	70,169	69,569	69,044	68,569	68,094	67,619
% Y/Y Change	*7.3%*	*3.7%*	*0.6%*	*(0.1%)*	*(1.9%)*	*(1.1%)*	*(0.9%)*	*(0.8%)*	*(0.7%)*	*(0.7%)*	*(0.7%)*
Telco & Other	27,123	27,299	27,142	26,986	26,684	26,729	27,019	27,559	28,349	29,219	30,264
% Y/Y Change	*(2.2%)*	*0.6%*	*(0.6%)*	*(0.6%)*	*(1.1%)*	*0.2%*	*1.1%*	*2.0%*	*2.9%*	*3.1%*	*3.6%*
Fixed Wireless	2,903	3,989	7,608	11,778	15,833	19,779	23,312	26,359	29,011	31,367	33,328
% Y/Y Change	*21.7%*	*37.4%*	*90.7%*	*54.8%*	*34.4%*	*24.9%*	*17.9%*	*13.1%*	*10.1%*	*8.1%*	*6.3%*
Total Broadband Subscribers	**99,344**	**103,201**	**107,076**	**111,045**	**113,436**	**116,676**	**119,900**	**122,962**	**125,928**	**128,679**	**131,210**
% Y/Y Change	*4.9%*	*3.9%*	*3.8%*	*3.7%*	*2.2%*	*2.9%*	*2.8%*	*2.6%*	*2.4%*	*2.2%*	*2.0%*
Total US Households and Small Businesses	**138,640**	**139,667**	**140,694**	**141,722**	**142,749**	**143,819**	**144,889**	**145,959**	**147,029**	**148,099**	**149,169**
Broadband Penetration	**71.7%**	**73.9%**	**76.1%**	**78.4%**	**79.5%**	**81.1%**	**82.8%**	**84.2%**	**85.6%**	**86.9%**	**88.0%**
Market Share											
Major Cable	**69.8%**	**69.7%**	**67.5%**	**65.1%**	**62.5%**	**60.1%**	**58.0%**	**56.2%**	**54.5%**	**52.9%**	**51.5%**
Telco & Other	**27.3%**	**26.5%**	**25.3%**	**24.3%**	**23.5%**	**22.9%**	**22.5%**	**22.4%**	**22.5%**	**22.7%**	**23.1%**
Fixed Wireless	**2.9%**	**3.9%**	**7.1%**	**10.6%**	**14.0%**	**17.0%**	**19.4%**	**21.4%**	**23.0%**	**24.4%**	**25.4%**
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Cable still dominant, but…..

Source: Fiber and Broadband Deep Dive: Street Underestimates Telco Builds and Growth, Oppenheimer, October 9, 2024

Fiber (FTTH) vs. Cable Adds





Telcos are making some gains with FTTH!

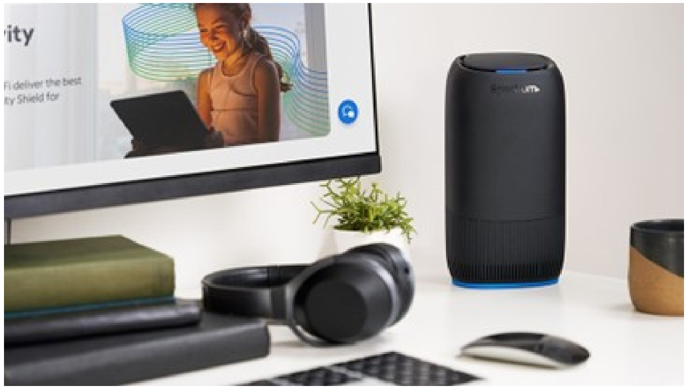
Source: U.S. Broadband: Parsing Underlying Growth/Loss Trends, MoffettNathanson, October 9, 2024

