



Closing The Gap - An Open Letter To Secretary Raimondo

Jonathan Chaplin

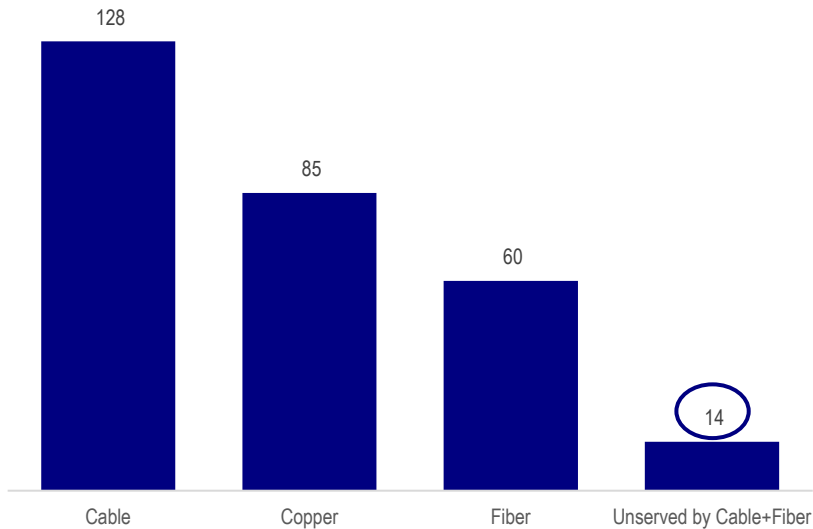
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14MM households lack broadband today

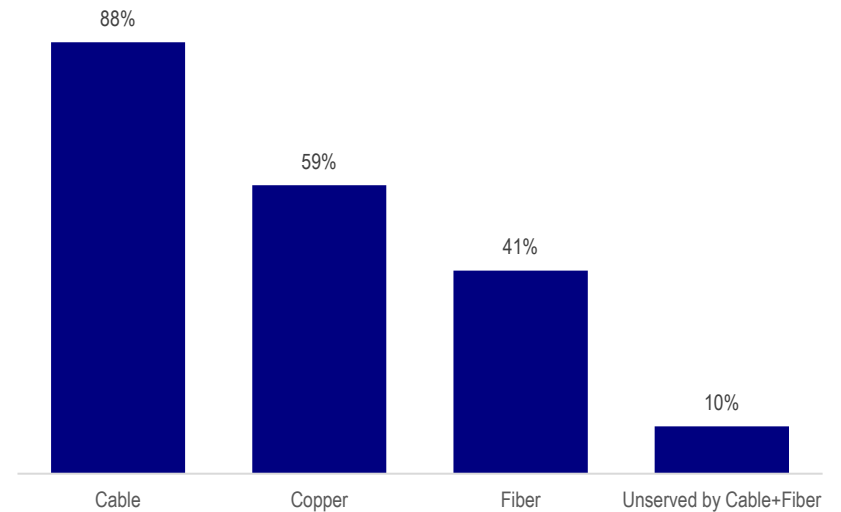
Housing Units With Access To Different Technologies

No. of Housing Units (MMs)



