



**NewStreet**  
Research

# NSR Rapid Broadband Due Diligence Analysis

## Product Presentation

October 2024



## Product Overview

## NewStreet Analytics



New Street recently launched a Data Analytics platform, featuring two key subscription products: Broadband Insights and SpectrumHub. **Broadband Insights** is a broadband infrastructure database including detailed footprint, competitive dynamics and BEAD analysis for US fixed broadband providers. **SpectrumHub** is a global spectrum database including mobile spectrum holdings, pricing, license renewals and valuations by band, carrier and market.



NewStreet Analytics is an interactive platform providing insights into the critical questions faced by the Broadband and Mobile industries. It initially includes two products, Broadband Insights and SpectrumHub. Our focus is on assembling unique datasets, analyzing them, and continuously improving while adding new data to the platform.

You may demo both products via the [Broadband Insights Trial](#) and [SpectrumHub Trial](#).

To request full access to our platform, please email [Jose Angujs](mailto:Jose.Angujs).

 DATA ANALYTICS

### Broadband Insights

A broadband infrastructure database including detailed footprint, competitive dynamics and BEAD details for US providers.

[Launch Dashboard](#)

 DATA ANALYTICS

### SpectrumHub

A global database including mobile spectrum holdings, pricing, license renewals and valuations by band, carrier and market.

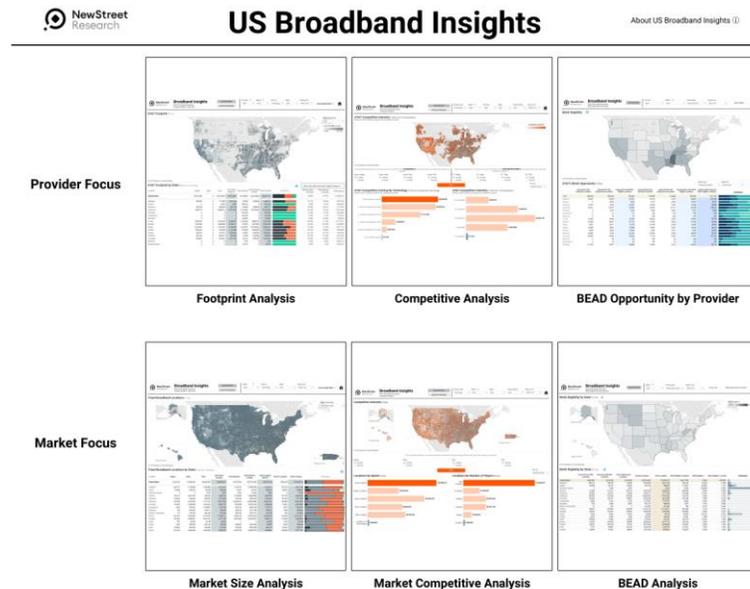
[Launch Dashboard](#)

## Broadband Insights

Broadband Insights is a broadband infrastructure database that provides detailed information on provider footprints, competitive dynamics, and market and demographic insights for over 2,000 ISPs or any U.S. market. Access to Broadband Insights is available in two formats.

### Access to Visual Database (Tableau-Based Platform)

- **Accessible in both the Basic and Enterprise commercial plans**, this platform visualizes data for the top 25 fixed broadband providers that account for 90% of the U.S. market at the national, state and county level.
- Includes market-focused views, with details on market size, providers and demographic details in those markets; and provider-focused views, which feature provider footprint, competitive landscape and BEAD opportunity analyses.



### Access to Full Database (Retool-Based Platform)

- **Available exclusively for Enterprise plan subscribers**, this platform provides all underlying details through preconfigured dynamic tables, allowing for greater details (e.g., more ISPs, more technologies, etc.), greater analyses (e.g., fair share), and greater granularity and aggregation options (e.g., census block level).
- This set of preconfigured tables are available in a graphic interface created using a software called Retool, which allow users to pull and download data from the database easily w/o any knowledge of data analytical skills.



## Rapid Outside-In Broadband Due Diligence: Definition

Building on the capabilities of our comprehensive database, we have also developed Rapid Outside-In Due Diligence analysis. This analysis provides a swift and cost-effective solution for assessing the attractiveness of any fixed broadband provider or specific market in the U.S. The analysis can be conducted for any of the ~2000 ISPs or U.S. markets within our database. This analysis is available for Enterprise plan subscribers only.

1

### Due Diligence

*because*

**Provides comprehensive assessment of various factors related to a broadband company or its operational market**

- Market analysis
- Demographics
- Provider footprint
- Competitive analysis
- Estimated subscribers and penetration
- Expansion assessment

2

### Outside-In

*because*

**Utilizes publicly available information vs. traditional inside-out commercial due diligences that rely on internal company data**

- Broader perspective without needing proprietary information
- Eliminates the requirement to sign a Letter of Intent (LOI) with Target Co.

3

### Rapid

*because*

**Can be conducted in just 2-4 days vs. ~2-4 weeks of traditional due diligences**

- Immediate access to pre-configured templates and analytical models
- Possibility of adding decks and custom analytical reports

4

### Cost Effective

*because*

**Is included in our Broadband Insights Enterprise plan for \$30K per year vs. traditional due diligence that typically ranges from \$300K to \$1M.**

- Can be sold as a one-off analysis if preferred
- Can be linked to a consulting special project if required

## Rapid Outside-In Broadband Due Diligence: Deliverable Options

We offer a range of deliverable formats for our rapid outside-in due diligence analysis, including a comprehensive Excel model that provides detailed insights, a presentation deck for high-level overviews, access to raw data tables in our database for in-depth exploration, and custom analytical reports tailored to specific client needs.

1

### Access to Raw Data

Clients can be provided access to the underlying raw data tables from our Broadband Insights database.

This allows for deeper analysis and the ability to manipulate the data according to specific analytical needs.

The data can be delivered in formats such as CSV or Excel, depending on client preference, and the data includes all the underlying details used to create the analysis.

2

### Excel Model

A comprehensive Excel model with multiple tabs that focus on the key analyses. It features dynamic calculations based on raw data inputs.

This deliverable is ideal for stakeholders seeking a detailed, data-driven understanding and enables users to customize their analysis.

3

### Presentation Deck

A structured slide deck summarizing key findings and insights from the analysis.

This presentation provides an overview of the findings, and implications for business decisions and can be used for internal reviews or client meetings, highlighting essential metrics and visualizations.

