

Desautels Capital Management

Honours in Investment Management

T-Mobile (NASDAQ: TMUS)

TMT

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Investment Overview



\$119.22
Current Price

\$146
Target Price

23%
Upside/
Downside

1 T-Mobile's First-Mover Advantage is Undervalued

T-Mobile has a sizable advantage in spectrum quantity and 5G network strength than competitors

2 Market underestimating the risks with new 5G rollout

The market is not properly pricing in the significant risks associated with the vast leverage needed to compete in the mid-band auctions

Risks

- Sprint integration issues or delays
- Issues with management changes
- Negative economic climate

Catalysts

- Accelerated synergy realization
- Overleveraged competitors
- March Analyst Day

Sources: Company filings, Bloomberg, CapIQ, Equity Research

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Company Overview

What is T-Mobile?



Company Overview

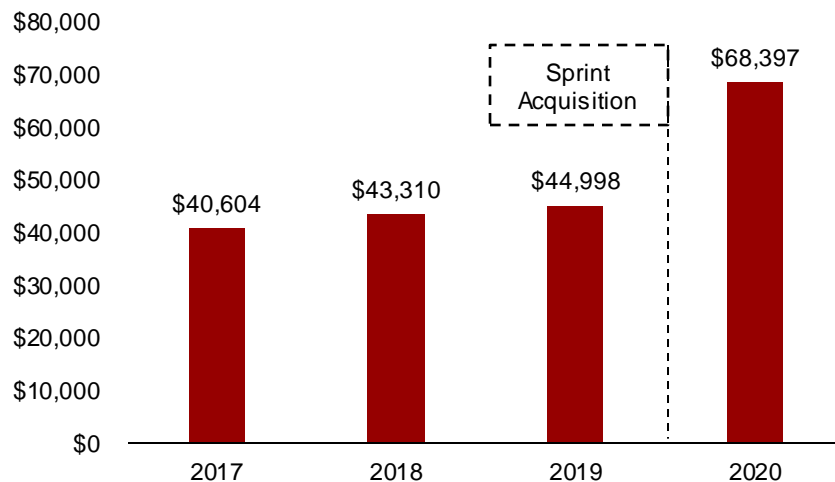
- T-Mobile USA is one of the three major American telecom companies, with its focus being wireless
- Company's value proposition: superior network quality + excellent customer service + low churn → high growth
- The firm is 43% owned by Deutsche Telekom AG (the brand name is used in the Czech Republic, the Netherlands, and Poland), and 9% owned by Softbank (was 24% pre-COVID)
- Launched America's first nationwide 5G network, covering more than 200mm people and over 5,000 cities with 5G on their 600MHz low-band spectrum

Public Markets Overview

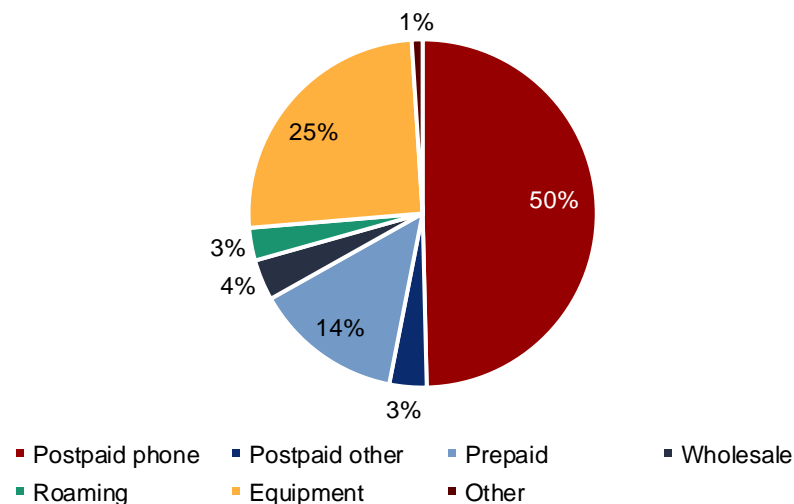
Price Per Share	\$ 119.22
FDSO	1241.8mm
Total Equity Value (\$mm)	148,047
Add: Total Debt	107,247
Less: Cash & Equivalents	10,385
Total Enterprise Value	244,909

Valuation Metrics	Operation Metrics
EV/Revenue	3.6x 2-Year Rev. CAGR 5.3%
EV/EBITDA	8.8x LTM Gross Margin 59.6%

4-Year Revenue Trajectory (\$mm)



Revenue Breakdown by Segment



Source: Capital IQ, Company Filings

T-Mobile divides its operations into six separate segments, with postpaid, prepaid and equipment being key drivers

Postpaid revenues	Customers who pay after receiving wireless communications services (e.g., monthly subscriptions)
Prepaid revenues	Customers who pay for wireless services in advance (e.g., prepaid plans)
Wholesale revenues	Primarily Mobile Virtual Network Operator (MVNO) customers who operate on the T-Mobile network but are managed by wholesale partners
Roaming and other services	Domestic and international roaming revenue
Equipment revenues	Revenues from selling and leasing equipment and devices to customers
Other revenues	Spectrum leasing, co-location rental, advertising revenues, etc

Postpaid are the most important due to their recurring nature, with a major KPI being conversion rate from prepaid to postpaid

Source: Company Filings

Added valuable experience in customer management, IT supply chain, strategic partnerships, and developing broadband



Mike Sievert – President & CEO

- Joined T-Mobile in 2012 as CMO, became COO in 2015, and on the board since 2018
- Prior: 25y career with experience as executive with E*TRADE, Microsoft, and AT&T



Néstor Cano – EVP Transformation

- Formerly Sprint's COO, responsible for integrating both companies and synergies
- Experience across omnichannel IT solutions, digital architecture, and IT supply chain



Peter Ewens – EVP Corp Strategy & Dev

- Joined T-Mobile in 2008 and leads strategic partnerships, business incubation, and M&A
- Prior: VP of OEM operations at Sun Microsystems, and partner at McKinsey



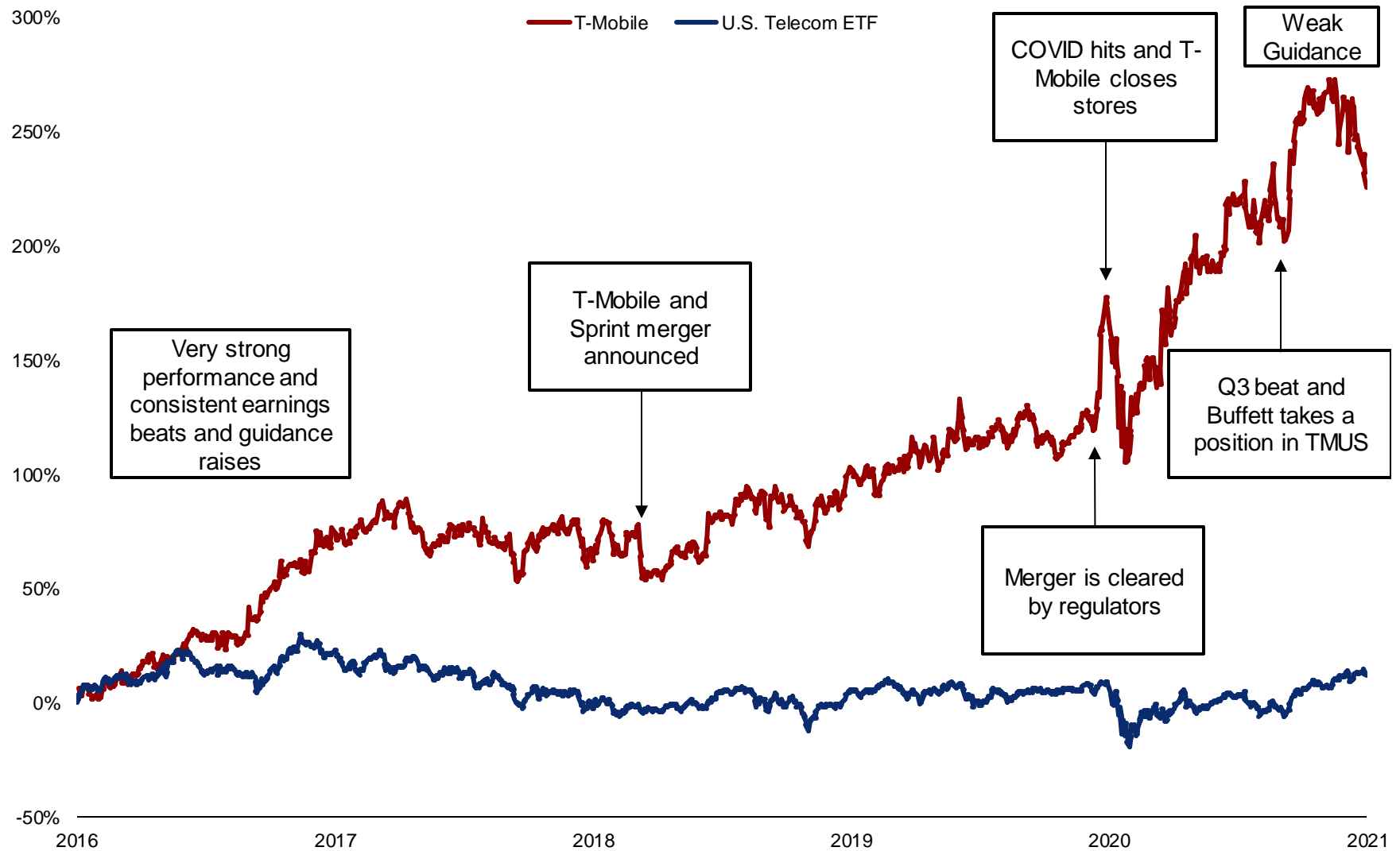
Abdul Saad – CTO

- Joined T-Mobile in 2002, has directly worked on developing all broadband tech since 2G
- Chair of GSMA North America, member of 5G Americas, and board member of NGMN