Housing Units With Access To Different Technologies

% of Housing Units

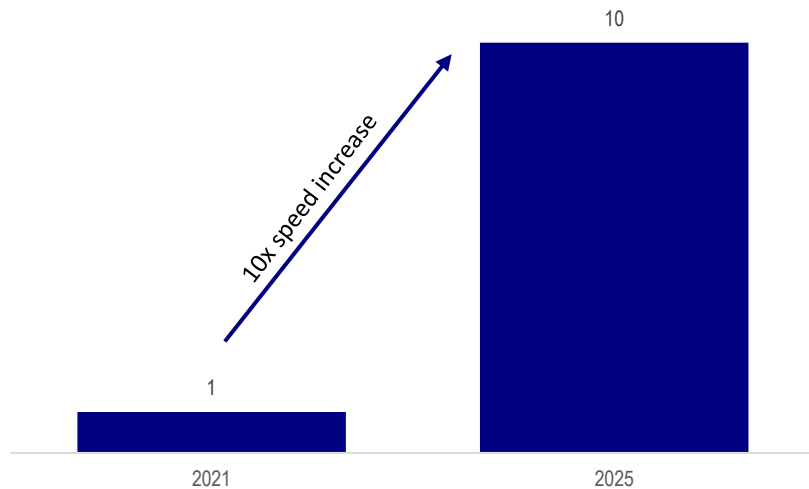


Source: NSR Analysis; FCC Broadband Map

The future requires fiber

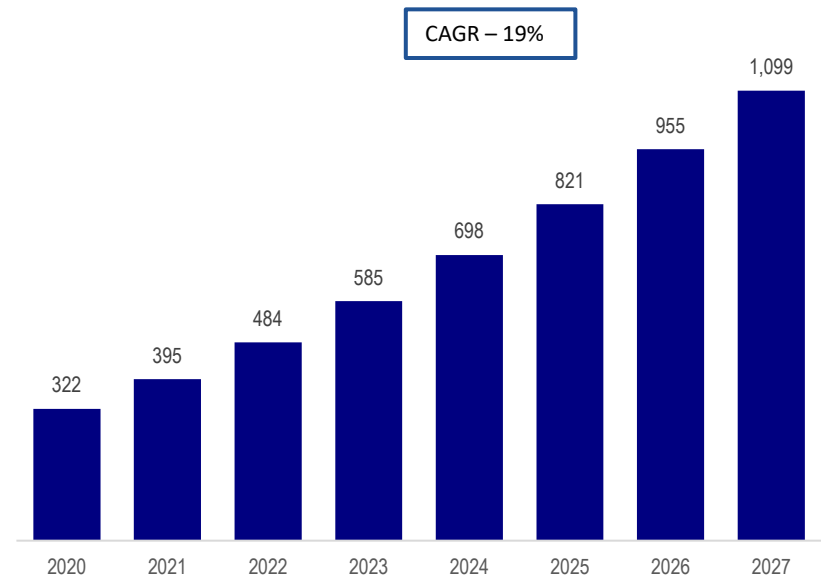
Increase In Speeds For Fiber Plant Over Time

Gbps



Increase In Broadband Usage (2020-2027)

