

# Communication Services Update

Presented by:

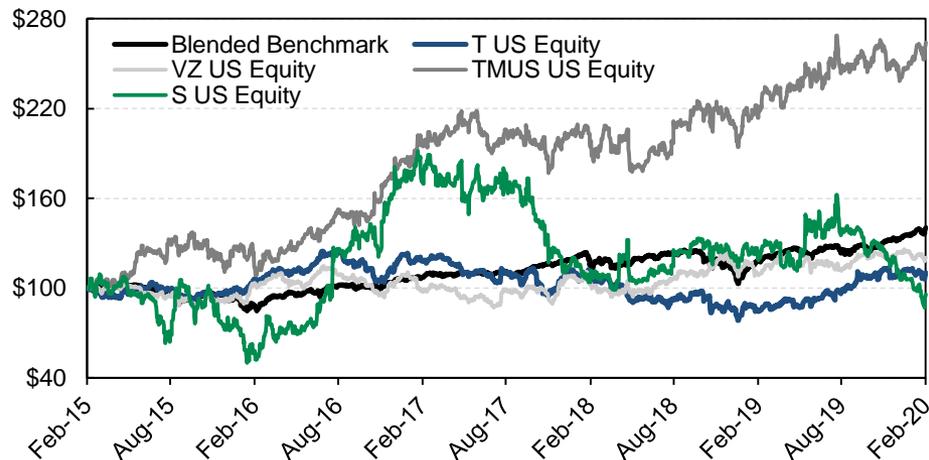
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# Industry Overview

## Introduction

- Telecommunications is a dynamic industry categorized by the challenge of balancing historical wireline businesses and capturing new growth
- Recent growth has been primarily driven by high consumer data consumption demand leading to a scramble to capture the sustained wireless surge
  - Extreme competition in wireless and the effective homogenization of service coverage has led to pricing and competitive pressure
- 5G is touted as the major long-term driver for growth given future requirement IoT and autonomous vehicles
  - Current launch may be sluggish given 5G poses a more difficult business case than the 4G expansion
- Telecoms industry remains subject to high capex due to maintenance obligations, improvement of grids, and ramping up of 5G roll-out
- Credit metrics for 2020 are looking slightly negative; however, the sustained low rate environment has seen uplift for the industry