Source: Company Website

5-Year Historical Performance vs. Telecom Benchmark

T-Mobile has soared past the competition over the past five years



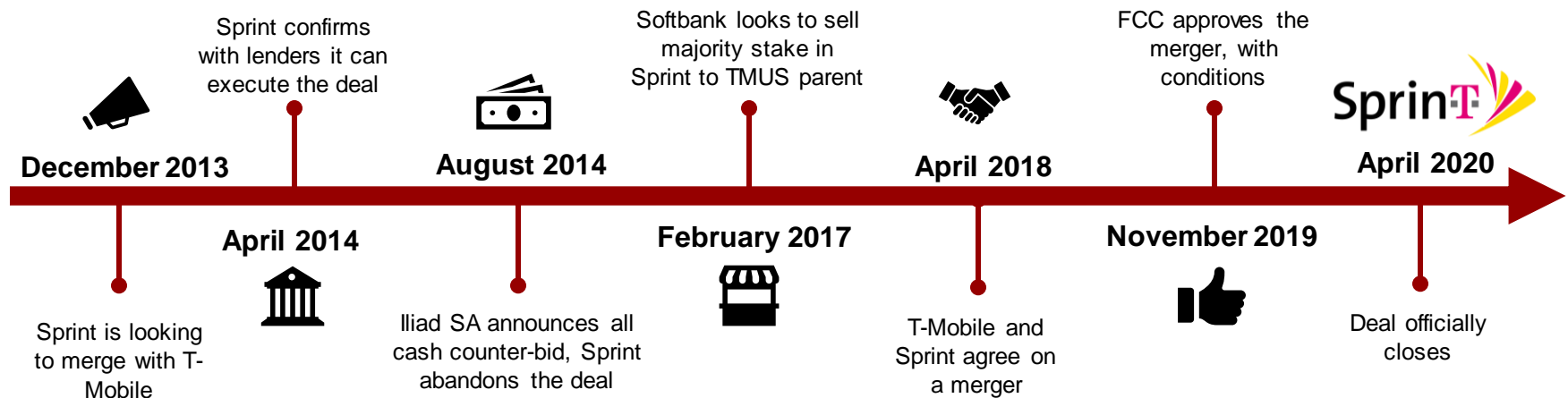
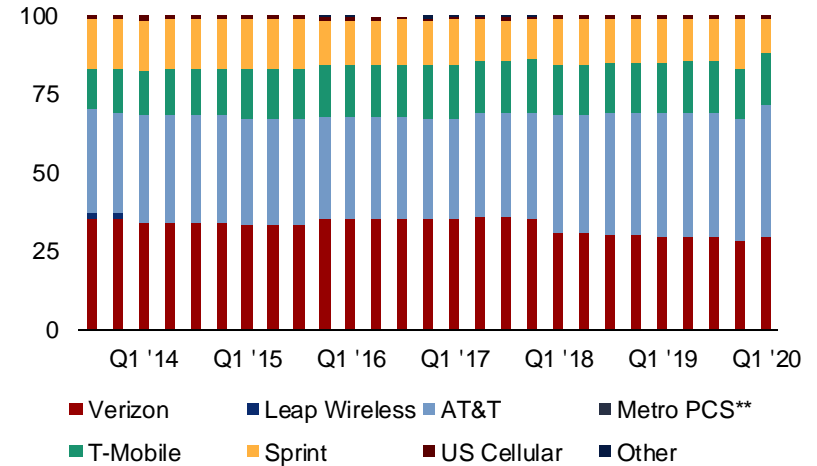
Source: Company Website, The Motley Fool, Yahoo! Finance

If you can't beat em, join the next largest player

T-Mobile's Acquisition of Sprint

- Merger discussions date back to 2013
- US regulators' desire to maintain four major wireless carriers made the deal difficult to consummate
- Final deal came with conditions to sell portions of Sprint's business and spectrum to Dish Network
- FCC required 97% of Americans to have 5G access within 3 years of the merger closing, with 90% having 100+Mbit/s speed

US Telecom Industry Market Share by Quarter



T-Mobile has been stuck in M&A purgatory for years and finally has the chance to build on its acquisition

Source: Statista, Company Press Releases

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Spectrum

What is it?

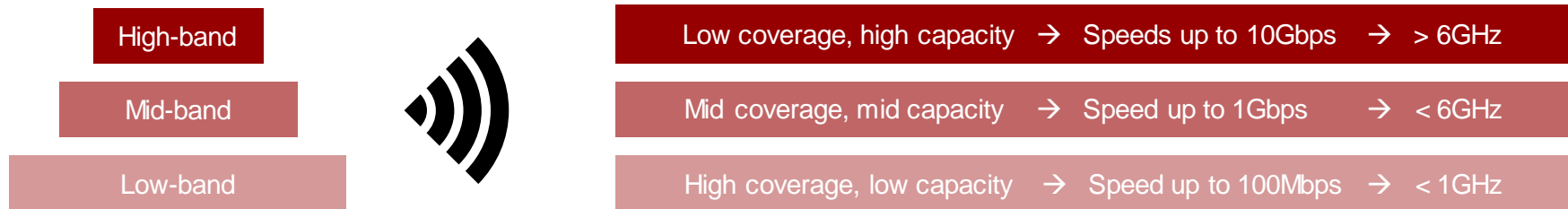


Fun fact: microwaves run at 2.45GHz, so if you use your phone near a microwave, the Wi-Fi signal might be slower!

What is spectrum?

Spectrum relates to an assortment of radio frequencies used for communication through electromagnetic waves.

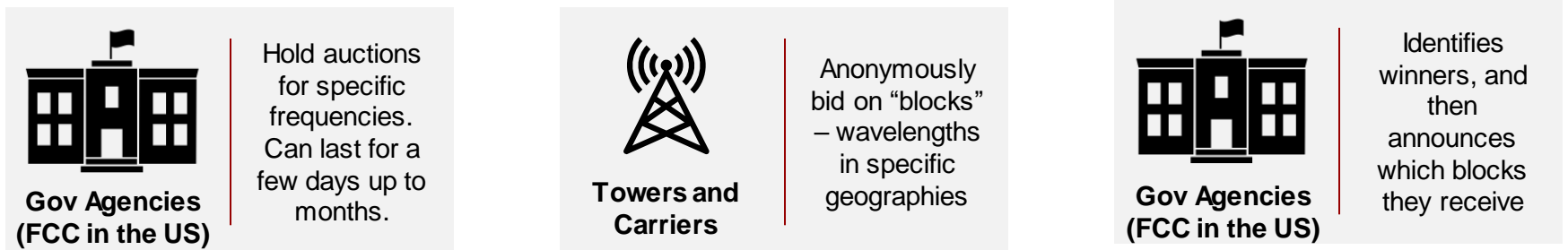
What kinds of spectrum are there and what are the differences?



What spectrum bands are commonly used and why?