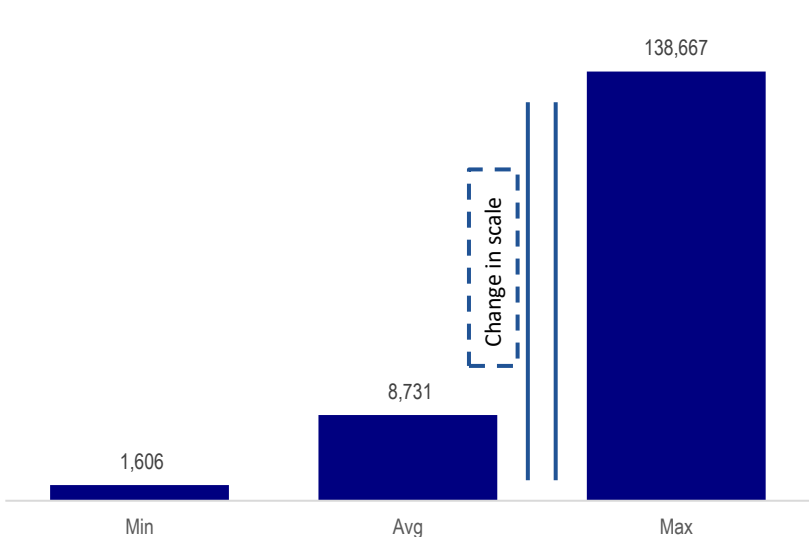
GB per Sub



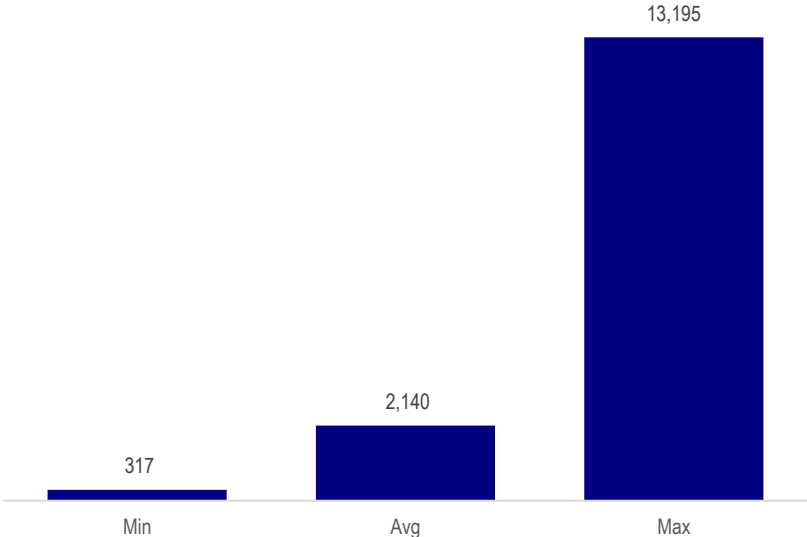
Source: NSR Analysis; Cisco VNI

The neglected housing units are expensive to serve

Cost To Pass - Rural
\$ per Housing Unit



Cost To Pass – Neglected Urban
\$ per Housing Unit

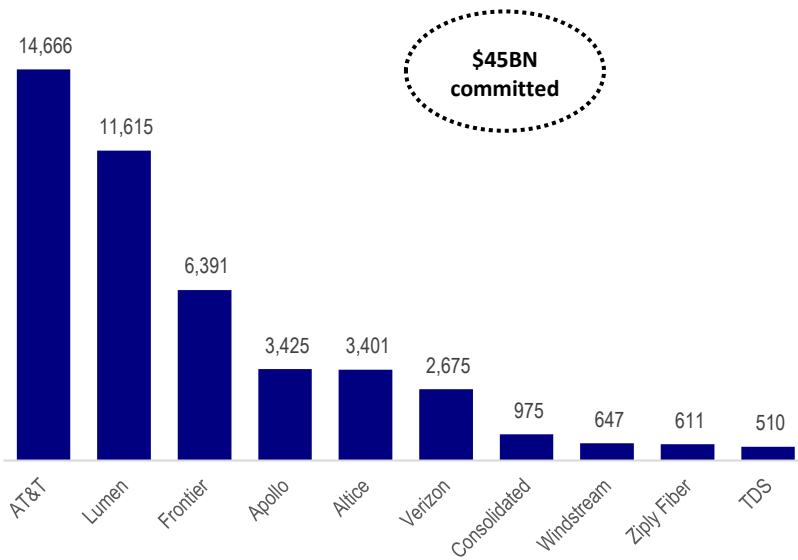


Source: NSR Analysis

Private capital will fund broadband investment, under right conditions

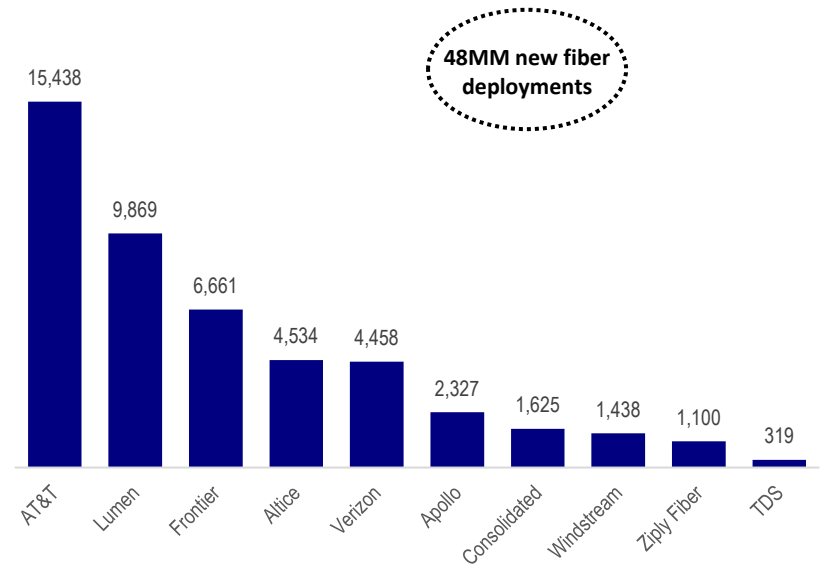