## U.S. Telecoms Historical Trading Performance (Indexed to \$100)



## Key 2020 Themes



**Disruptive Technologies and 5G Roll-out**



**Overhang from Potential Sprint / T-Mobile Merger**

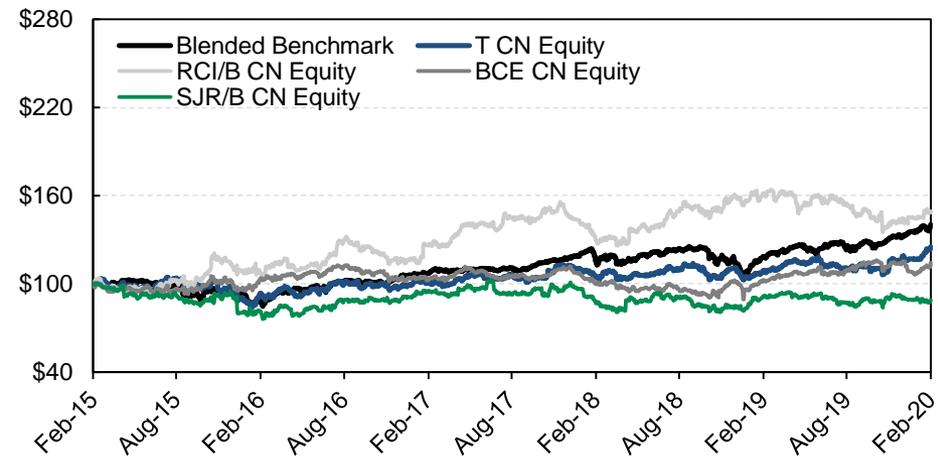


**Increasing Wireless Competition Driven by Consumer Data Demand**



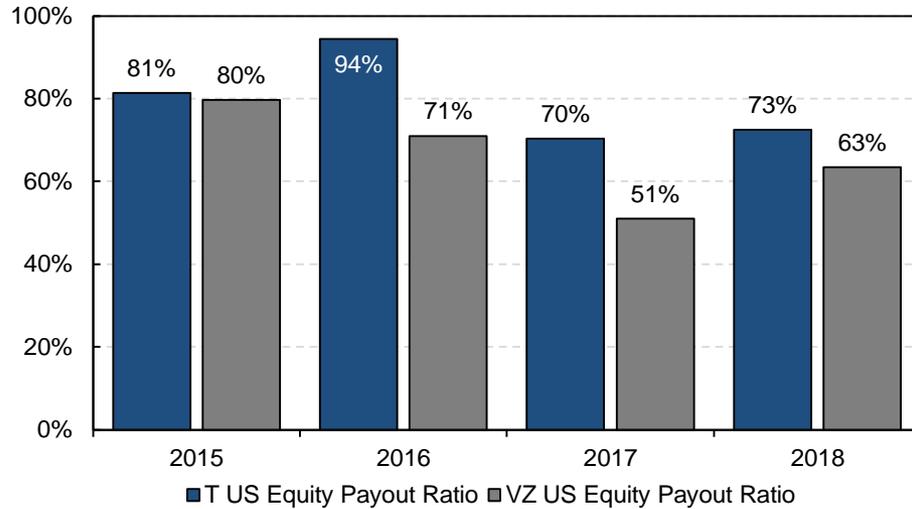
**Lower for Longer Interest Rates**

## Canadian Telecoms Historical Trading Performance (Indexed to \$100)

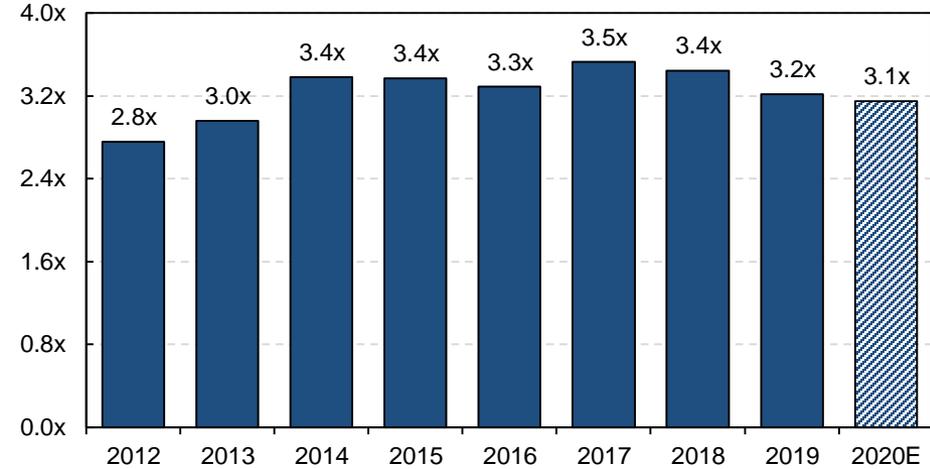


# Industry Overview

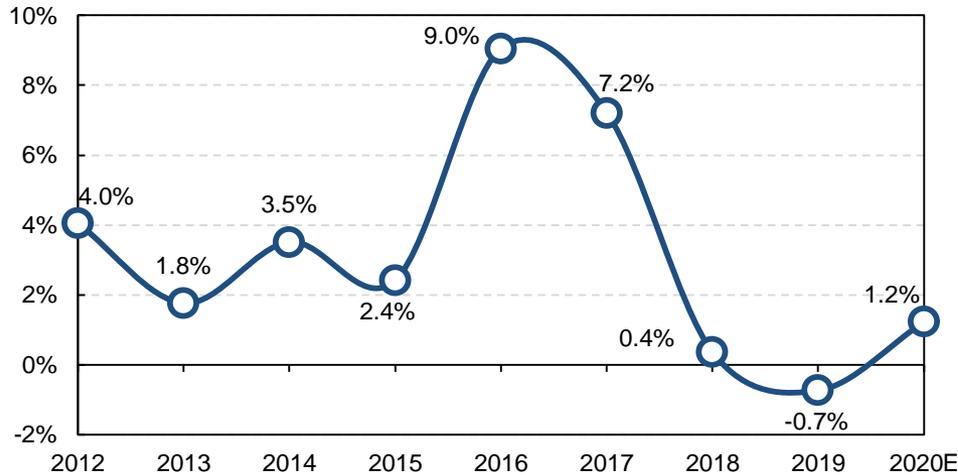
## Major U.S. Telecom Historical Payout Ratios



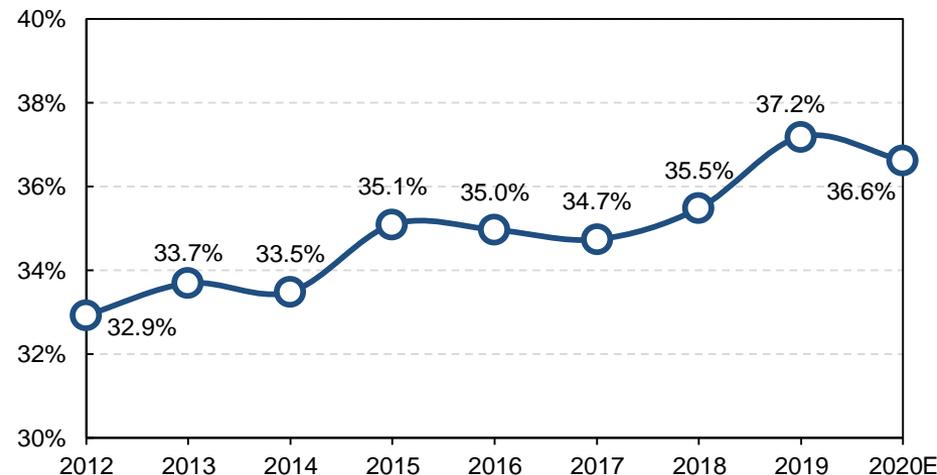
## Industry Total Debt to EBITDA



## Industry Revenue Growth Rates



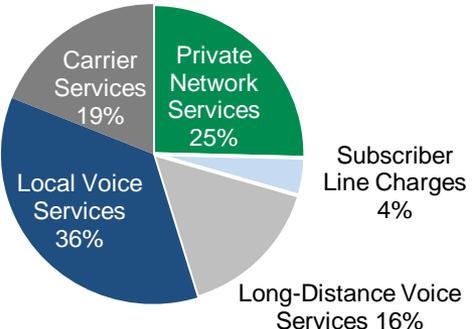
## Industry EBITDA Margin



# Industry Overview

## Wired Telecommunications Overview

- Legacy telecommunications business consisting of the physical wire infrastructure used to transmit data
- Main activities include providing television, internet access, and local and international telephone services
- Remains in secular decline with the primary growth drivers coming from the roll-out of fibre optic networks to provide fast speed and larger bandwidth
- Represents a mature, high-fixed cost business that generates cash and represents an optimization problem for provider
  - Providers bundle products to maximize price achieved by wireline businesses