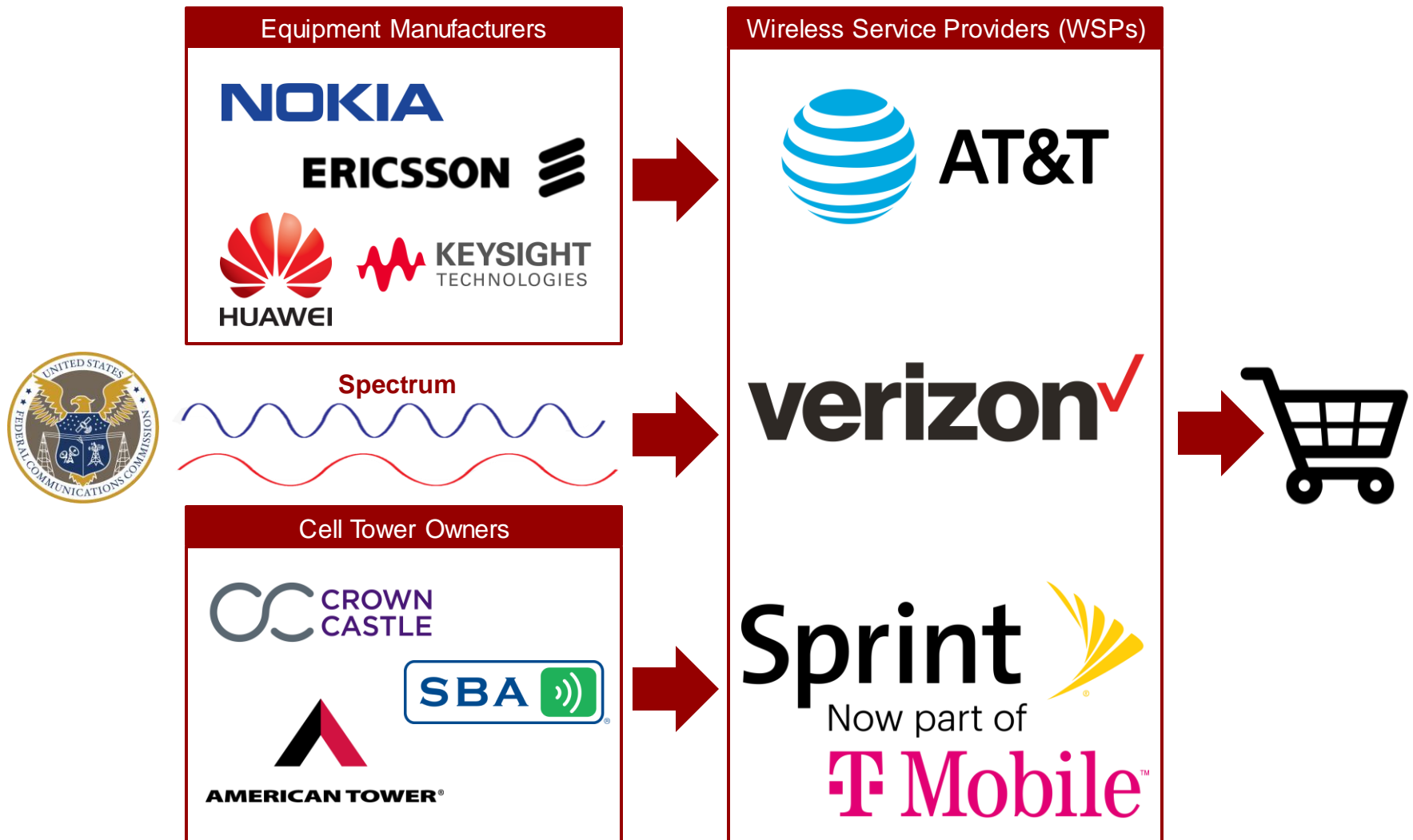
The vast majority of consumer devices are on 2.4 and 5GHz (unlicensed). They are the perfect combination of speed and reliability to support most devices and companies are government-mandated to stay on these frequencies (to avoid noise/interference)!

Who controls spectrum and how is it sold & licensed?



Source: CNBC, GSM Association, UBS

Service providers require a lot of expensive inputs, both in terms of capital and operating expenditures



Source: Deloitte Insights, CNBC

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Thesis 1

T-Mobile's First-Mover Advantage is Undervalued



T-Mobile's First-Mover Advantage in 5G

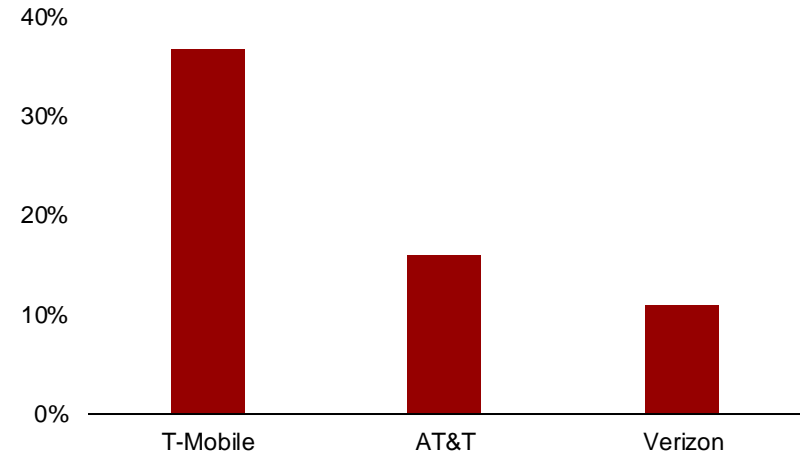
Not the 2004 crime movie, but rather an approach to 5G

How T-Mobile Got Ahead



- TMUS received 2.5GHz spectrum in the Sprint merger, which Sprint had acquired from Clearwire
- 2.5GHz spectrum was not seen as attractive to major carriers at the time Clearwire was purchased
- With T-Mobile's "Layer Cake" approach to 5G (below), the carrier has been able to effectively leverage the spectrum to increase its coverage
- Analysts place T-Mobile's lead at 18-24 months

Proportion of US with 5G Coverage by Carrier



T-Mobile has a head start in the race for 5G supremacy

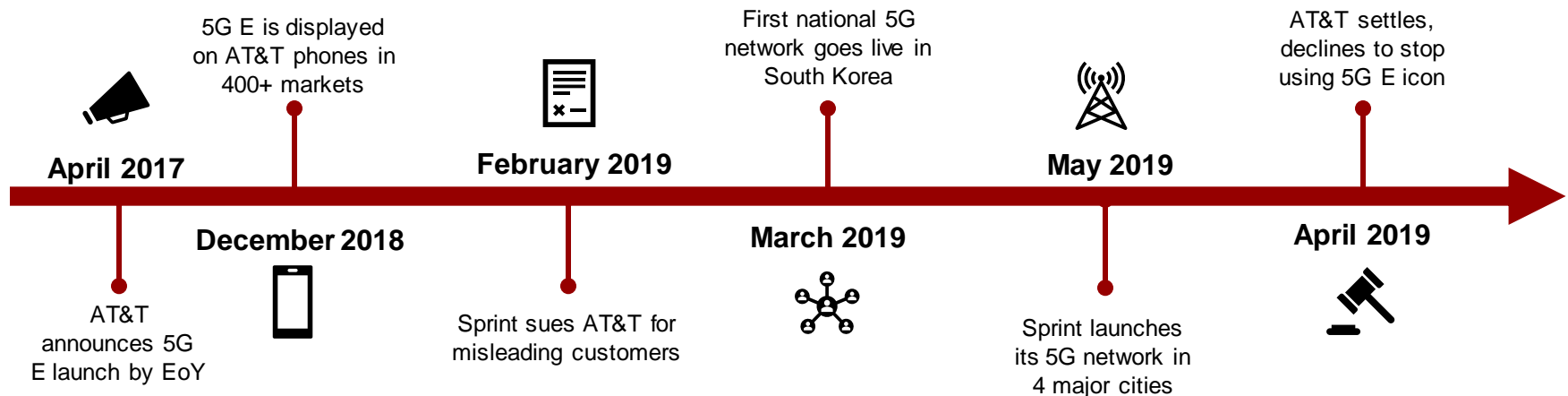
Source: WhistleOut, Company Press Releases, JP Morgan Equity Research

Wait, Who Actually Has 5G?

You can't handle the truth

A Battle for Consumer Perception

- ~1/3 surveyed stated their phone had 5G in 2019 despite limited devices and network capabilities (almost 50% of AT&T and T-Mobile customers)
- T-Mobile blasted AT&T and VZ for playing games with “price, lack of transparency and outright lies about 5G”
- DCM believes TMUS will see benefits as their superior network is built out and customer awareness grows

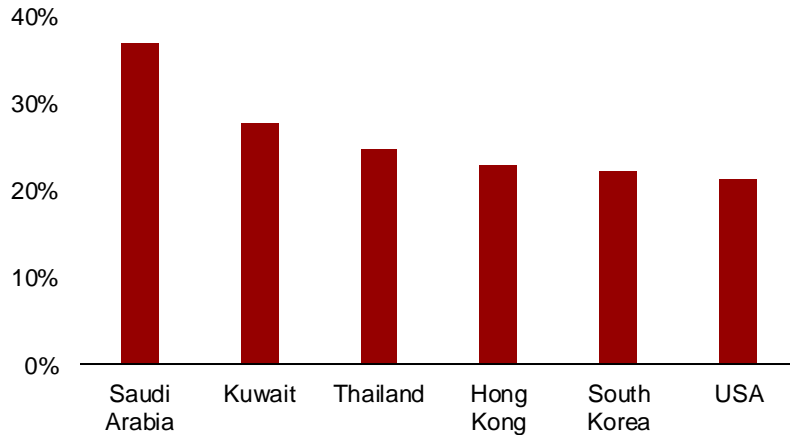


Confusion surrounding 5G's launch has prevented T-Mobile from fully capitalizing on their first-mover advantage