Capital Committed To Fiber Deployments

\$ in MMs



New Fiber Deployments Announced

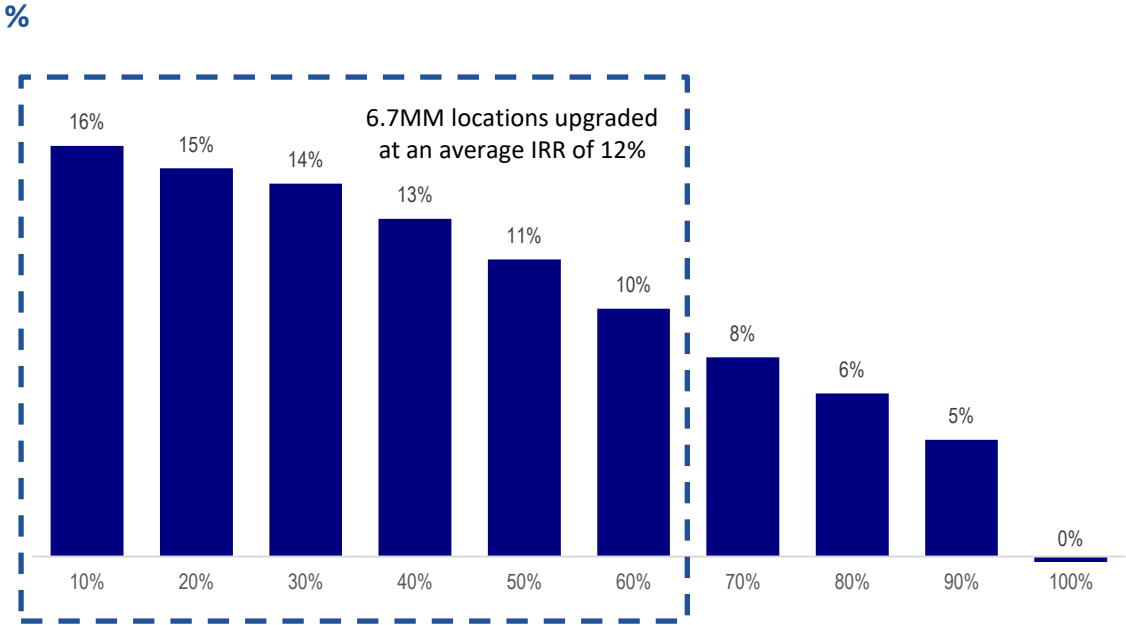
Housing Units in Thousands



Source: NSR Analysis; Company data

Private capital requires an adequate return

12MM Frontier Locations Not Served By Fiber – IRR by Decile

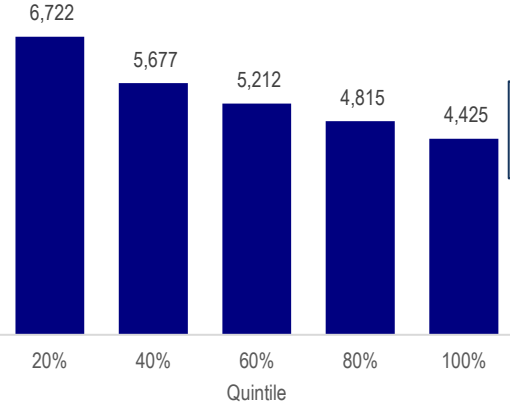


Source: NSR Analysis

Unserved markets' cost too high to be funded with private capital...