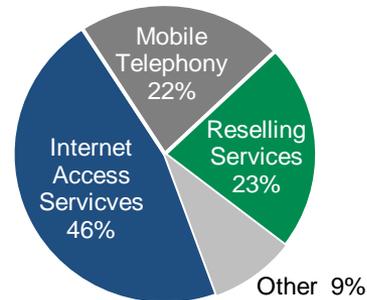


### Key Wired Statistics

Total 2019 Revenue	\$73.5B
Annual 2014 – 2019 Growth	-5.3%
Annual 2019 – 2024 Growth	-0.8%
Profit Margin 2019	9.6%

## Wireless Telecommunication Overview

- Growth orientated telecommunications business focused on transmitting text, voice, and video communication information over wireless networks
- Revolutionized by the extreme wireless data demand caused by smartphones and the transition to 4G wireless data and the long-term evolution standard
- Wireless demand is expected to persist with improving technology incensing even more switching from traditional wireline technologies
- Although industry sales are expected to increase 3.2% annually from 2019 – 2024, the competitive landscape is highly saturated causing pricing pressure
  - Becoming increasingly important to compete on customer service and innovated offering to maintain market share and reduce customer churn



### Key Wireless Statistics

Total 2019 Revenue	\$289.9B
Annual 2014 – 2019 Growth	0.6%
Annual 2019 – 2024 Growth	3.2%
Profit Margin 2019	8.6%

# Industry Overview

## 5G Overview

- 5G stands for the “fifth generation” of telecom network standards, and is characterized by extremely fast speeds, higher connection density, and much lower latency
- Historically, 2G transmitted voice calls, 3G allowed for video streaming and GPS, 4G increased speed and enabled wearables, and 5G will enable IoT and autonomous vehicles
- Although many major providers have plans to launch nationwide 5G coverage in 2020, opportunities to monetize remain unclear
- When the shift to 4G occurred, there was meaningful wireless connectivity that resulted in monumental demand increases in data and wireless services
  - Although 5G offers a myriad of benefits, much of the initial wireless shift has occurred and the change in quality versus 4G is less dramatic
- Long-run opportunities for 5G remain promising; however, there are no clear plans on how providers will effectively monetize in the short-run
  - With current 5G dynamics, many businesses cannot justify a business case until it matures as a technology

## Major U.S. Telecoms 2020 5G Strategies



- Rolled-out low-band 5G network using 850 MHz in 19 markets
- Primary effort will be on a low-band nationwide rollout (200mm POPs) in H120
- Network has high LTE capacity and has thousands of 5G software upgradable cell sites
- More focused on incremental benefits (faster speed, capacity, lower latency) for consumers
- Reserving 5G+ mmWave service for enterprise and industrial applications



- 5G live in 31 markets using ~400 MHz of mmWave spectrum
- Widespread U.S. coverage layer expected 2H20 with 850 MHz allocation
- Will use Dynamic Spectrum Sharing (DSS) in 2020 in 850 MHz band
- DSS will be easiest path to 5G given it avoids stranding spectrum capacity when limited data
- Launched 5G Home in Chicago in October 2016

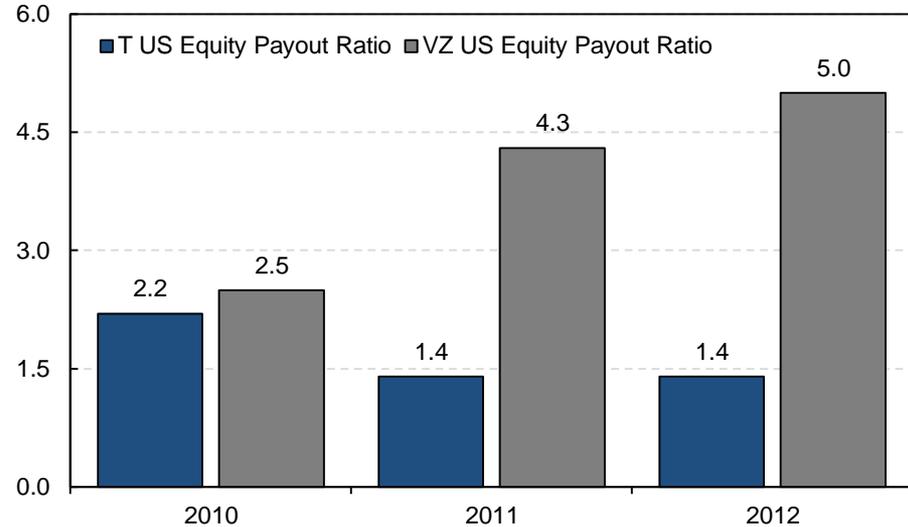


- First carrier to launch nationwide 5G service on its 600 MHz spectrum
- Has allocated 20 MHz of ~30 MHz nationwide for 5G which is a high capacity on a largely empty network
- Using large 5G network as a marketing tool
- Will launch 15 new 5G devices that can use multiple spectrum bands (include iPhone and Samsung Galaxy)