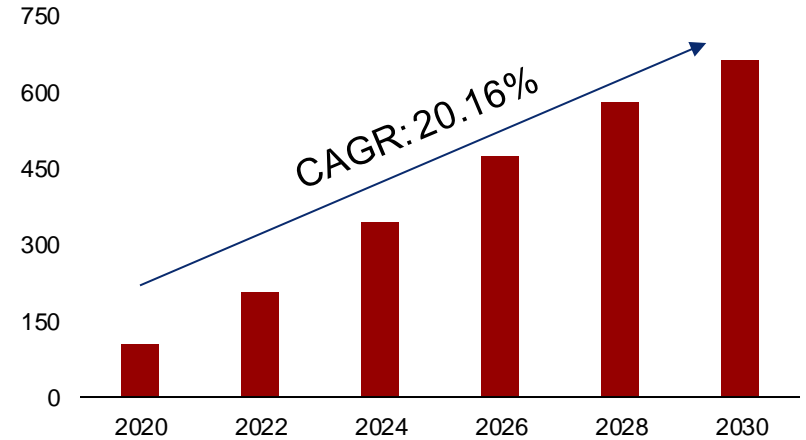
Source: Company Press Releases, Reuters

It's (going to be) everywhere

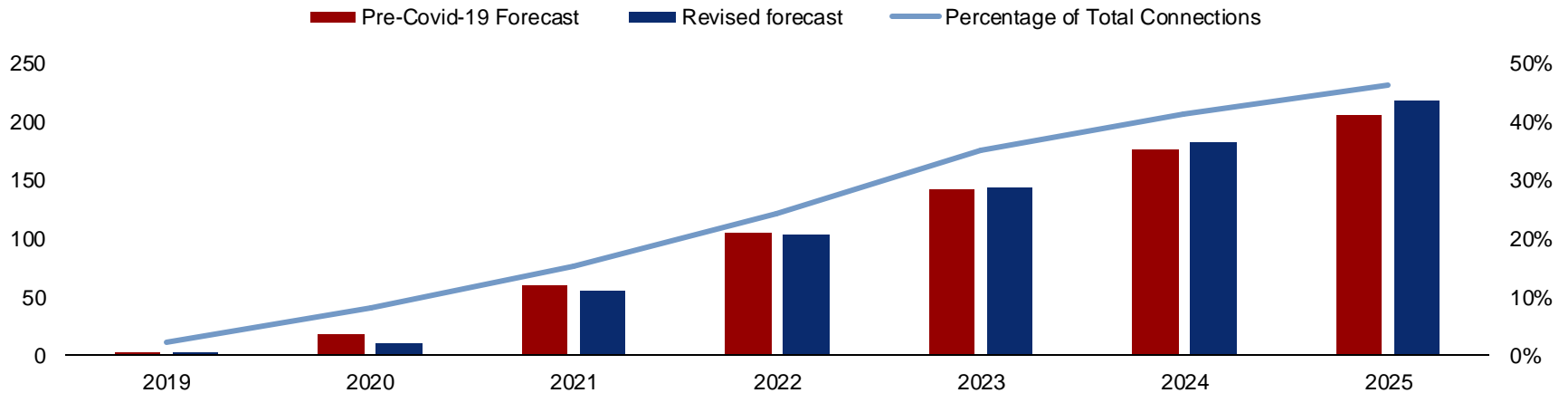
Proportion of 5G Connections for Eligible Users



Global 5G Devices Market Size (USD bn)



5G Mobile Connections in North America (mm)

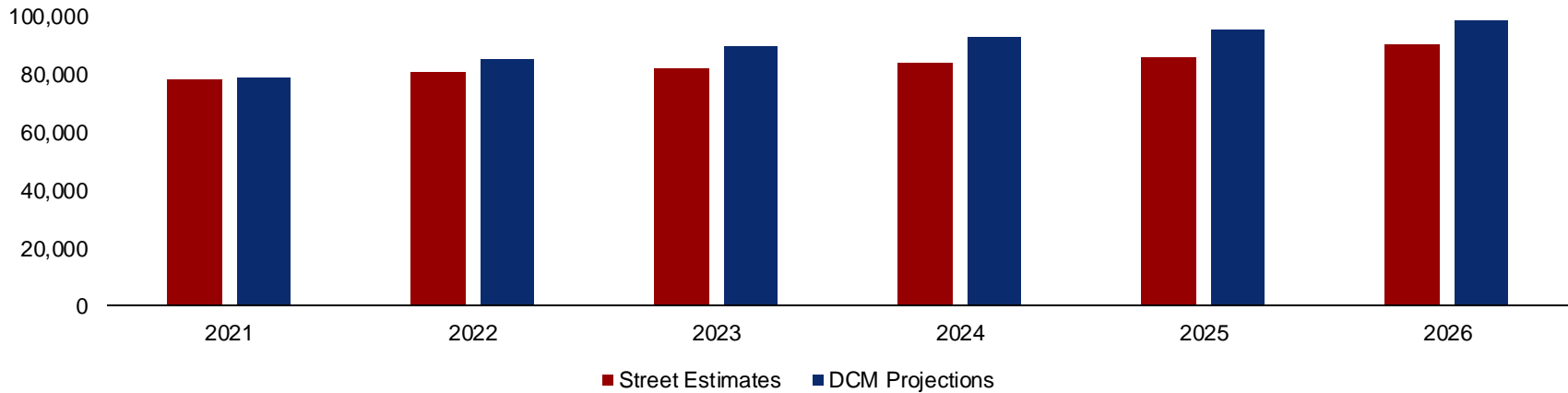


5G is set to grow rapidly over the next decade and the US is incentivized to ramp up its network

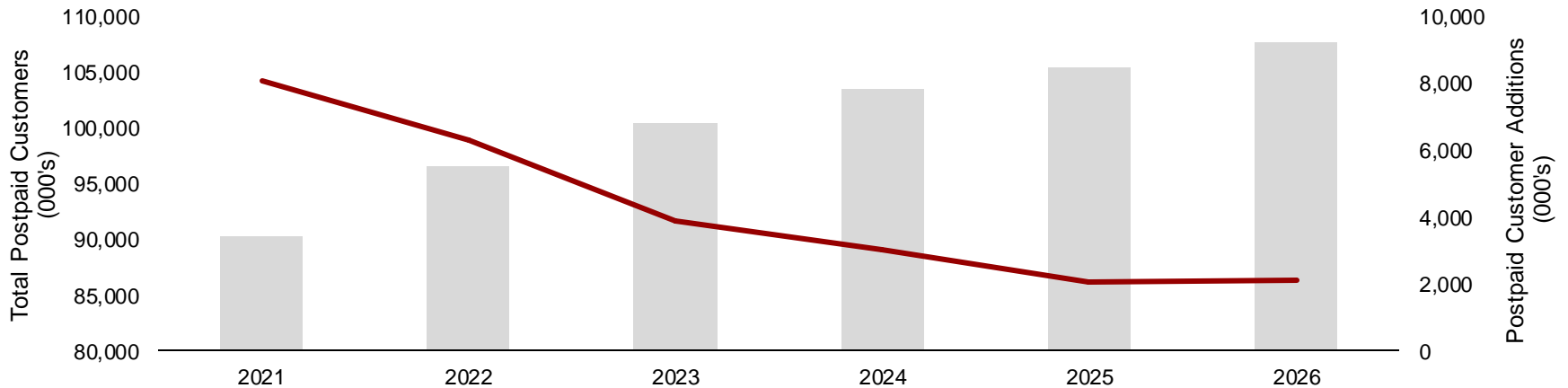
Source: Statista, OpenSignal

Very very gains

Street vs T-Mobile Revenue Projections



T-Mobile Postpaid Customers Growth



We are bullish on T-Mobile's short and medium-term top-line growth given their network advantage

Source: Capital IQ, DCM

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Thesis II

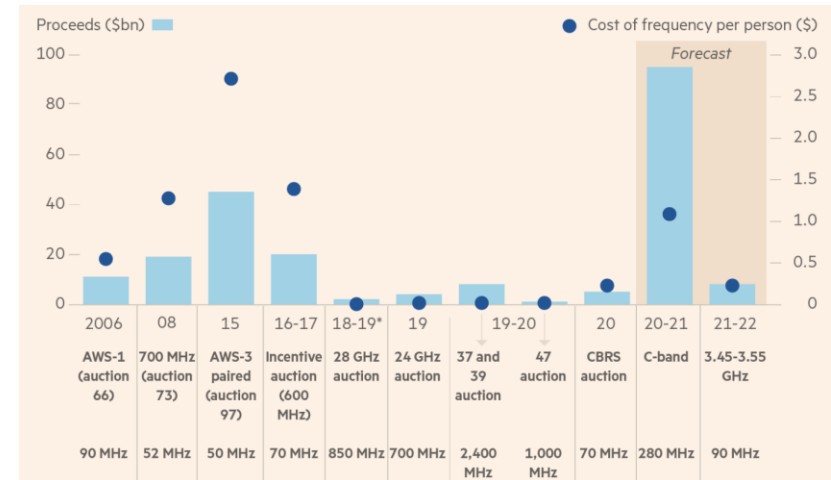
Market underestimating the risks associated with new 5G rollout



5G Mid-Band Auction

The US government making bank

- C-Band: 3.7 – 3.98 GHz (280 MHz)
- Total players: 57 bidders
- Total rounds of bidding: 97
- Total proceeds: \$81bn vs Analysts expectations: \$40bn
- Additional expenses: \$14bn → Total costs: \$95bn
- Deployment of 5G investments: \$130bn - \$150bn within 7 years



verizon✓

\$30-\$50 bn

Close the technological gap with competitors



\$15-\$20 bn

Close the technological gap with competitors

T-Mobile™

\$10-\$15 bn

Maintain lead in 5G space



\$5 bn

5G-only carrier in the US

Charter
COMMUNICATIONS

\$5 bn

Source: WSJ, FT, Forbes, Deloitte, UBS

Overpaying for C-Band spectrum can result in long-term damage

Record Setting Auction	Additional CapEx Required For Deployment	Current Leverage of Major Telecom Companies	Actual arrival of 5G
\$81 bn for 5G vs \$45 bn for 4G LTE Vs \$40 bn expected	\$130 bn - \$150 bn	\$540 bn amongst 5 biggest bidders	Block A: 3.7-3.8 GHz → 2021 Block B&C: 3.8-3.98 GHz → 2023