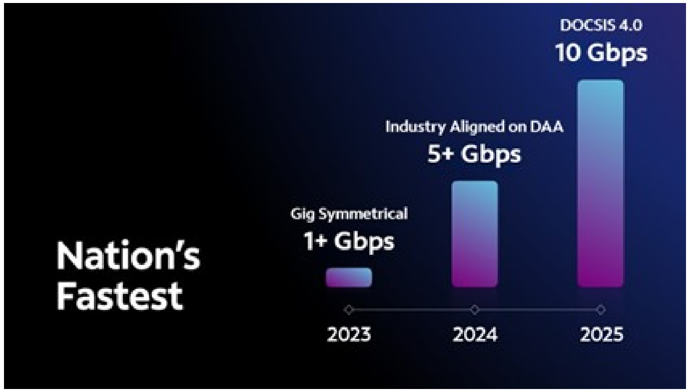
Spectrum

Network Expansion

- Expanding services into unserved and underserved communities in footprint, significantly transforming lives, and creating business opportunities with our high-speed broadband connectivity
- Added 1.2 million passings of homes and small businesses, including 400k subsidized rural passings
- All RDOF construction is anticipated to be completed by 2026 – two years ahead of schedule

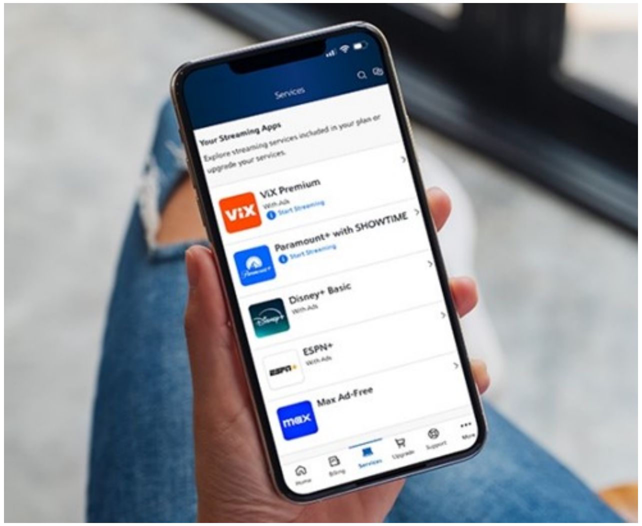
Network Evolution





- Completed phase 1, covering ~15% of our footprint using traditional DOCSIS 3.1 high split that will enable 2 gigabit down and 1 gigabit up
- For the next 50% of the footprint, we started with distributed access architecture (DAA), which allows up to 5 gigabit down and 1 gigabit up
- The final piece for the remaining 35% will be DOCSIS 4.0, which allows up to 10 gigabit down by 1 gigabit

Spectrum



Programming Evolution

- Using the Disney programming agreement model, ad-supported versions of ViX, Paramount+, Disney+, ESPN+, MAX and Tennis Channel Plus launched in 2024
- AMC+, BET+, Discovery+, and Peacock Premium to launch in 2025
- This allows for Seamless Entertainment by combining programmers’ traditional video and streaming services, with Spectrum TV Select, customers will receive up to $80 per month in streaming apps at no extra cost

AT&T

The Changing Landscape for Telcos

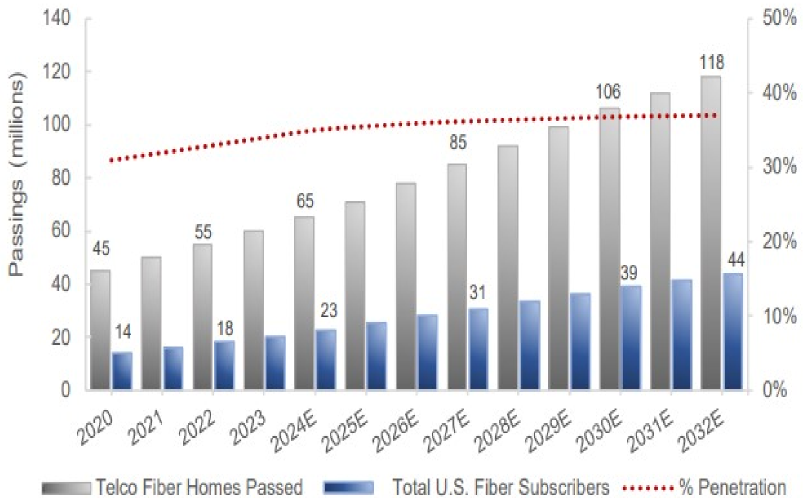
…with the change in the landscape

…with the advancements in technology

FTTp/Fiber is at a point in its evolutionary path that it is the logical choice for a wireline replacement network

- Lower capex
- Superior functionality
- Lower operating cost
- Greater income potential
- Competitive response

Fiber Builds in the US Continue to Ramp Up



Source: Oppenheimer & Co. Inc.