- Deploying 5G using 60 MHz of 2.5 GHz to cover 16mm POPs
- Additional roll-out is not announced, but is expected in 2020
- Has limited additional spectrum holdings to enable re-farming of bands
- If merger with TMUS doesn't close, could still see 5G sharing between the companies

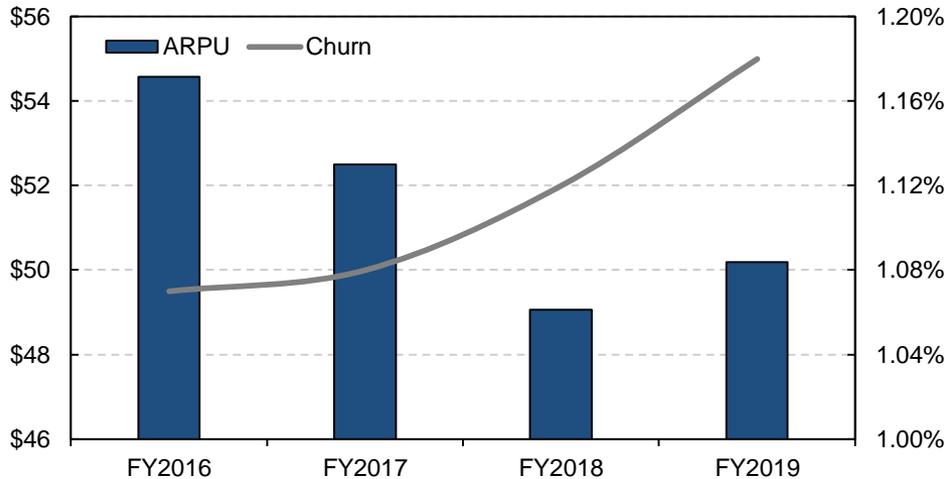
## Wireless Postpaid Additions Post Verizon 4G Launch (mm)



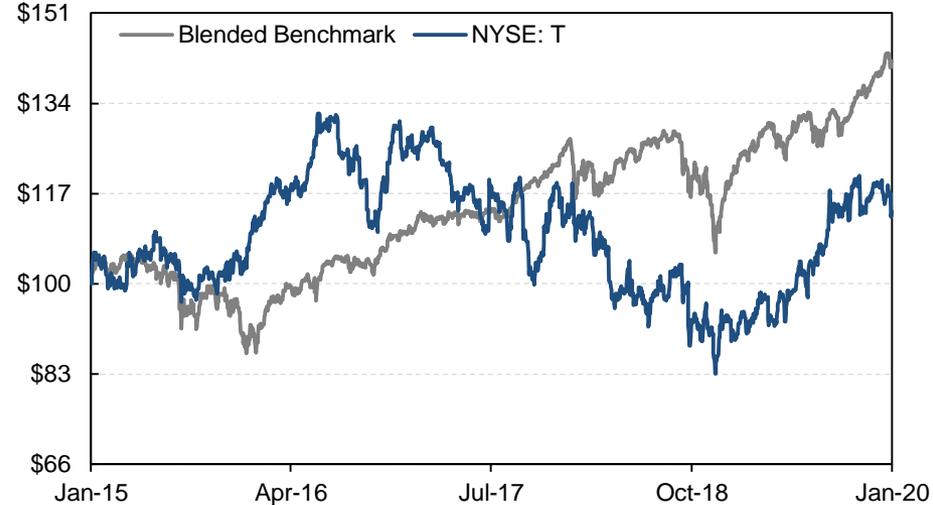
## Business Description

- AT&T Inc. (NYSE: T) is a telecommunications company that provides media and technology services globally
- T operates through four segments, Communication, WarnerMedia, Latin America, and Xandr
- Communications segment offers wireless and wireline telecom, video, and broadband services to consumers
- WarnerMedia business segments include, Home Box Office (HBO), Turner, and Warner Bros
  - Through Warner, T develops, produces, and distributes feature films, television, gaming and other content
- Turner sells advertising through its networks and primarily operates multichannel basic TV networks
- The Latin America segment offers wireless services in Mexico and entertainment services in Latin America
- The Xandr segment utilizes AppNexus, an advertising technology, and was acquired in 2018 to provide advertising services

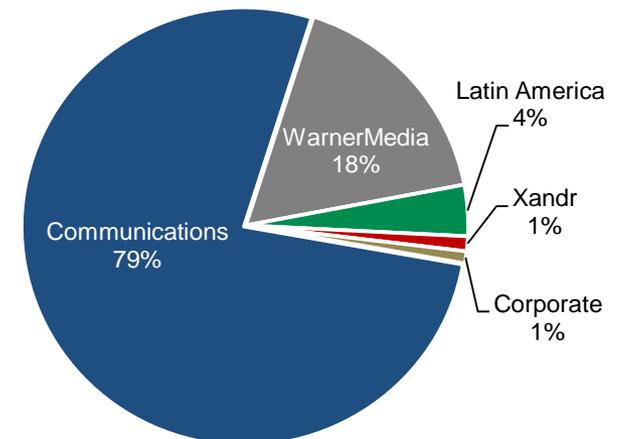
## Consumer and Business Postpaid ARPU and Churn