**Option quoted separately from annual subscription.**

4

### Custom Reports

We can also develop any tailor-made analytical reports to address specific client objectives and questions.

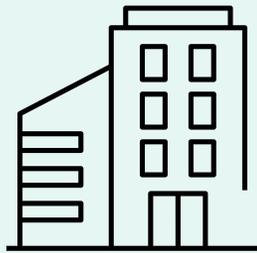
These reports can include visualizations in Tableau, tailor-made raw data tables or other developments.

**Option quoted separately from annual subscription.**

## Rapid Outside-In Broadband Due Diligence: Types of Analysis

We offer two types of analysis depending on the input: 1) Provider Focused and 2) Market Focused.

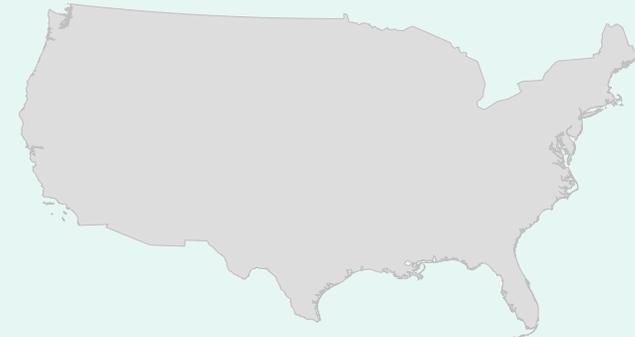
1



### Provider-Focused

Provides insights of an individual fixed broadband provider in the US given

2



### Market-Focused

Provides insights specifically tailored to a US market rather than to an individual provider

# 1 Provider-Focused Analysis

Available for ~2000 US ISPs, several technologies (copper, cable, fiber and licensed FWA by default) and several geographic granularities down to the census block level (county by default)

## Analyses Included

### Workstreams

#### Broadband Co.'s Existing Footprint Assessment

### Key Questions

- What's Broadband Co.'s **footprint**?
- What are key **demographic factors** of Broadband Co.'s existing markets?
- What is the level of **competition** Broadband Co.'s faces in each market?
- What is a reasonable **fair market share and penetration** for Broadband Co. given competition?
- What are **attractive markets for** Broadband Co. **expansion**?
- What are key **demographic factors** of Broadband Co.'s expansion markets?
- What is the level of **competition** Broadband Co.'s faces in expansion markets?
- What is a reasonable **fair market share and penetration** for Broadband Co. in expansion markets?

#### Broadband Co.'s Expansion Footprint Assessment

## 2 Market-Focused Analysis

Available for all US markets, several technologies (copper, cable, fiber and licensed FWA by default) and several geographic granularities down to the census block level (county by default)

### Analyses Included

#### Workstreams

##### Existing Market Assessment

#### Key Questions

- What's the **size** of the market?
- What are key **demographic factors** that characterize that market and how they compare to national average?
- What is the level of **competition** in that market?
- What is the **estimated market share and penetration** for each player in that market?
- What locations are likely to be upgraded with better technologies?
- What is the **estimated market share and penetration** for each player after the upgrades and deployments announced?

##### Expansion Market Assessment

## Key Demographic Factors

### Key Factors

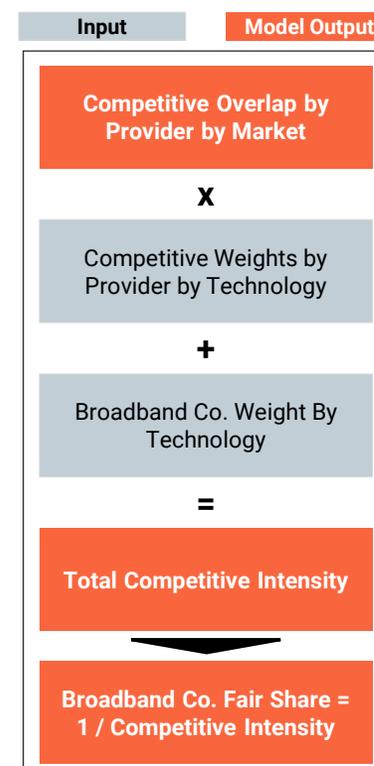
Metrics	Impact	Source
<b>Age</b>	Younger populations are more likely to subscribe to broadband services than older ones	US Census Bureau
<b>Income</b>	Deployments should ideally focus on higher income areas to reach the desired high ARPU and low churn levels	US Census Bureau
<b>Education</b>	Deployments should focus on more highly educated areas to increase likelihood of higher penetration and ARPU, and lower churn levels	US Census Bureau
<b>Population</b>	Used for people per household calculations	US Census Bureau
<b>Occupied HU</b>	Total occupied homes should reflect the housing units that would be consistently signed up for broadband service	US Census Bureau
<b>People per Household</b>	Households with more people are more likely to subscribe to internet	NSR Analysis
<b>HU Density (HU/Sqm)</b>	Deployment economics improve as the household density increases, making it one of the determining factors for a fiber rollout	US Census Bureau
<b>Fiber Road Miles</b>	Combined secondary and local road miles across each CB, excluded primary road miles	DoT; NSR Analysis
<b>HP Density (HP/Road Mile)</b>	Deployment economics improve as the homes passed density increases, making it one of the determining factors for a fiber rollout	NSR Analysis
<b>Broadband Penetration</b>	Adjust for non-Broadband households using market specific broadband penetration (current and forecast)	US Census Bureau

## Fair Share Methodology

The share of the in-play opportunity Broadband Co. could capture is driven by the overlap and the strength of competitors. Competitive weighting can be adjusted to your preferences.