“The issue isn’t so much whether this particular band of spectrum is or isn’t being valued appropriately. Instead, it is the sheer quantum of money being spent for an asset that is best thought of as simply maintaining the status quo”

Moffet Nathanson

“Cable players such as Comcast and Charter, which have acquired spectrum in recent auctions, may have also pushed up prices according to analysts”

FT

The winners of this auction do not seem like real winners, only true winner could potentially be the US government

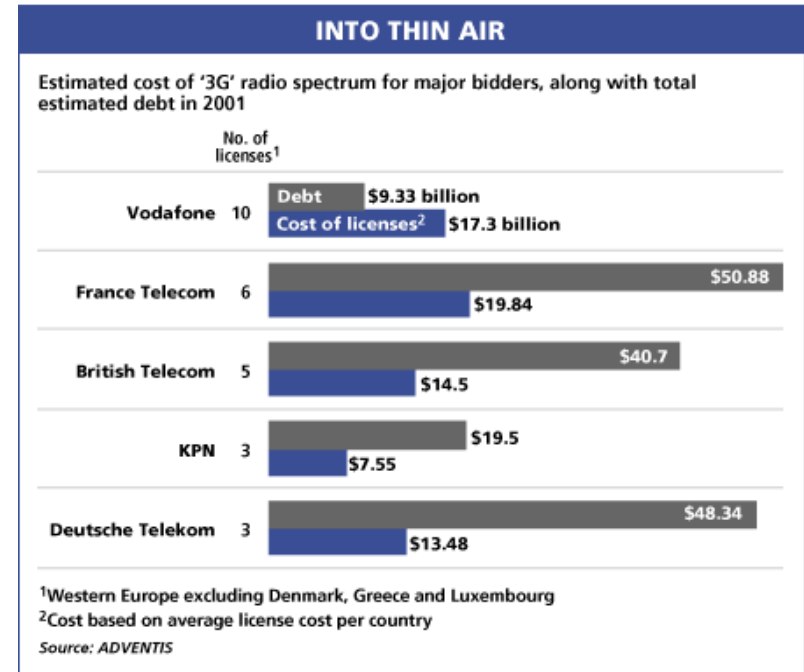
Source: WSJ, FT, Forbes, Deloitte, UBS

European Telecoms have been broken ever since their bids for 3G

- End of 90s early 2000s auctions in Europe for 3G spectrum
- Total expenses included \$34 bn in UK, \$45 bn in Germany
- Biggest spenders included France Telecom, KPN, DT, Vodafone and BT
- European telecoms were amongst the firms with the highest leverage in the world at the time

"1 billion pounds or 10 billion pounds, the psychology is the same, these bidders wanted a license at any cost."

Paul Klemperer, creator of the UK Auctions for 3G



Similarities and differences with US C-Band Spectrum Auction

Extremely
Hyped
Technology

Highly
Levered
Bidders

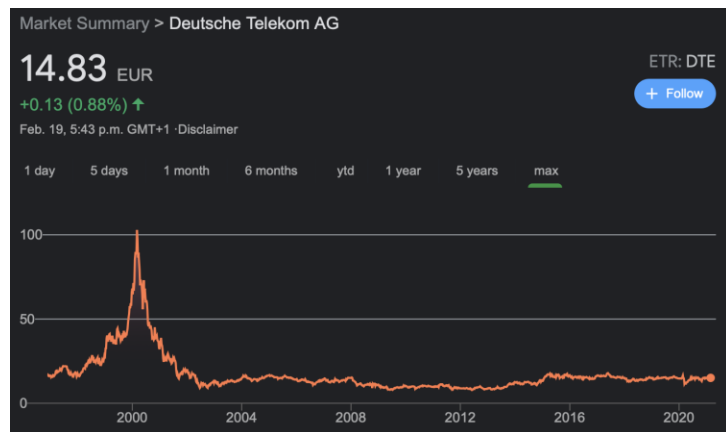
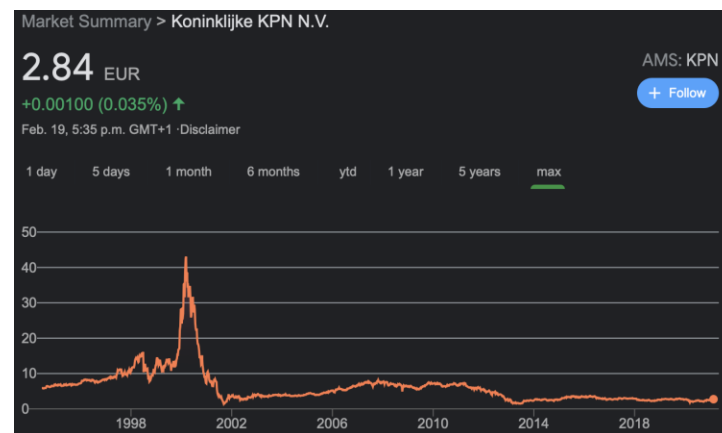
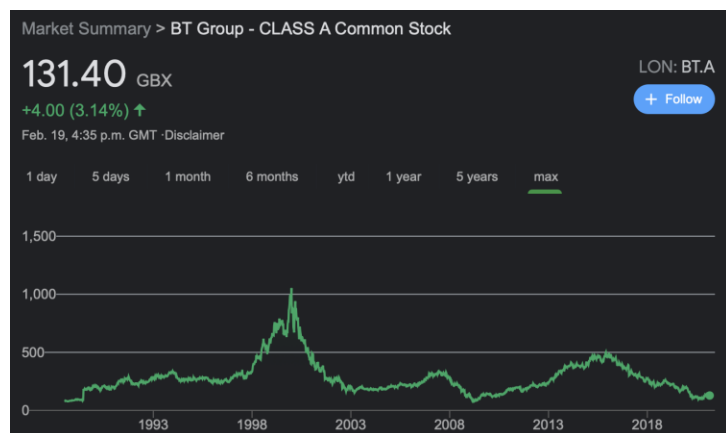
Surpassing
Analysts
Expectation

Strong
CapEx Post
Auction

Telcos have an impressive history in spending big bucks for spectrum and receiving little to no rewards in return

Source: WSJ, Yahoo Finance

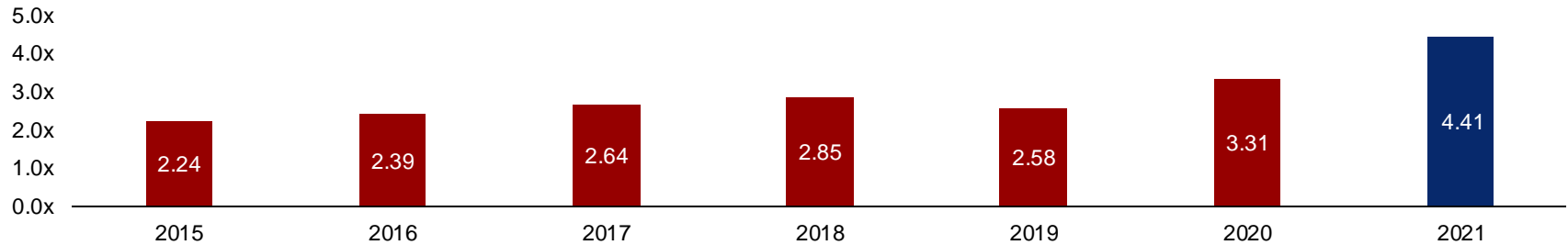
European Telecoms have been broken ever since their bids for 3G



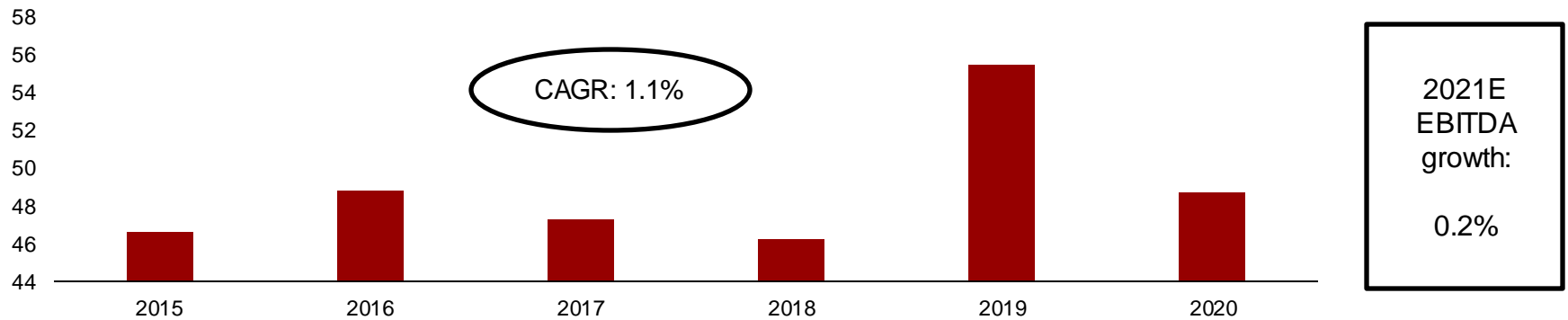
American telcos will not suffer the same consequences thanks to higher ARPU and margins + telcos have all learned from this crash, but winners of spectrum auctions have shown to be losers financially speaking