## Past 5 Years Trading Performance (Indexed to \$100)



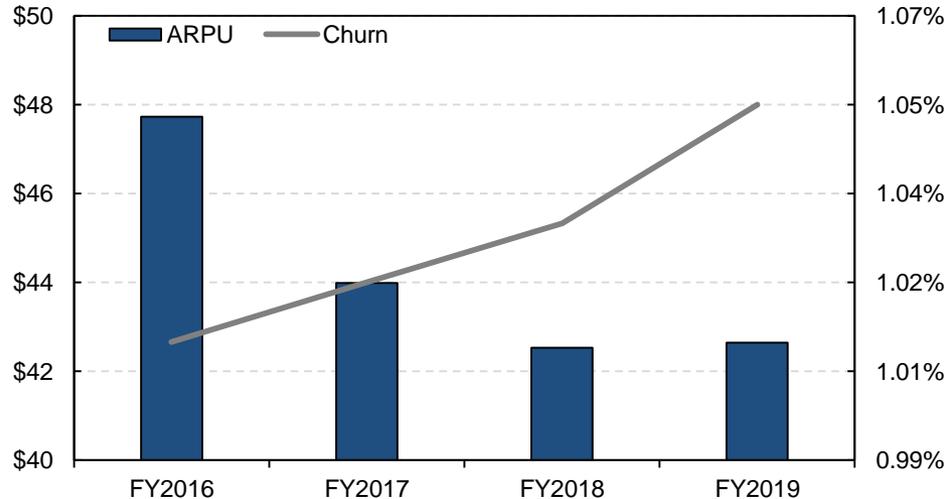
## Disaggregation of Revenue



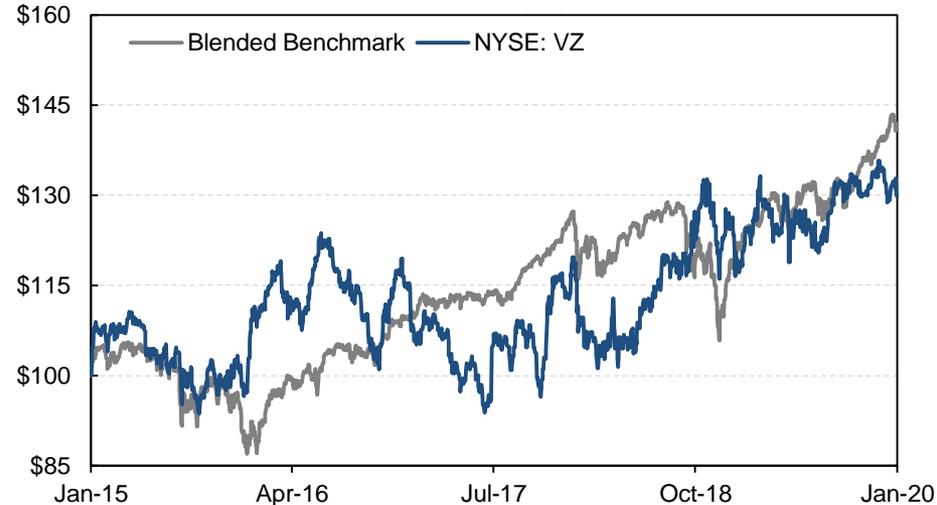
## Business Description

- Verizon Communications Inc (NYSE: VZ) is an integrated telecommunications company providing wireline voice and data services, wireless services, Internet services, and published directory information
- VZ is the number one wireless phone service in the U.S. and offers the largest 4G LTE network and serves more than 118 million connections
- Business segment primarily provides products and services to businesses, governments, and carriers throughout the U.S.
  - U.S. federal government represents a primary customer which utilize business phone lines, data services, telecommunications equipment, and payphones
- Consumer segment offers wireless and wireline communication services and products to individual consumers
- Recent acquisitions of AOL and Yahoo aim to aid the Company's competencies in video and advertising