### Fair Share Calculation

Provider Technology	Competitive Weight	Speed
Fixed Wireless	0.10 - 0.25	<ul style="list-style-type: none"> <li>No speed distinction</li> <li>If FWA is present, we reserve a 10% of the market for all FWA providers</li> <li>If broadband availability is less than the national average in that market (unserved/underserved areas), we get an additional 15% for them?</li> </ul>
Slow DSL (Copper)	0.05	<ul style="list-style-type: none"> <li>Speeds &lt;50Mbps</li> </ul>
Fast DSL (Copper)	0.10	<ul style="list-style-type: none"> <li>Speeds &gt;=50 Mbps but &lt;100 Mbps</li> </ul>
Slow Cable (DOCSIS 1.0-2.0)	0.5	<ul style="list-style-type: none"> <li>Speed &lt;250 Mbps</li> </ul>
Fast Cable (DOCSIS 3.0-3.1)	1	<ul style="list-style-type: none"> <li>Speed &gt;=250 Mbps but &lt;1000 Mbps</li> </ul>
FTTH (Fiber)	1	<ul style="list-style-type: none"> <li>Speed &gt;= 1 Gbps</li> </ul>



**Example:**  
 Players present in one location  
 - Broadband Co: Fiber  
 - 1 competitor: fast Cable  
 - 1 competitor: fast DSL

Broadband Co. Fair Share = 100% / (100% + 100% + 10%) = 48%

Calculated for each location and aggregated at the census block level

# Existing vs. Expansion Assessment Framework

	Existing	Expansion						
		Upgrades	Planned	Edge-Out Near	Edge-Out Far	BEAD On-Net	BEAD Near-Net	BEAD Far-Net
<b>Definition</b>	Existing provider footprint as is	Existing locations with copper or old cable technologies converted to fiber or new cable technologies	Expansion to markets announced (states, counties, cities)	Locations out of footprint but within the <b>same CB</b> where they already have presence	Locations out of footprint but within the <b>same county</b> where they already have presence	BEAD-eligible locations within footprint not considered in Upgrades	BEAD-eligible locations out of footprint but within the <b>same CB</b> not considered in Edge-Out Near	BEAD-eligible locations out of footprint but within the <b>same county</b> not considered in Edge-Out Far
<b>Sources</b>	<ul style="list-style-type: none"> <li>Broadband Insights</li> </ul>	<ul style="list-style-type: none"> <li>Broadband Insights</li> </ul>	<ul style="list-style-type: none"> <li>Press releases</li> <li>Company disclosures</li> </ul>	<ul style="list-style-type: none"> <li>Broadband Insights</li> </ul>	<ul style="list-style-type: none"> <li>Broadband Insights</li> </ul>	<ul style="list-style-type: none"> <li>Broadband Insights</li> </ul>	<ul style="list-style-type: none"> <li>Broadband Insights</li> </ul>	<ul style="list-style-type: none"> <li>Broadband Insights</li> </ul>
<b>Assumptions</b>		<ul style="list-style-type: none"> <li>Converted to fiber = copper decommissioned</li> <li>Decommissioning pace based on historicals</li> </ul>	<ul style="list-style-type: none"> <li>Cover the entire county (unless HPs specified)</li> <li>Pace needed to achieve goal in target year</li> </ul>	<ul style="list-style-type: none"> <li>Fill entirely the census block</li> <li>Historical deployment pace</li> </ul>	<ul style="list-style-type: none"> <li>Fill entirely the county</li> <li>Historical deployment pace</li> </ul>	<ul style="list-style-type: none"> <li>Participate in BEAD unless otherwise is stated</li> <li>Pace needed to deploy everything in 5 years</li> </ul>	<ul style="list-style-type: none"> <li>Participate in BEAD unless otherwise is stated</li> <li>Pace needed to deploy everything in 5 years</li> </ul>	<ul style="list-style-type: none"> <li>Participate in BEAD unless otherwise is stated</li> <li>Pace needed to deploy everything in 5 years</li> </ul>

## Data Sources

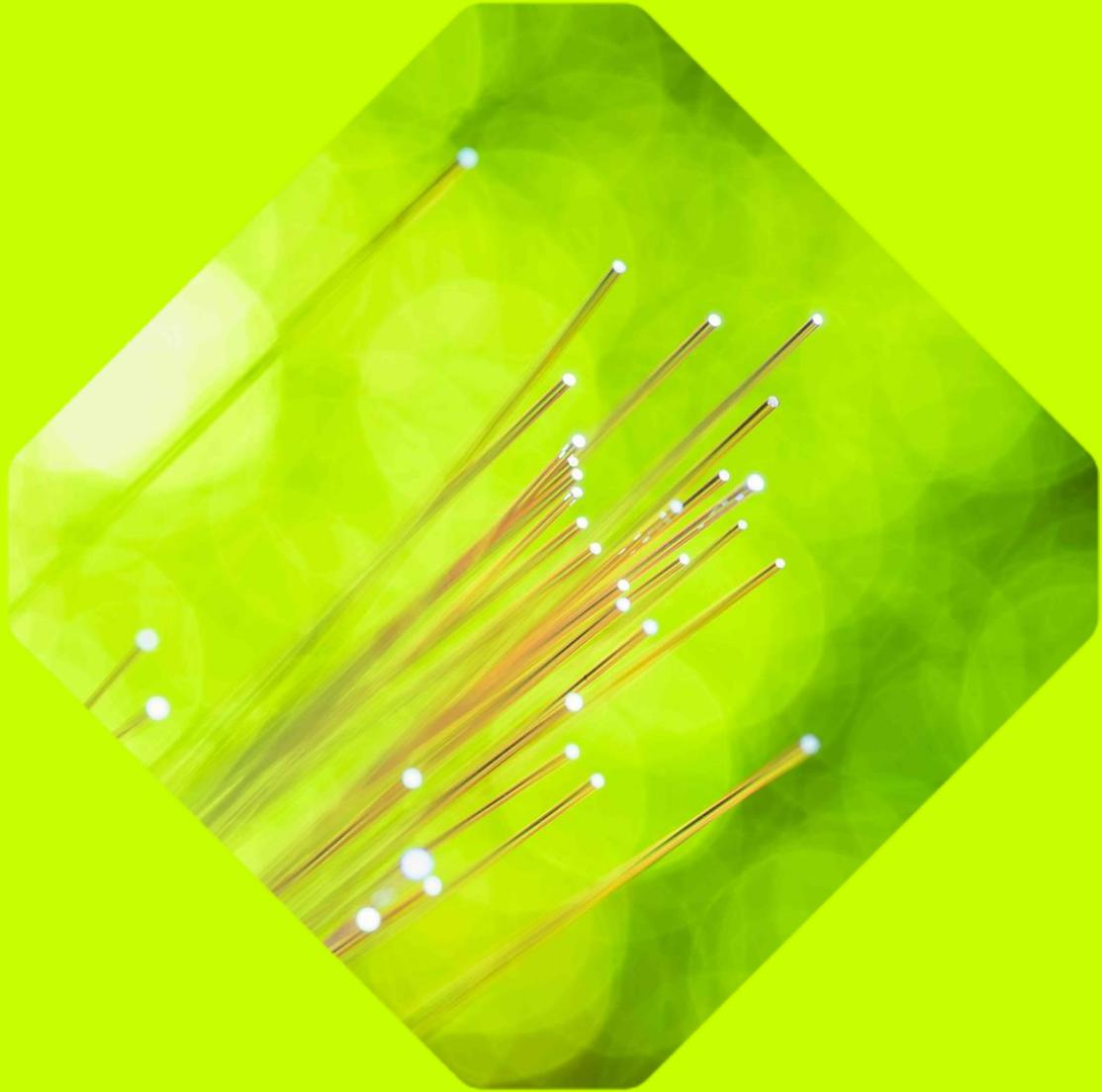
The methodology will blend primary and secondary market research and our own industry insights. All analyses conducted will be based on our comprehensive broadband infrastructure database data, which relies on the following sources.