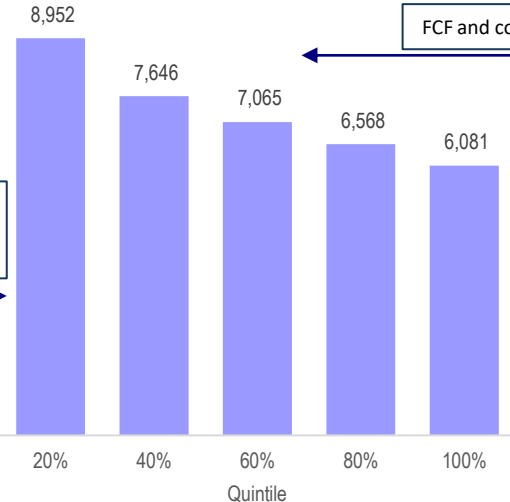
Density Drives Cost To Pass

\$ per Housing Unit



Penetration Drives Cost To Serve

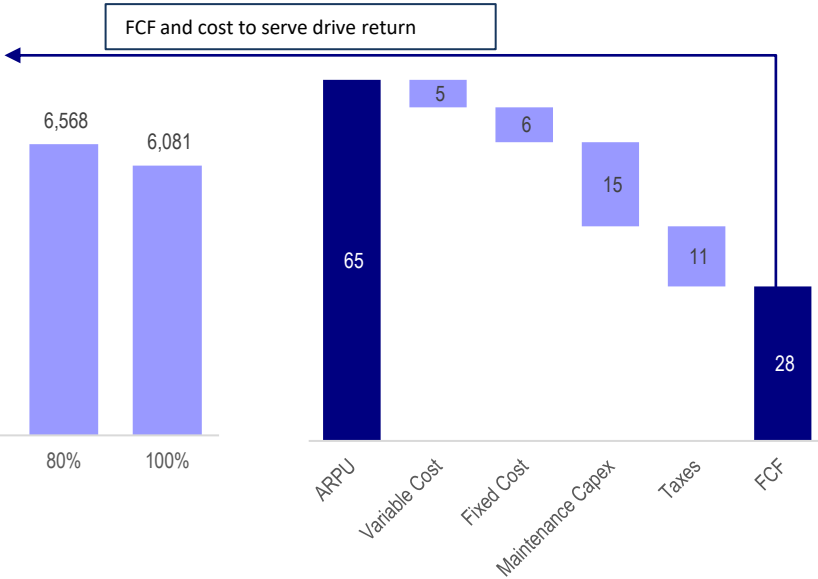
\$ per Housing Unit



Assume penetration of 80%

Walkthrough From ARPU To FCF

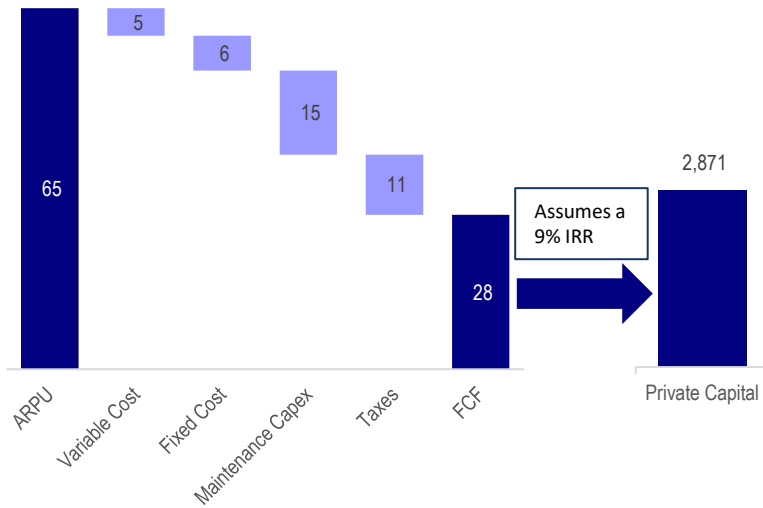
\$ per Subscriber per Month



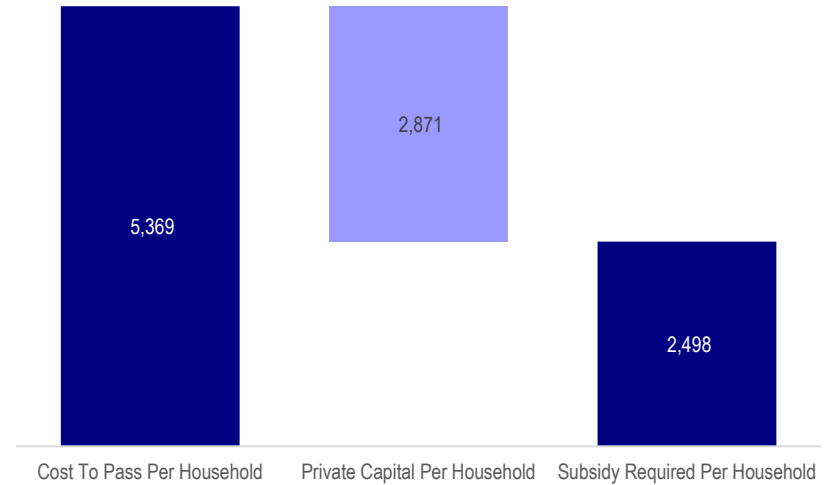
Source: NSR Analysis; Company data

...but a subsidy could bridge the gap

At 9% IRR, Private Capital Willing To Fund \$2,900
\$ per Subscriber per Month; \$ per Household