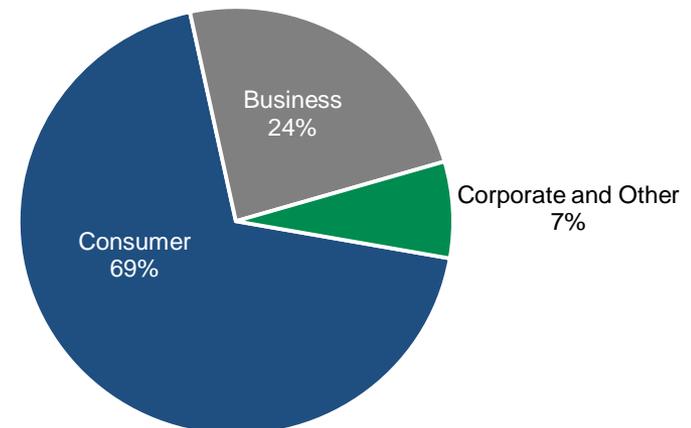
## Retail Postpaid ARPU and Churn



## Past 5 Years Trading Performance (Indexed to \$100)



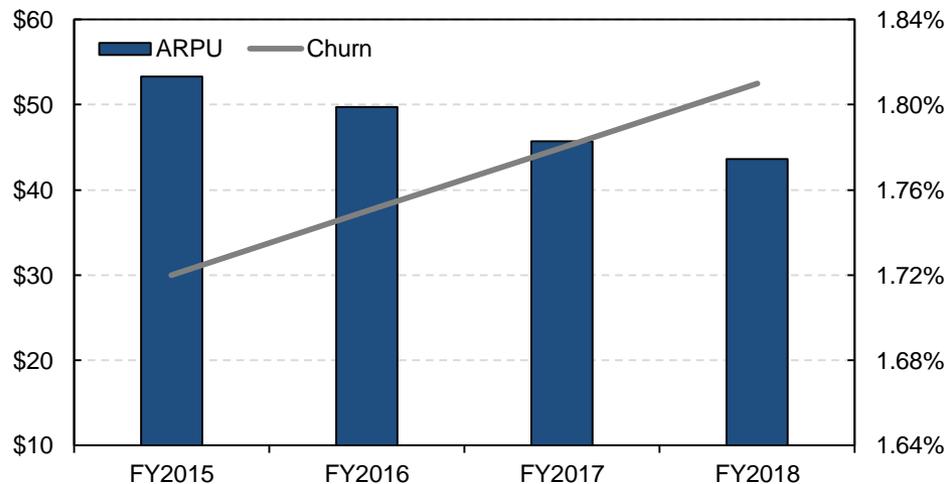
## Disaggregation of Revenue



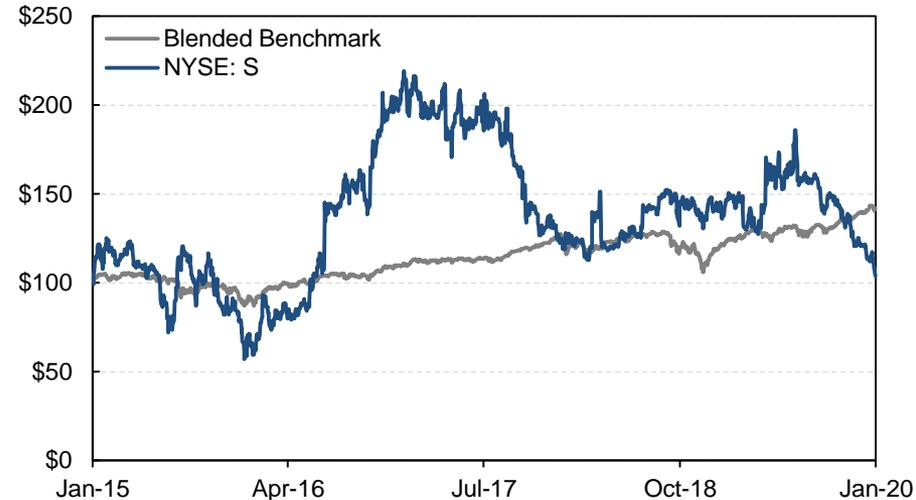
## Business Description

- Sprint Communications (NYSE: S) offers a comprehensive range of wireless and wireline communications products and services to consumers, businesses, government
- S is the 4th largest providers of mobile phone service in the U.S, and has subscribers in all 50 states, Puerto Rico, and U.S. Virgin Islands
- Offers postpaid services under its own brand and prepaid mobile access through its Virgin Mobile USA and Boost Mobile, which target younger demographics
- Has overhang from a large amount of debt (~\$33B) and is pulling from its revolver, which is restricting S from paying a dividend
- While S was ready to roll out a 5G network in several U.S. cities in 2018, it felt more comfortable to partner with T-Mobile (NASDAQ: TMUS), a deal the Companies announced in 2018
- Japan's SOFTBANK currently owns a large 83% of S, and would remain a major shareholder in the new entity