### Data Sources

- 1. FCC National Broadband Map:** The main dataset used in this tool is sourced from the latest version available of the Federal Communications Commission (FCC) National Broadband Map, as of December 31, 2023, last updated on June 25, 2024. This map comprises two key datasets:
  - **The Fabric:** Developed by CostQuest, this dataset includes all locations in the United States and Territories where fixed broadband internet access service is or could be installed.
  - **Broadband Data Collection:** Internet Service Providers (ISPs) report their availability at the locations included in the Fabric to the FCC every 6 months. For every location, they must indicate where they offer mass-market Internet access service using their own broadband network facilities, including details on speed, latency and technology. ISPs must report where they offer broadband Internet service to fixed locations such as homes and small businesses on a location-by-location basis.
- 2. NSR knowledge base:** We also leveraged our own knowledge, information, analyses and company models gathered and developed during all our years of work in the telecommunications industry.
- 3. Companies' disclosures:** We utilized documents, reports and information that companies make publicly available to investors and regulatory authorities such as the Securities and Exchange Commission (SEC).
- 4. FCC Form 477:** We used FCC former data collection tool to gather information on fixed broadband deployment across the United States. We used this source to reconcile and triangulate companies' footprint reported in their filings with the FCC National Broadband Map.
- 5. US Census Bureau:** We used housing units data at the census block level from the U.S. Census Bureau to estimate the number of housing units per location, and for additional demographic information.
- 6. Other sources:** We compiled and analyzed data from other specialized industry research reports and public websites.

### Limitations

- **Generalization of Results:** The database is designed for broad, high-level analysis. Detailed, in-depth investigation into specific providers or markets may require more time and resources than this product is designed to offer.
- **Data Sources:** Based exclusively on publicly available information. The analysis does not include any proprietary or non-public data from the companies themselves, except for publicly disclosed information.
- **Latest Data:** The most recent data available is as of December 31, 2023.
- **Provider Coverage:** Limited to the 2,000+ ISPs in our database. Analysis cannot be conducted on providers outside of this list.
- **Geographic Granularity:** Standard analysis is available up to the county level. More granular data, up to the census block level, is only available on a case-by-case basis and may incur additional time and cost.
- **Retail Focus:** Though we can provide estimates for the number of business locations in a certain market, or the number of business locations covered by a particular provider, our fair market share and penetration analyses are retail-oriented only. We are unable to provide insights into the commercial opportunity.
- **Limited Customization:** While the analysis can be tailored to specific needs, the level of customization is restricted to the data and analytical capabilities available within the tool. Comprehensive due diligence services may require additional external resources.
- **Exclusion of Intangible Factors:** The analysis does not account for non-quantifiable factors such as management quality, corporate strategy, or potential regulatory changes.



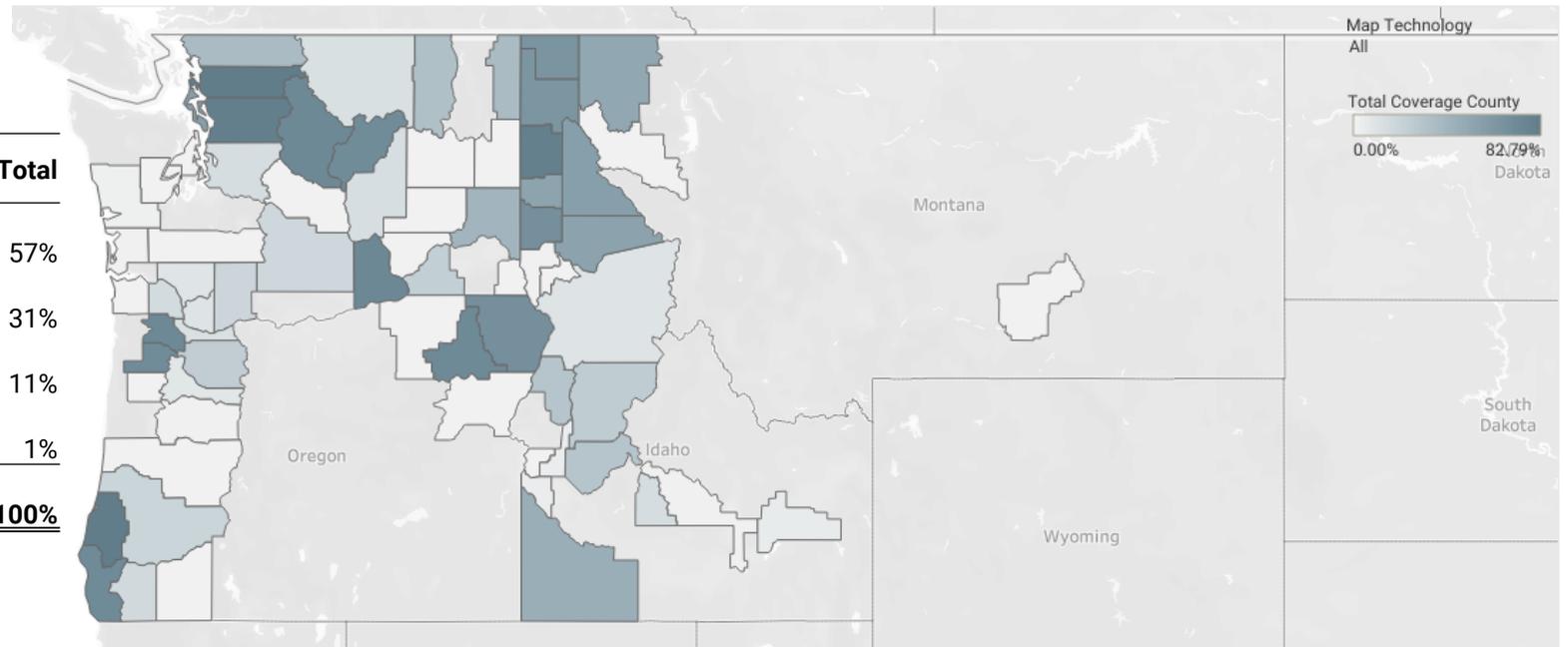
**Output Examples**

## Network Footprint Example

### Target Co. Network Footprint – Technology Details

Units (homes and business) passed as of December 31, 2023

States	Copper	Fiber	Total Unique Locations	% of Total
Washington	334,131	458,286	<b>792,417</b>	57%
Oregon	113,746	317,899	<b>431,645</b>	31%
Idaho	94,044	54,078	<b>148,122</b>	11%
Montana	4,141	3,092	<b>7,233</b>	1%
<b>Total</b>	<b>546,062</b>	<b>833,355</b>	<b>1,379,417</b>	<b>100%</b>