Verizon needs to invest big in 5G to maintain its top dog position in the telecom space

Debt to T12 EBITDA



EBITDA (in mm)



Additional Considerations

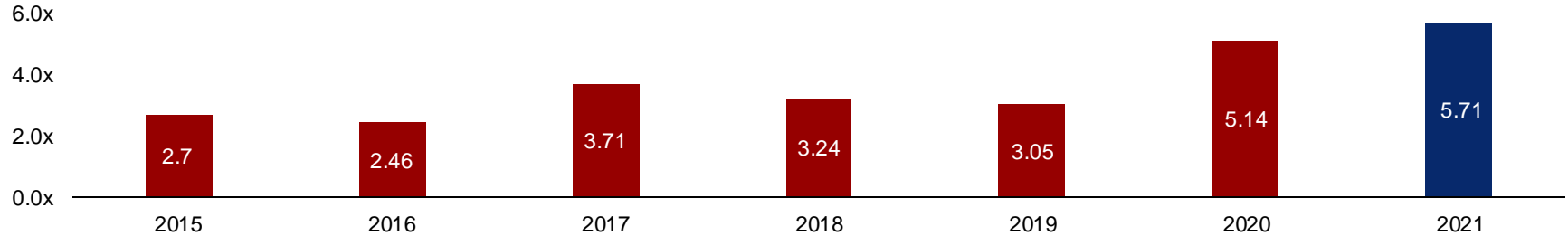
- Additional CapEx to launch an almost inexistent network
- Acquisition of America Movil's TracFone Wireless for \$3 bn in cash

Verizon's lower leverage will allow it to drop impressive bids on the C-Band auction

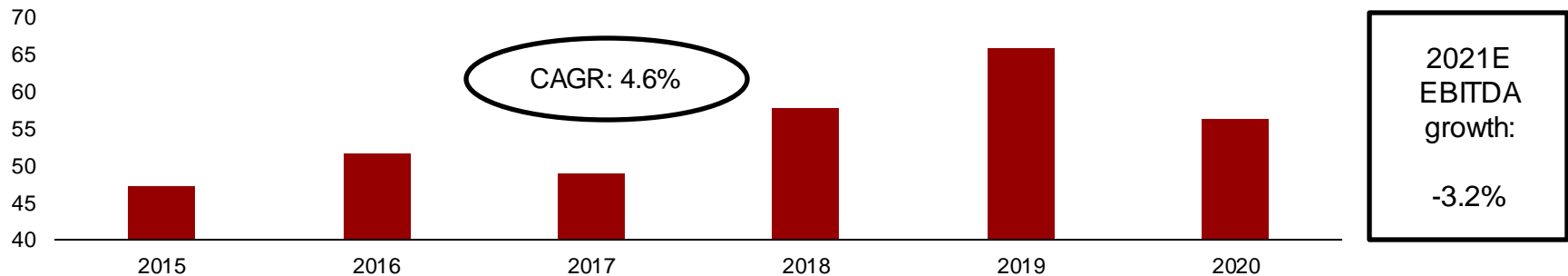
Source: Company Filings, Bloomberg, UBS, FT

AT&T needs to invest into 5G but has limited capacity following Warner Media acquisition

Debt to T12 EBITDA



EBITDA (in mm)



Additional Considerations

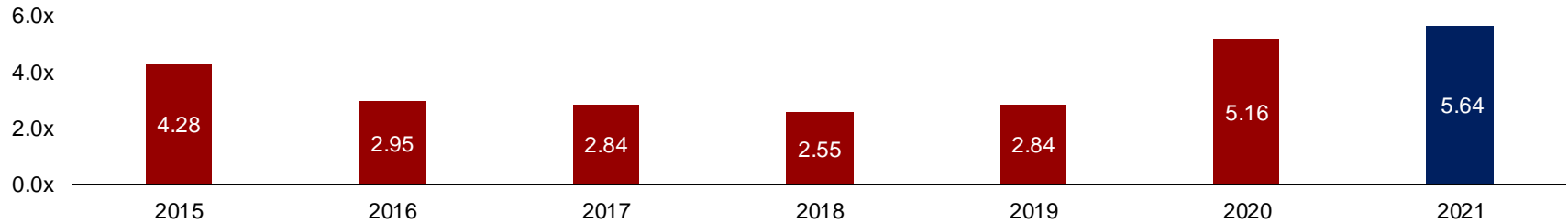
- Additional CapEx to launch an almost inexistent network
- Warner Media acquisition has not paid off as synergies have failed to come in
- **Risk of downgrade by S&P Global if spends more than \$20bn and earnings are flat this year**
- Entered into a \$14.7bn term loan credit agreement with Bank of America

AT&T find themselves in a troubled financial situation

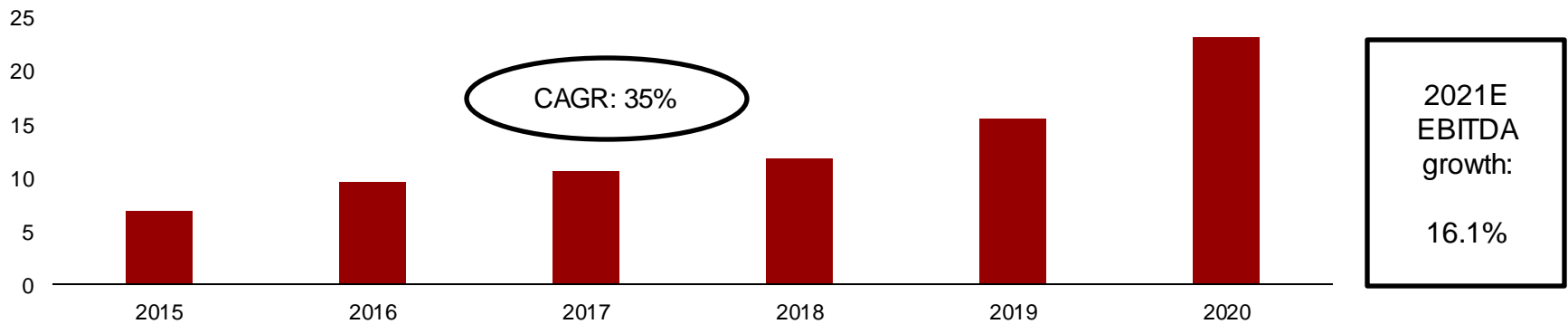
Source: Company Filings, Bloomberg, UBS, FT

T-Mobile leverage had been improving vis-a-vis industry averages, helped by exceptional growth

Debt to T12 EBITDA



EBITDA (in mm)



Additional Considerations

- Raised \$3bn to finance its spectrum expenditure
- Additional \$4.3bn EBITDA synergies to occur (total of \$6bn from Sprint acquisition)
- Shentel acquisition to be closed later in 2021 for \$1.95 bn

T-Mobile's focus on improving leverage allows it to be able to fuel more growth in the future

Source: Company Filings, Bloomberg, UBS, FT

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Valuation

T-Mobile's in a Good Spot – But is it Enough?



Significant 5G investment opportunities should see operating improvements across the board

Overview				Operating Metrics						
Company Name	Market Cap	EV	Levered Beta	Revenue growth	Gross margin	EBITDA margin	ROIC	ROA	Churn rate	Net Debt/EBITDA
	\$mm	\$mm	5-yr	2-y	LTM	LTM	LTM	LTM	LTM	
Major American Peers (\$USD)										
AT&T Inc.	\$206,626	\$393,900	0.73	0.3%	53.5%	31.3%	4.2%	2.9%	0.99%	2.8x
Verizon Communications Inc.	\$233,595	\$363,401	0.47	-1.0%	60.1%	35.5%	8.6%	5.9%	1.00%	2.6x
Median										
Small American Peers (\$USD)										
Shenandoah Telecommunications Company	\$2,167	\$2,732	0.39	1.7%	58.4%	40.1%	4.1%	3.1%	1.92%	1.7x
United States Cellular Corporation	\$2,727	\$4,960	0.69	0.9%	55.6%	21.7%	1.7%	1.4%	1.05%	2.1x
Median										
Canadian Peers (\$CAD)										
Rogers Communications Inc.	\$29,937	\$48,710	0.33	-4.0%	42.1%	40.4%	6.7%	5.3%	1.11%	3.2x
BCE Inc.	\$49,743	\$80,185	0.30	-1.3%	41.8%	41.8%	6.8%	5.3%	1.39%	2.7x
Telus Communications Inc.	\$33,654	\$53,886	0.56	4.3%	36.6%	18.8%	5.3%	4.1%	1.09%	4.0x
Shaw Communications Inc.	\$11,372	\$17,154	0.44	0.9%	44.5%	39.0%	6.2%	4.7%	1.81%	2.4x
Median										
T-Mobile	\$148,087	\$244,909	0.57	5.3%	59.6%	34.5%	4.8%	4.1%	1.49%	3.5x

T-Mobile's merger synergies should shoot margins to record highs, and applying T-Mobile's best in-class churn rate to Sprint's will drop the blended churn to match AT&T and Verizon