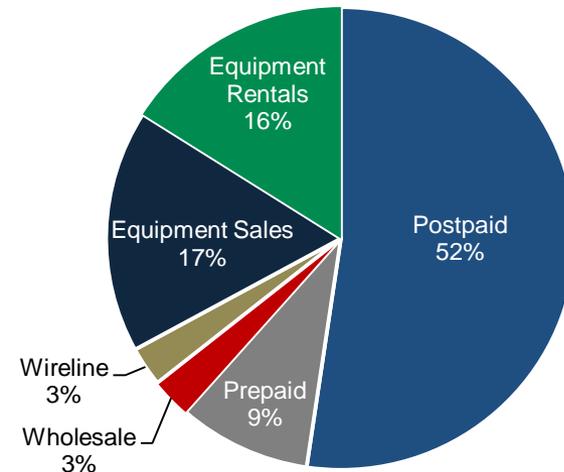
## Postpaid ARPU and Churn



## Past 5 Years Trading Performance (Indexed to \$100)



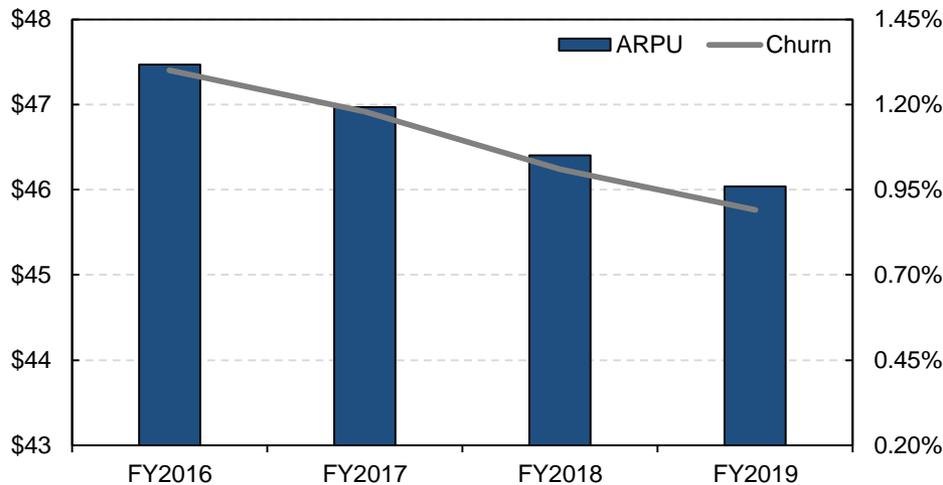
## Disaggregation of Revenue



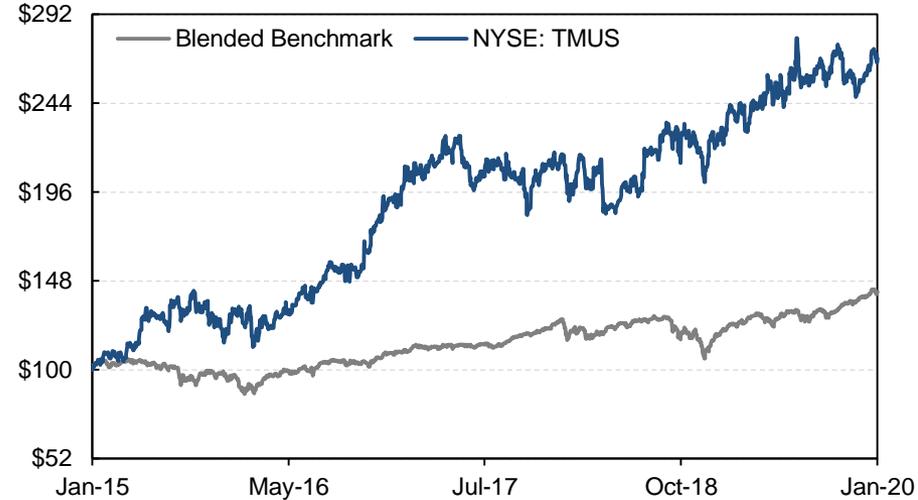
## Business Description

- T-Mobile US (NASDAQ: TMUS) provides services, devices, and accessories across its brands T-Mobile and Metro™ by T-Mobile (formerly MetroPCS)
- Wireless services are provided to ~79.7 million postpaid, prepaid, and wholesale customers
- A recent acquisition of Layer3 TV was completed in 2018 for the purpose of advancing the Company's video strategy
  - Layer3 TV has essentially allowed TMUS to offer its own TV services
- Branded postpaid services provide wireless communication services for phones, and mobile broadband devices
- Branded prepaid provides wireless communication services
  - Customers are required to pay in advance TMUS offers prepaid services through both its brands
- Equipment sales include sales of phones, tablets, wearable, and accessories
- Wholesale is operated on the T-Mobile network but is managed by wholesale partners, including Machine-to-Machine and Mobile Virtual Network Operators

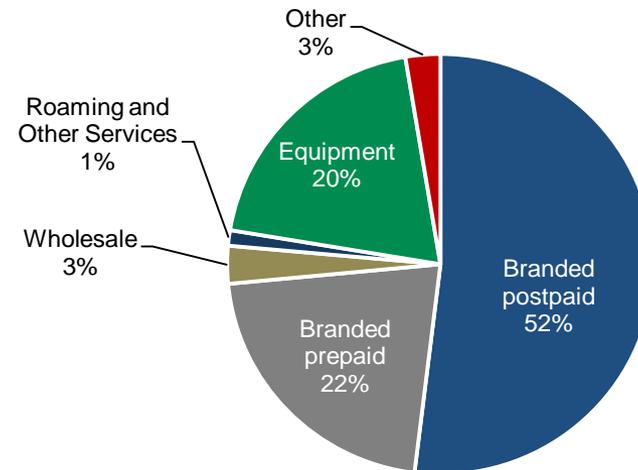
## Branded Postpaid Mobile ARPU and Churn