## Network Footprint Overview – Homes and Businesses

ZF provides residential and SMB service via copper and fiber to customers across 4 states

### Target Co. Network Footprint – Residential & SMB

States	Housing Units		Businesses Locations		Total Units			
	Copper	Fiber	Copper	Fiber	Copper	Fiber	Total Unique Locations	% of Total
Washington	283,447	408,884	50,687	49,400	334,131	458,286	792,417	57%
Oregon	91,913	283,397	21,832	34,498	113,746	317,899	431,645	31%
Idaho	75,692	45,936	18,351	8,141	94,044	54,078	148,122	11%
Montana	3,287	2,381	854	710	4,141	3,092	7,233	1%
<b>Total</b>	<b>454,339</b>	<b>740,598</b>	<b>91,724</b>	<b>92,749</b>	<b>546,062</b>	<b>833,355</b>	<b>1,379,417</b>	<b>100%</b>

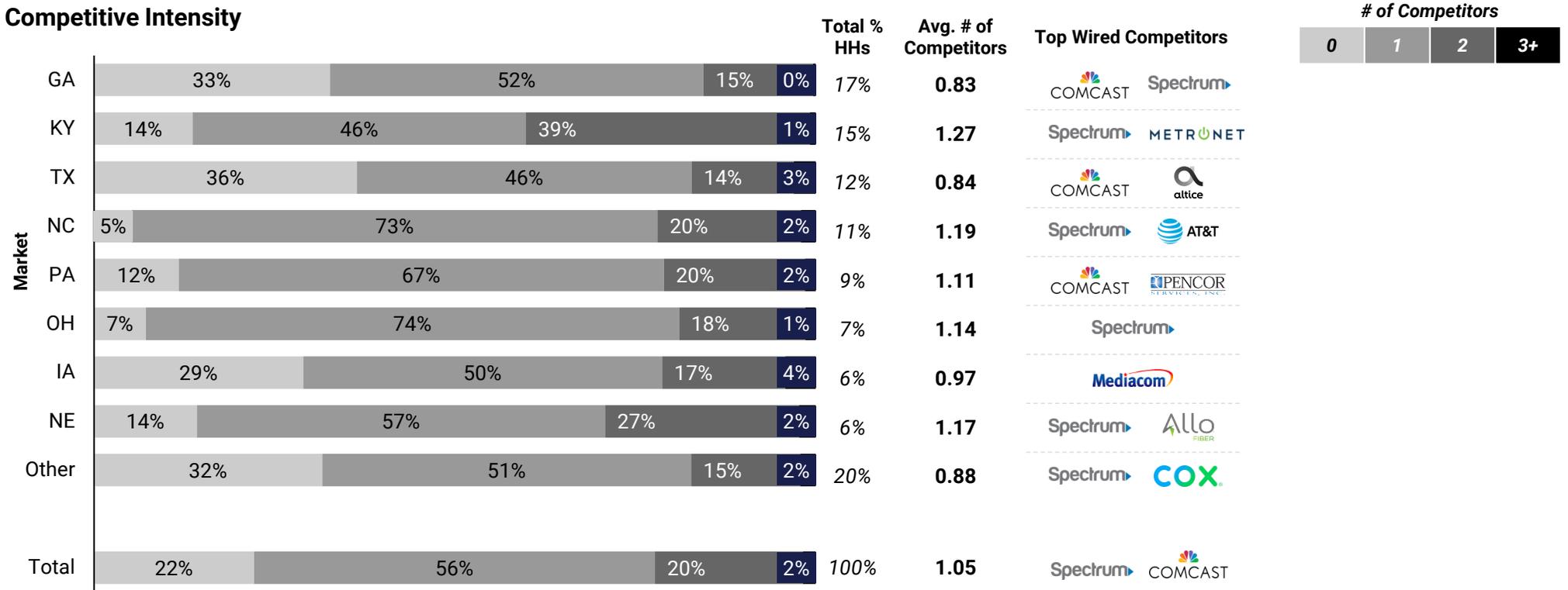
## Demographics Example

### Demographics by Market and Network

Market	Network	Housing Units	SMBs	Total Premises	Density (HU/ Sq. Mi)	Occupancy	% SMB	Unemploy.	Median HH Income (000s)	Median Home Value (000s)	Median Age	% Home Ownership	% College Education	Annual HU Growth Rate	Annual Business Growth	Annual Income Growth
<b>Mid-Atlantic</b> <i>(VA/TN)</i>	Existing	48K	9K	58K	27	88%	16%	6%	\$40K	\$117K	44	63%	19%	0.5%	0.4%	1.7%
	Expansion	293K	18K	310K	54	89%	6%	6%	\$45K	\$141K	41	62%	23%	0.8%	0.8%	1.1%
<b>Midwest</b> <i>(MI/OH)</i>	Existing	16K	2K	19K	40	96%	13%	4%	\$80K	\$178K	39	77%	37%	1.4%	2.0%	2.7%
	Expansion	118K	6K	124K	23	94%	5%	6%	\$49K	\$117K	41	65%	15%	0.3%	1.9%	3.0%
<b>Southeast</b> <i>(AL/GA)</i>	Existing	12K	1K	14K	142	92%	9%	6%	\$43K	\$134K	38	59%	24%	0.9%	2.3%	1.2%
	Expansion	30K	2K	32K	11	89%	7%	4%	\$45K	\$119K	43	67%	17%	1.1%	2.4%	0.7%
<b>Mid-Atlantic</b> <i>(MD)</i>	Existing	43K	5K	48K	204	92%	10%	6%	\$56K	\$191K	40	58%	22%	0.4%	-0.1%	-1.3%
<b>Northeast</b> <i>(NY)</i>	Existing	17K	1K	18K	13	92%	5%	4%	\$63K	\$137K	42	70%	27%	0.7%	-0.7%	3.9%
<b>National</b>	<b>All</b>	<b>135M</b>	<b>8M</b>	<b>143M</b>	<b>46</b>	<b>92%</b>	<b>6%</b>	<b>5.9%</b>	<b>\$68K</b>	<b>\$270K</b>	<b>41</b>	<b>61%</b>	<b>29%</b>	<b>0.8%</b>	<b>2.0%</b>	<b>3.6%</b>