Source: Capital IQ, Company Filings

T-Mobile was the only major US player to beat consensus on both customer additions and profitability

Overview			Valuation Metrics					
Company Name	Market Cap	EV	EV/EBITDA		EV/Sales		EV/postpaid	EV/prepaid
	\$mm	\$mm	LTM	FY2021E	LTM	FY2021E	LTM	LTM
Major American Peers (\$USD)								
AT&T Inc.	\$206,626	\$393,900	6.6x	7.2x	2.3x	2.3x	5.2x	21.8x
Verizon Communications Inc.	\$233,595	\$363,401	7.2x	7.5x	2.8x	2.7x	4.0x	89.2x
Median			6.9x	7.4x	2.6x	2.5x	4.6x	55.5x
Small American Peers (\$USD)								
Shenandoah Telecommunications Company	\$2,167	\$2,732	8.3x	39.9x	4.2x	11.4x	3.2x	10.0x
United States Cellular Corporation	\$2,727	\$4,960	4.0x	5.8x	1.2x	1.2x	1.1x	9.8x
Median			6.2x	22.8x	2.7x	6.3x	2.2x	9.9x
Canadian Peers (\$CAD)								
Rogers Communications Inc.	\$29,937	\$48,710	8.1x	7.7x	3.4x	3.2x	5.2x	34.7x
BCE Inc.	\$49,743	\$80,185	8.4x	8.1x	3.5x	3.4x	8.8x	100.5x
Telus Communications Inc.	\$33,654	\$53,886	10.8x	8.9x	3.5x	3.2x	6.0x	30.0x
Shaw Communications Inc.	\$11,372	\$17,154	7.6x	7.0x	3.2x	3.1x	10.9x	48.6x
Median			8.3x	7.9x	3.5x	3.2x	7.4x	41.7x
T-Mobile	\$148,047	\$244,909	8.8x	9.0x	3.6x	3.1x	3.1x	11.9x
Premium (discount) to major American peers			27.5%	22.4%	41.2%	24.0%	-33.1%	-78.5%
Premium (discount) to small American peers			43.1%	-60.6%	33.3%	-50.9%	41.4%	20.6%
Premium (discount) to Canadian peers			6.7%	13.9%	4.3%	-3.1%	-58.2%	-71.4%

1

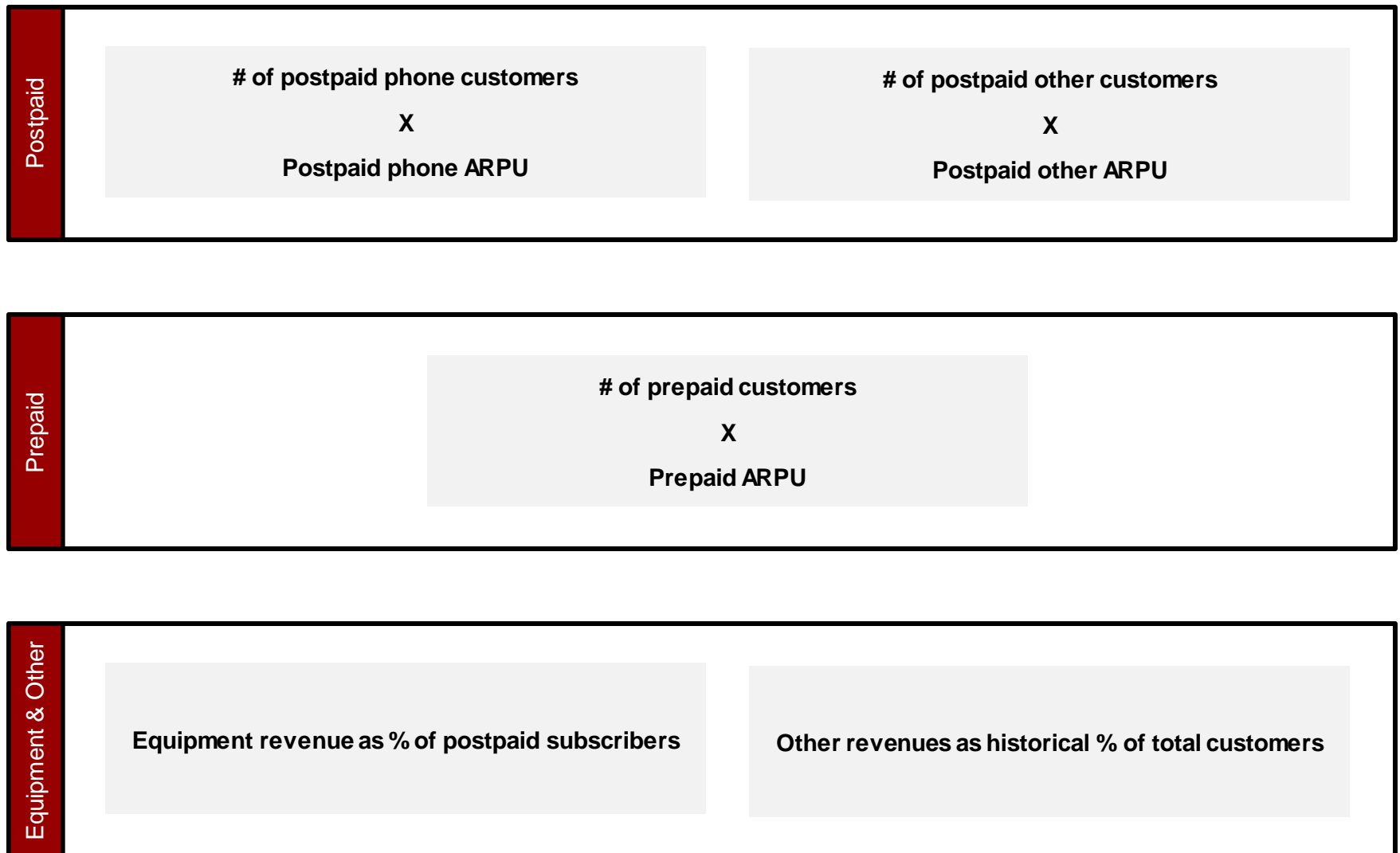
T-Mobile trades at premium on EBITDA, but not by customer value – despite having higher ARPA than comps

2

T-Mobile's adding net customers faster than comps with lower CAC

Source: Capital IQ, Company Filings

We simply break down the segments and build revenue



Source: Company Filings, Company Websites

Heavy spending on capex in short- and mid-term to gain spectrum and scale 5G offering quickly

Projected Free Cash Flows

DCF Model	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Revenue	\$79,236	\$85,450	\$89,467	\$92,888	\$95,620	\$98,436	\$100,316	\$102,237	\$104,198	\$106,201
Less: cost of revenue and operating expense:	(\$53,881)	(\$58,106)	(\$60,838)	(\$63,164)	(\$65,022)	(\$66,937)	(\$68,215)	(\$69,521)	(\$70,854)	(\$72,217)
EBIT	\$25,356	\$27,344	\$28,630	\$29,724	\$30,599	\$31,500	\$32,101	\$32,716	\$33,343	\$33,984
Less: operating taxes on EBIT	(\$5,325)	(\$5,742)	(\$6,012)	(\$6,242)	(\$6,426)	(\$6,615)	(\$6,741)	(\$6,870)	(\$7,002)	(\$7,137)
NOPAT	\$20,031	\$21,602	\$22,617	\$23,482	\$24,173	\$24,885	\$25,360	\$25,845	\$26,341	\$26,848
Add: D&A	\$17,432	\$17,944	\$18,564	\$19,042	\$19,602	\$20,179	\$20,364	\$20,754	\$21,152	\$18,054
Less: capex	(\$31,640)	(\$21,362)	(\$21,472)	(\$21,364)	(\$21,515)	(\$21,656)	(\$21,568)	(\$17,380)	(\$17,714)	(\$18,054)
Less: increases in working capital	(\$1,589)	\$1,065	\$1,458	(\$2,018)	(\$144)	(\$93)	(\$79)	(\$63)	(\$65)	(\$44)
Unlevered free cash flows	\$7,412	\$17,119	\$18,252	\$23,178	\$22,404	\$23,501	\$24,235	\$29,282	\$29,845	\$26,891
PV of UFCF	\$6,162	\$15,518	\$15,391	\$18,181	\$16,348	\$15,952	\$15,303	\$17,200	\$16,307	\$13,668

Sensitivity Analysis

		WACC				
		6.50%	7.00%	7.50%	8.00%	8.50%
Terminal Growth	1.00%	156.5	147.6	139.1	130.9	123.1
	1.25%	160.6	151.5	142.8	134.5	126.5
	1.50%	164.9	155.6	146.7	138.2	130.1
	1.75%	169.4	159.9	150.8	142.2	133.9
	2.00%	174.3	164.6	155.3	146.4	137.9
		WACC				
		6.50%	7.00%	7.50%	8.00%	8.50%
Terminal EBITDA Multiple	5.0x	138.5	130.4	122.6	115.2	108.1
	5.5x	149.8	141.1	132.9	125.0	117.5
	6.0x	161.0	151.9	143.2	134.9	126.9
	6.5x	172.3	162.7	153.5	144.7	136.3
	7.0x	183.5	173.4	163.7	154.5	145.6