Subsidy of \$2,500 Required
\$ per Household

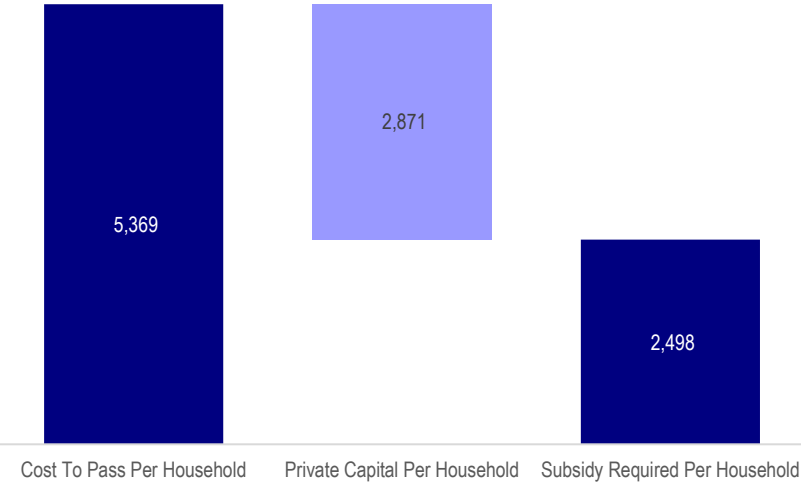


Source: NSR Analysis; Company data

It would cost \$75BN to get fiber to 14MM unserved homes

Total Cost / Subsidy Per Household

\$ per Housing Unit



Total Cost / Subsidy

\$ in MM



Source: NSR Analysis

Six Requirements For Success

#1 Insist on fiber

#2 Create a process and rules that will attract private capital

#3 Favor most efficient deployment that leverages expertise and scale efficiencies