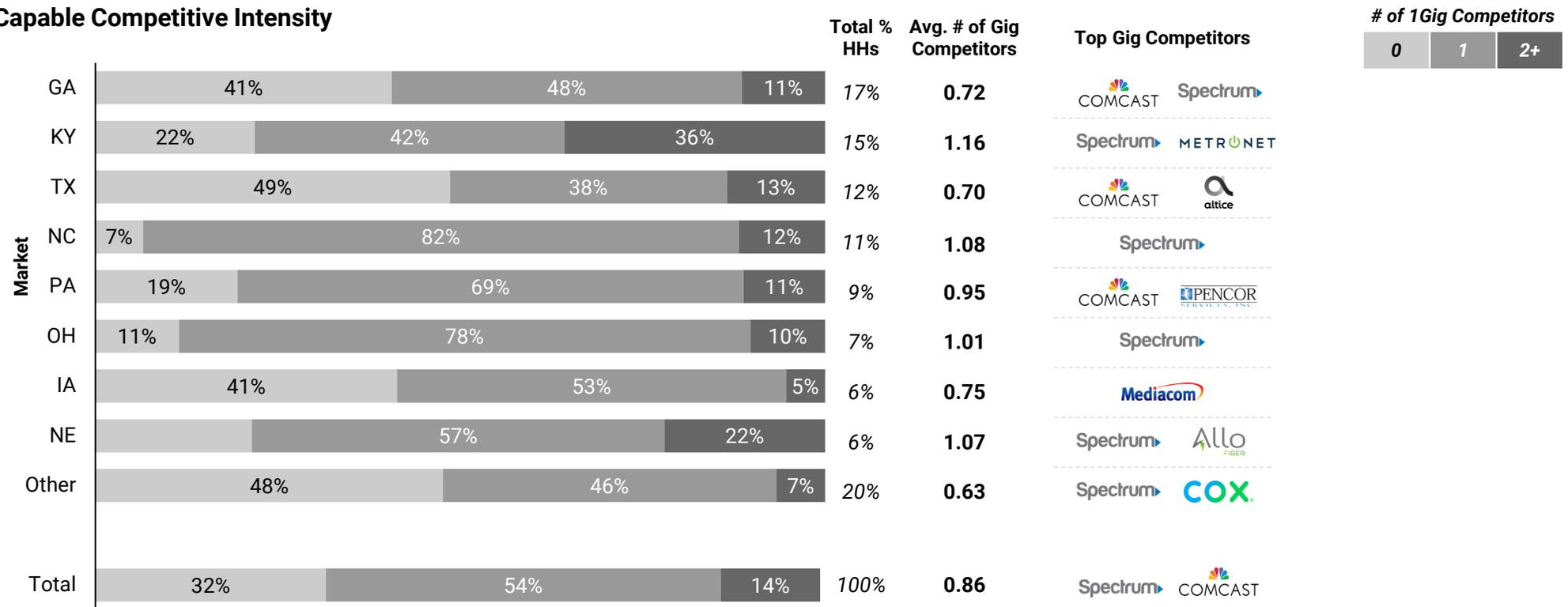
### Competitive Intensity Example

#### Target Co. Wireline Competitive Intensity



### Competitive Intensity by Speed Example

#### Target Co. Gigabit Capable Competitive Intensity



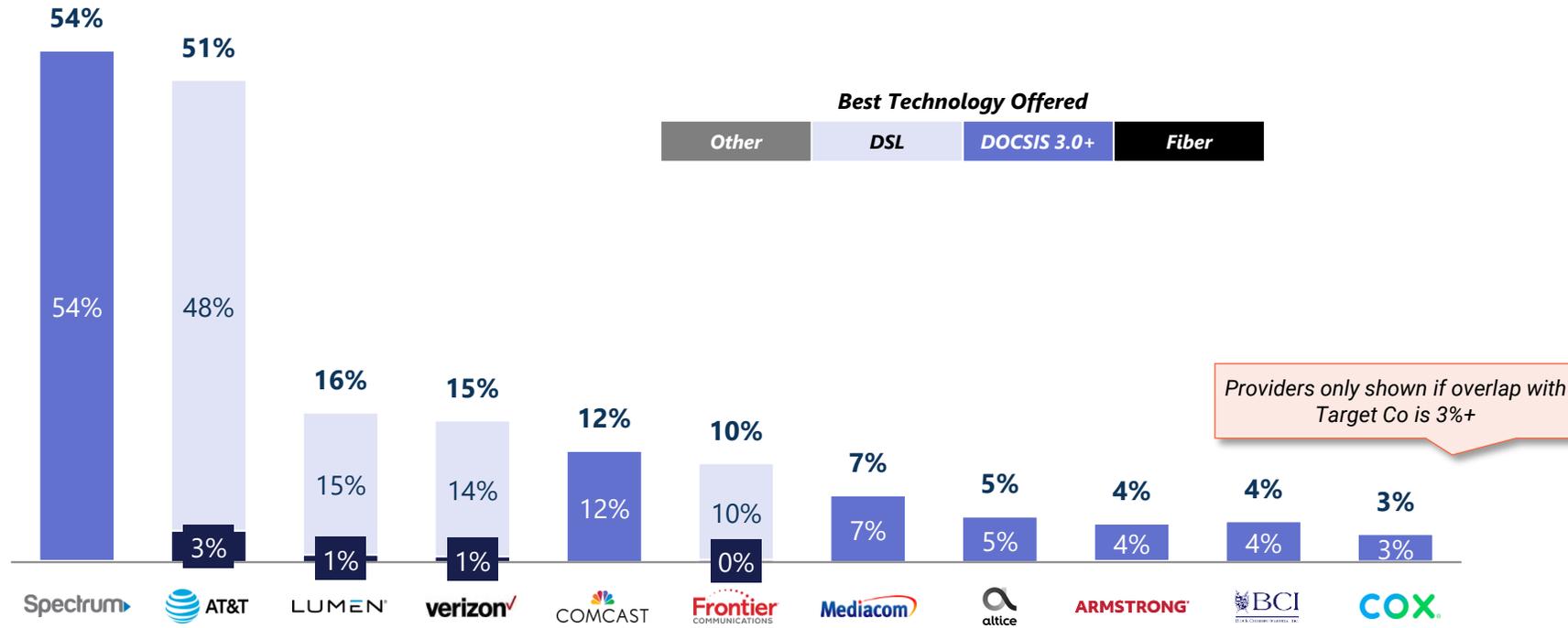
### Competitive Overlap by Provider Example