Bridge to Equity

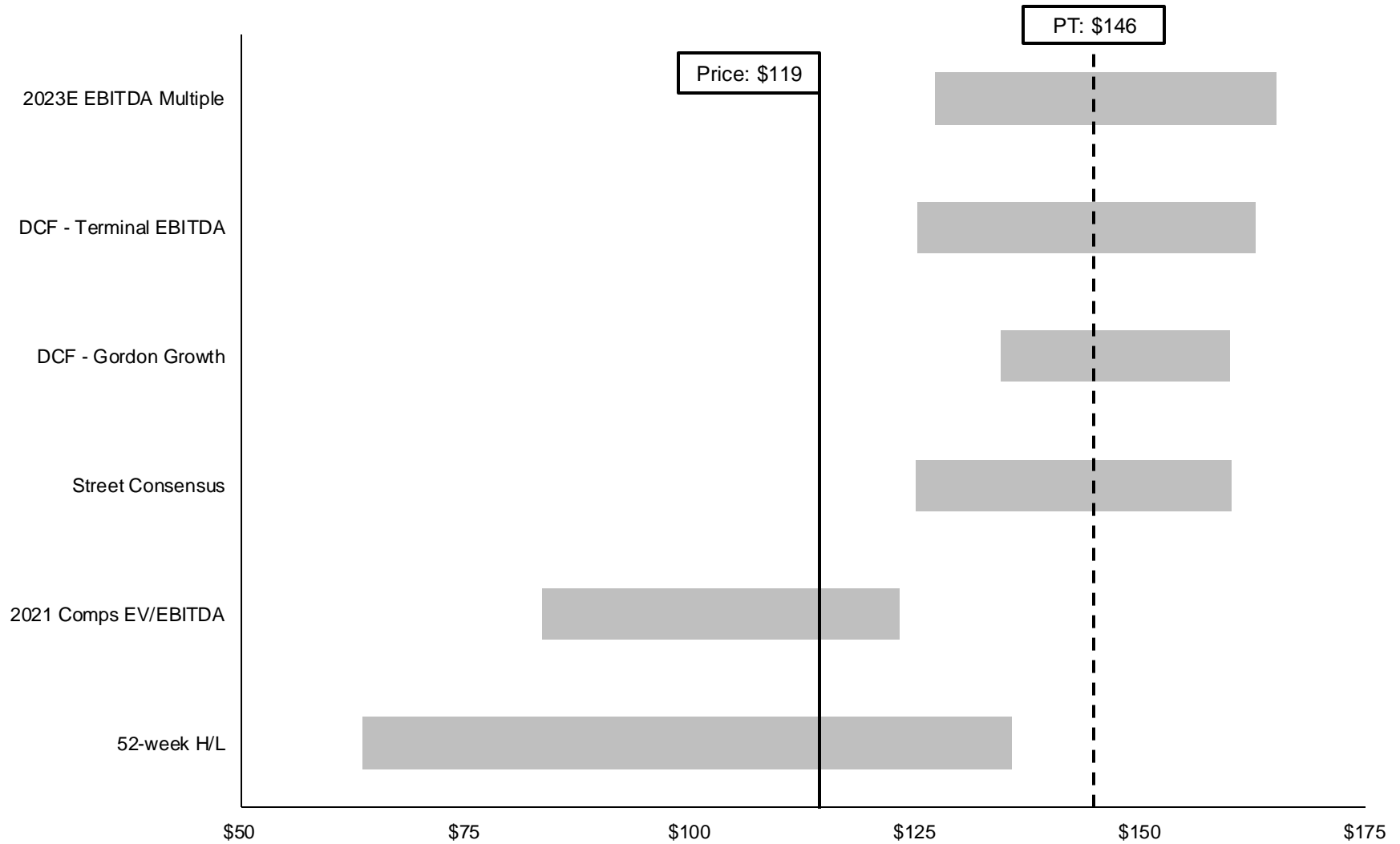
Gordon Growth Method

Terminal growth rate	1.50%
Terminal year EBITDA	\$52,038
Implied enterprise value	307,443
Add: cash & equivalents	10,115
Less: debt & equivalents	135,403
Equity value	182,155
Fully diluted shares outstanding (mm)	1,241.8
Implied share price	146.7

T-MOBILE US, INC. (XNAS:TMUS)	119.2
Implied upside (downside)	23%
Implied EBITDA exit multiple	6.17x
Implied current multiple	11.05x

Source: Company Filings, Capital IQ

T-Mobile's ahead of comps, but we believe the premium misrepresents its fundamental value



We recommend a BUY with a 3-year price target of \$146, for implied upside of 23%

Source: Capital IQ, DCM, Yahoo! Finance

Desautels Capital Management

Honours in Investment Management

Risks and Catalysts

Bull or Bear, That's the Question





Internal Considerations

Management Changes



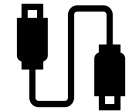
T-Mobile March Analyst Day



Integration Issues or Delays



Accelerated Synergy Realization



External Considerations

Threat of New Entrants



Overleveraged Competitors



Negative Economic Climate



Government Incentives



Why buy the stock now rather than a month from now?

Desautels Capital Management

Honours in Investment Management

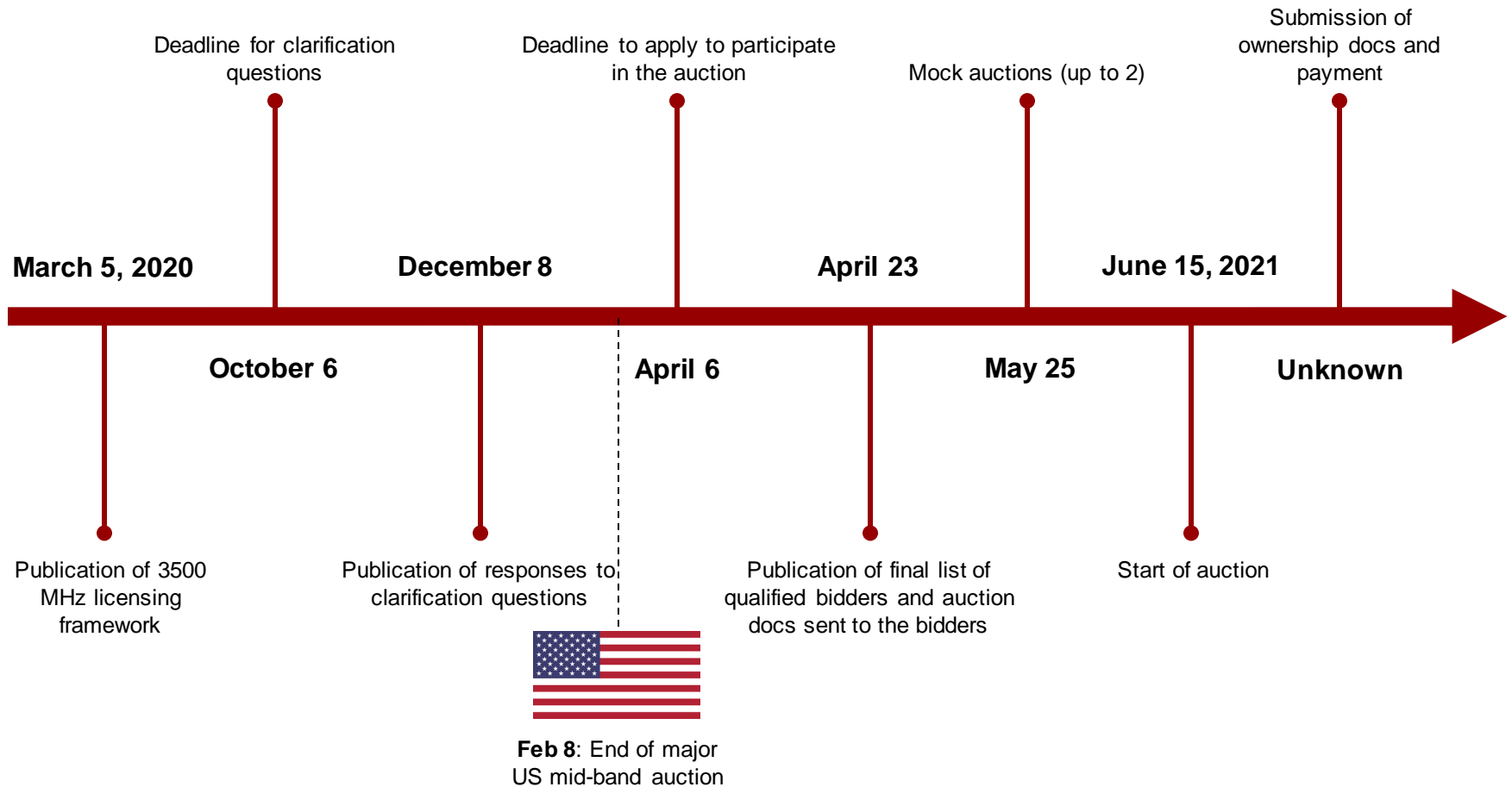
Appendix

The Analysts' Slides



Example of a Spectrum Auction – Canadian 3500MHz Band

The mid-band is the most important band for consumer services because it's the one most devices will function on



Major US 5G mid-band auction is almost over, with 5,684 licenses up for grabs, \$81bn in value bid, and assignment phase beginning Feb. 8

Source: FCC, Government of Canada