#4 Give states clear and explicit guidelines on how to administer the funds

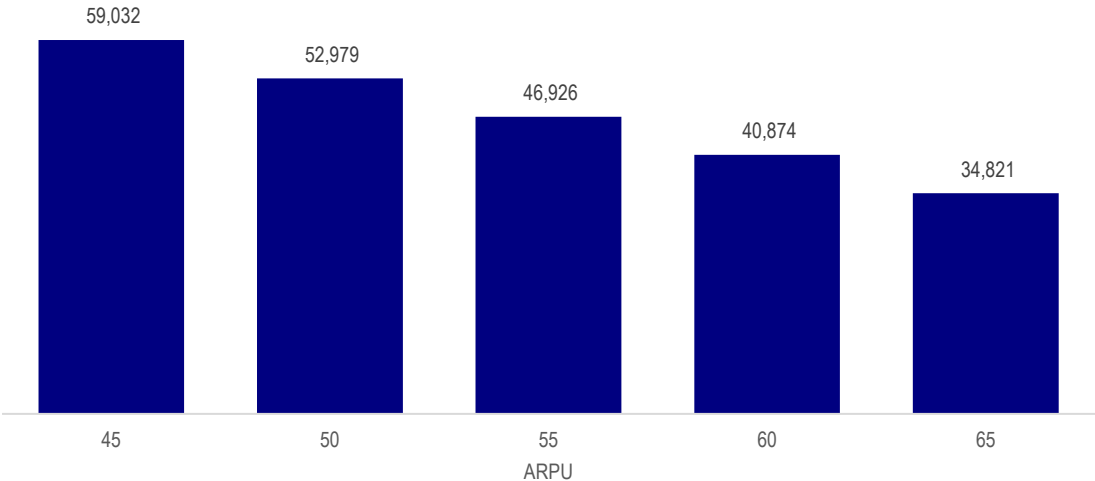
#5 Fund access, not competition

#6 Let the operators set prices

Price regulation would drive up subsidy costs

Change In Subsidy Required Due To Change In ARPU

\$ in BNs



Source: NSR Analysis

Competition doesn't always drive prices lower

Change In IRR Due To Increased Competition

\$; \$ in thousands; %; homes and subs in thousands

	1 Player	2 Players
Homes passed	1,000	1,000
Market share	100%	50%
Penetration	80%	40%
Subscribers	800	400
ARPU	65	65
Revenue	624	312
Variable costs	58	29
Subscriber acquisition cost	29	14
Fixed costs	50	50
EBITDA	488	219
Maintenance Capex	61	56
Unlevered FCF	427	163
Interest expense	159	144
Income taxes	75	5
Cash flow after taxes	193	14
Capex per home passed	2,000	2,000
Capex to connect per sub	550	550
Total Capex	2,440	2,220
Interest rate	6.5%	6.5%
Tax rate	28%	28%
Increase in cash flow every year	1%	1%
WACC	9%	9%
IRR	9%	-8%

Change In ARPU Required To Return To 9% IRR

\$; \$ in thousands; %; homes and subs in thousands

	1 Player	2 Players
Homes passed	1,000	1,000
Market share	100%	50%
Penetration	80%	40%
Subscribers	800	400
ARPU	65	115
Revenue	624	552
Variable costs	58	29
Subscriber acquisition cost	29	14
Fixed costs	50	50
EBITDA	488	459
Maintenance Capex	61	56
Unlevered FCF	427	403
Interest expense	159	144
Income taxes	75	73
Cash flow after taxes	193	186
Capex per home passed	2,000	2,000
Capex to connect per sub	550	550
Total Capex	2,440	2,220
Interest rate	6.5%	6.5%
Tax rate	28%	28%
Increase in cash flow every year	1%	1%
WACC	9%	9%
IRR	9%	9%

Source: NSR Analysis



Please contact us with questions or thoughts.
We are also happy to share our analysis.

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Disclosures

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