Target Co.	Top Competitors by Type	Overall Expansion	Overall Existing	Mid-Atlantic (VA/TN)		Midwest (MI/OH)		Southeast (AL/GA)		Mid-Atlantic (MD)	Northeast (NY)
				Existing	Expansion	Existing	Expansion	Existing	Expansion	Existing	Existing
ILECS	Verizon	32%	16%	27%	42%	0%	0%	0%	0%	99%	39%
	CenturyLink	31%	35%	55%	44%	3%	9%	1%	35%	3%	0%
	AT&T	16%	29%	3%	1%	69%	44%	91%	42%	0%	0%
Cable	Frontier Communications	9%	5%	0%	1%	24%	29%	0%	0%	0%	50%
	Charter Communications	29%	48%	29%	22%	84%	38%	90%	21%	0%	83%
	Comcast	29%	28%	46%	48%	0%	0%	0%	0%	4%	0%
	Antietam Broadband	6%	3%	6%	11%	0%	0%	0%	0%	0%	0%
Overbuilder	WOW!	1%	2%	0%	0%	0%	0%	13%	7%	0%	0%
Fixed Wireless	TDS	22%	9%	15%	26%	0%	0%	0%	0%	100%	0%
	All Points Broadband	10%	3%	6%	20%	0%	0%	0%	0%	0%	0%
Other Competitors		49%	30%	30%	52%	51%	62%	8%	12%	66%	40%
Total Unweighted Competitor Count		2.5	2.3	2.4	2.8	2.3	1.8	2.0	1.2	3.7	2.1

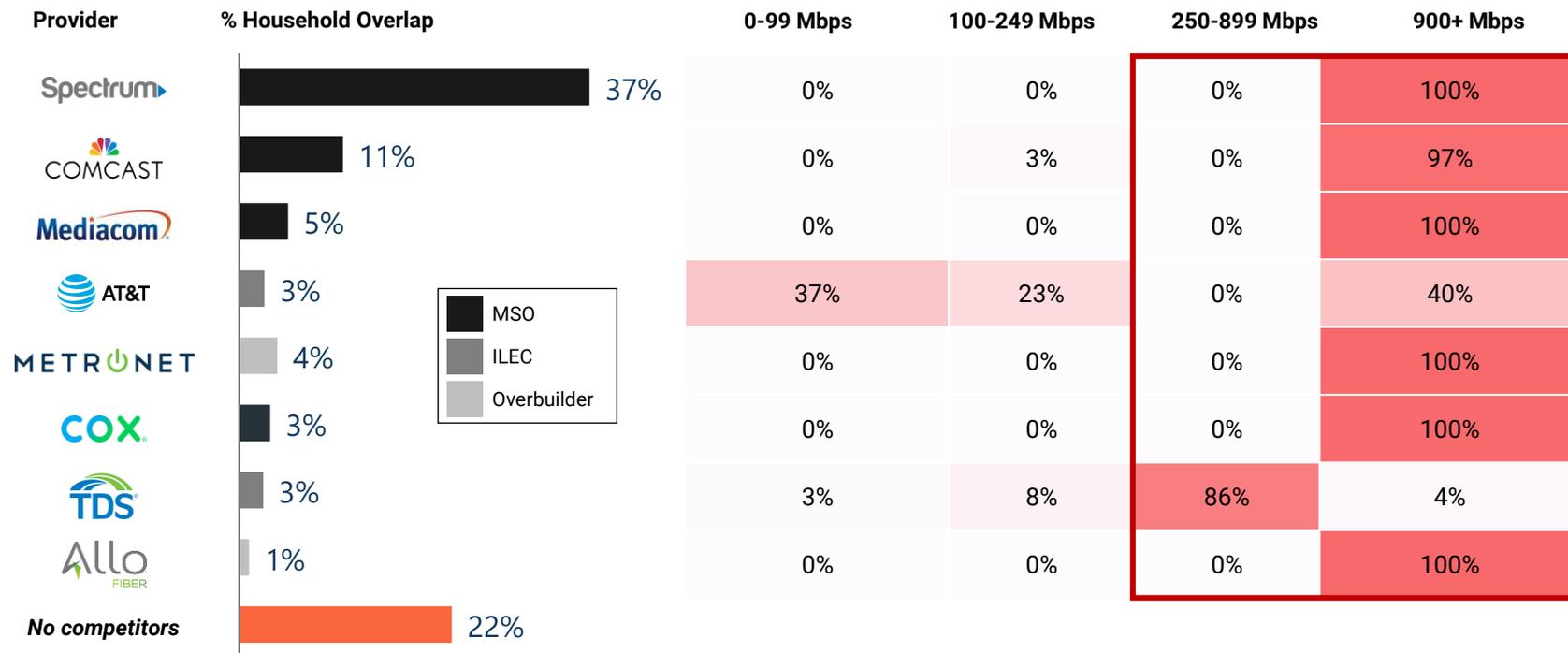
## Competitive Overlap by Technology Example