- Approximately 65M homes built out with fiber, up from 45M four years ago
- Estimate 100M in by 2030 (~7M/year).
- Equates to roughly 45% of the US is currently served with fiber with a 34% penetration
- Current build-out & penetration trends suggest ~65% of homes and businesses will be passed with fiber by 2030 (~40% penetration rate)

Source: Fiber and Broadband Deep Dive: Street Underestimates Telco Builds and Growth, Oppenheimer, October 9, 2024

Largest Fiber Providers (Passings & Subscribers)

(millions)

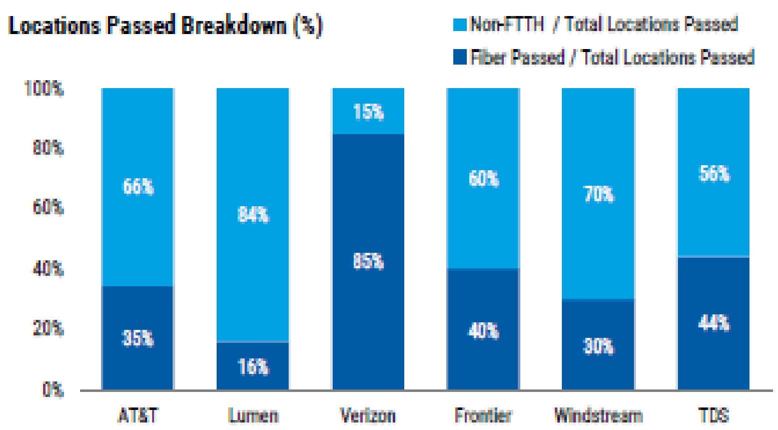
Estimated Fiber Passings	2023	2024E
AT&T	26.0	28.0
Frontier	6.5	8.0
Lumen	3.8	4.3
Verizon	18.0	18.5
Other	5.0	6.0
Total	**59.3**	**64.8**
New Builds		*5.5*
Fiber Subscribers		
AT&T	8.3	9.3
Frontier	1.7	2.2
Lumen	0.9	1.0
Verizon	7.4	7.6
Other	2.0	2.5
Total	**20.3**	**22.6**
Average Penetration	*34.2%*	*34.9%*

AT&T:

- Has expanded fiber locations by **11M** since 2020
- Doubled the number of fibers subscribers since 2020
- Passed **29M** locations as of the end of 2024
- Expect to pass **50M+** fiber locations by 2029
  - **~45M** AT&T owned locations
  - **~5M** served through GigaPower &

Source: Fiber and Broadband Deep Dive: Street Underestimates Telco Builds and Growth, Oppenheimer, October 9, 2024

AT&T Fiber (Over)Build Plan – Duplicate Network



Source: Company data, Morgan Stanley Research
Notes: TDS Includes ILEC Incumbent and Expansion, excludes CLEC; Fiber locations passed and subscribers reflect consumer only

Overbuild of copper network continues

- ***84%*** *of Fiber build dating back to 2016 is overbuild.*
- ***Only 35%*** *of AT&T served locations have been passed by Fiber.*
- *AT&T is required to operate and maintain the copper network due to* ***regulatory constraints*** */until customers are migrated to the fiber network.*
- *Results in* ***duplicative networks*** */ additional obsolescence*
- *Incur additional costs to operate both networks (****$6B annually****)*

Source: *Telecom Services & Comm Infrastructure: 5Questions – Question #2: Who Is Winning in Broadband?,* Simon Flannery, Morgan Stanley, January 16, 2024

AT&T is trying to exit the Legacy Copper-Based Services by 2029 as it transitions to Fiber, but ....

For over 100 years, the state, the C.P.U.C. and the federal government have promoted the idea that communities need reliable communication," said Regina Costa of The Utility Reform Network, an Oakland-based consumer group. "AT&T is saying, 'We don't want to do that anymore, so goodbye, good luck and good riddance.'"

Source: California Utility Reform Network ("TURN")

CPUC Rejects ATT Request to Withdraw as Carrier

CONSUMER

Hundreds speak out at CPUC hearing on AT&T plan to ditch landlines

CBS NEWS BAY AREA

Updated on: March 20, 2024 / 11:31 AM PDT / CBS/Bay City News Service

AT&T seeks to shut down landline service for most of the Bay Area, much of California

Landlines serve no 'valid public purpose,' AT&T says

IV. Panel Discussion - Tax & Valuation Implications

V. Q & A?