### Target Co. Competitive Overlap by Provider & Technology



### Competitive Overlap by Speed Example

### Target Co. Competitive Overlap by Provider & Speed

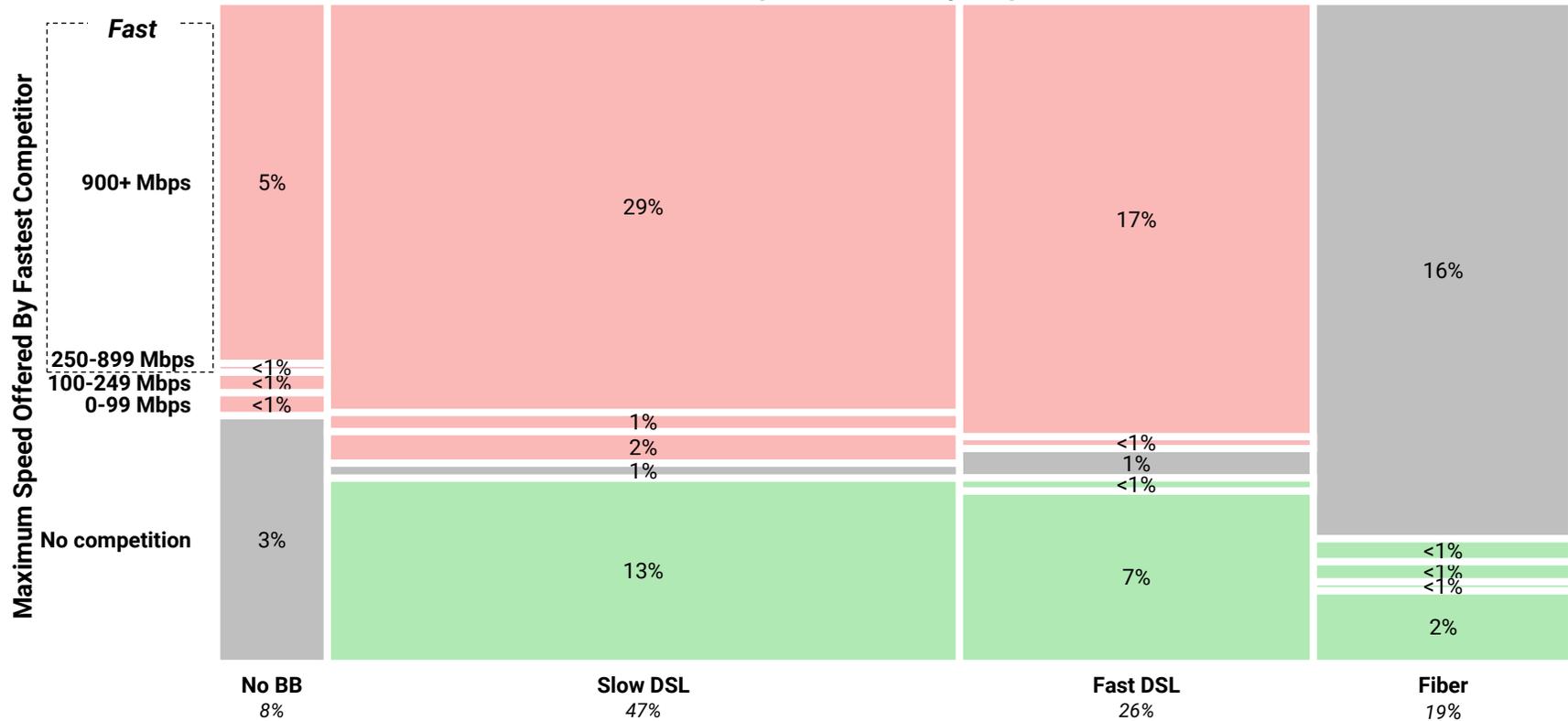


# Competitive Advantage Example

## Target Co. vs. Competition

Max Speed Available by Target Co.

- Target Co. Disadvantaged
- Target Co. At Speed Parity
- Target Co. Advantaged



## Penetration Example

### Target Co. Penetration by Market

Includes both availability and adoption

Market	Type	NSR Estimated Passings			Broadband Penetration		Occupancy (incl. Seasonal)		Fair Market Share		End-State Penetration	
		Homes	SMB	Total	2024	2030	2024	2030	2024	2030	2024	2030
Mid-Atlantic (VA/TN)	Existing	48.4K	9.4K	57.8K	84%	85%	88%	88%	49%	50%	38%	40%
	Planned	0.3K	0.0K	0.3K	76%	77%	85%	85%	98%	98%	64%	65%
	Upgrade	66.6K	1.1K	67.7K	84%	85%	87%	87%	58%	60%	42%	44%
	BEAD	1.8K	0.0K	1.8K	86%	87%	87%	87%	84%	86%	61%	63%
	Edge-Out	224.3K	16.4K	240.6K	82%	83%	90%	90%	43%	46%	33%	35%
<b>Total</b>		<b>341.2K</b>	<b>27.0K</b>	<b>368.2K</b>	<b>83%</b>	<b>84%</b>	<b>89%</b>	<b>89%</b>	<b>47%</b>	<b>49%</b>	<b>35%</b>	<b>37%</b>
Southeast (AL/GA)	Existing	12.3K	1.3K	13.6K	75%	76%	92%	92%	44%	47%	31%	34%
	Upgrade	0.3K	0.0K	0.3K	74%	75%	98%	98%	52%	54%	38%	40%
	BEAD	23.2K	0.5K	23.7K	75%	76%	88%	88%	92%	92%	61%	62%
	Edge-Out	6.4K	1.6K	8.0K	74%	75%	92%	92%	42%	47%	33%	38%
<b>Total</b>		<b>42.2K</b>	<b>3.4K</b>	<b>45.6K</b>	<b>75%</b>	<b>76%</b>	<b>90%</b>	<b>90%</b>	<b>67%</b>	<b>69%</b>	<b>46%</b>	<b>49%</b>

## Penetration by Technology Example

### Target Co. Estimated Penetration by Technology & Number of Gigabit Capable Competitors

		Target Co. Technology				
		No BB	Copper	Fiber	Total	
# of Gig Competitors	<b>0</b>	HHs	171K	1,226K	157K	<b>1,553K</b>
		<i>% of footprint</i>	4%	26%	3%	<b>34%</b>
		Estimated Penetration	--	41%	42%	<b>41%</b>
	<b>1</b>	HHs	129K	1,737K	610K	<b>2,475K</b>
		<i>% of footprint</i>	3%	38%	13%	<b>53%</b>
		Estimated Penetration	--	23%	23%	<b>23%</b>
	<b>2+</b>	HHs	55K	421K	125K	<b>601K</b>
		<i>% of footprint</i>	1%	9%	3%	<b>13%</b>
		Estimated Penetration	--	14%	19%	<b>15%</b>
	<b>Total</b>	HHs	<b>354K</b>	<b>3,384K</b>	<b>891K</b>	<b>4,630K</b>
		<i>% of footprint</i>	<b>8%</b>	<b>73%</b>	<b>19%</b>	<b>100%</b>
		Estimated Penetration	--	<b>27%</b>	<b>25%</b>	<b>25%</b>