## Past 5 Years Trading Performance (Indexed to \$100)



## Disaggregation of Revenue



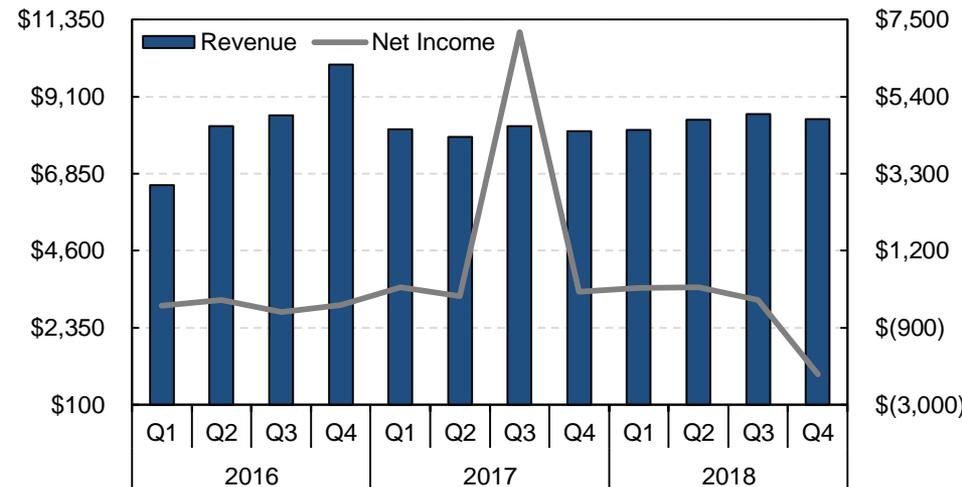
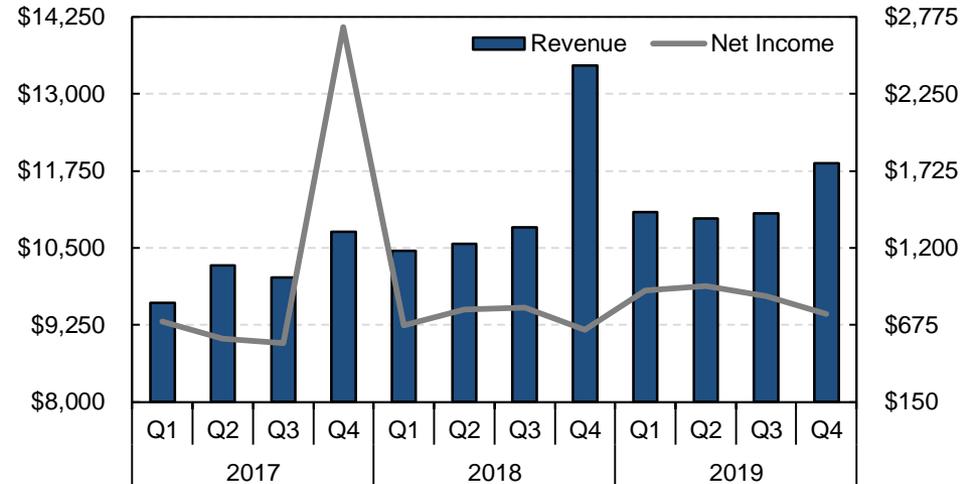
# Merger between T-Mobile and Sprint



## Important details

- As of April 29, 2018 TMUS entered into a Business Combination Agreement to merge with S, a \$26.5B deal
- June 11, 2019 multiple attorneys filed a lawsuit against TMUS, Deutsche Telekom, SOFTBANK, and S. The lawsuit claimed if the merger were to proceed it would violate Section 7 of the Clayton Act
- Section 7 of the Clayton Act prohibits mergers and acquisitions where the effect "may be substantially to lessen competition, or to tend to create a monopoly"
- While the merger will increase the reach of TMUS and S, the merged Company would still rank third against VZ and T
- On July 26, 2019 TMUS entered into an Asset Purchase Agreement with S and DISH Network Corporation (NASDAQ: DISH). S and TMUS are referred to as the sellers. This agreement essentially would have DISH purchase the Prepaid business segment of S. DISH was also to purchase the 800 MHz spectrum licenses held by Sprint
- DISH was to pay the sellers \$1.4B for the Prepaid business \$3.6B for the spectrum licenses
- Also on July 26, 2019 the Department of Justice (DOJ) and five state Attorneys General filed an action that would resolve previous objections of the merger. Since, 5 additional states have joined the action. Approval has been granted for the merger from 18 or the 19 state public utility commissions.
- TMUS attempted to argue S's subscriber and market share loss, "huge debt load" (relative to its earnings), and extremely negative cash flows will stop it from being a meaningful competitor
- In Q3 2019 filings TMUS stated "the consummation of the merger remains subject to regulatory approvals and certain other customary closing conditions. We now expect the merger will be permitted to close in early 2020"
- S recently reported Q3 2019 earnings (ended December 31, 2019) with no more recent updates throughout filings
- The Companies felt their capacity to deploy a 5G network quickly would gain regulatory approval for the merger
- TMSU and S released a video discussing what the merger would mean for the industry. Due to S's 2.5GHz spectrum and TMSU's 600MHz spectrum together, they claim, they would create the highest capacity network in U.S. history offering speeds 100x faster than what TMSU already offers

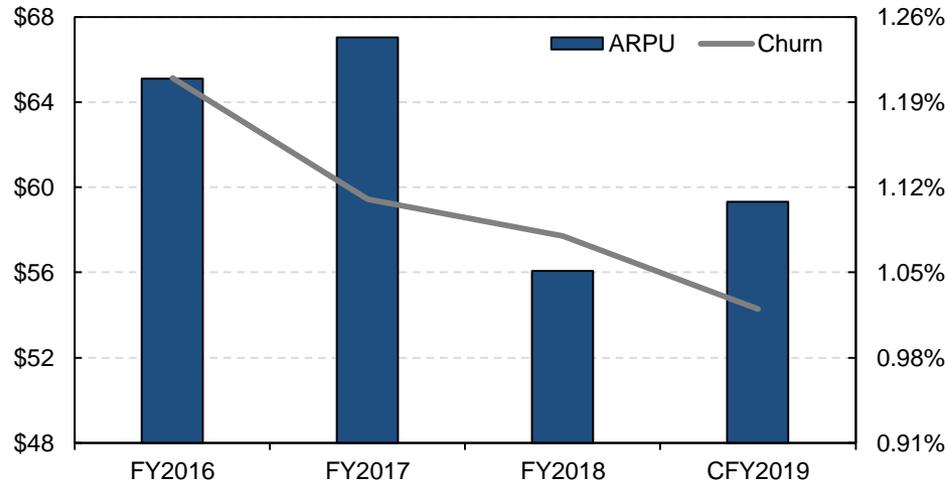
TMUS and S Revenue and Net Income (TMUS Top, S Bottom)



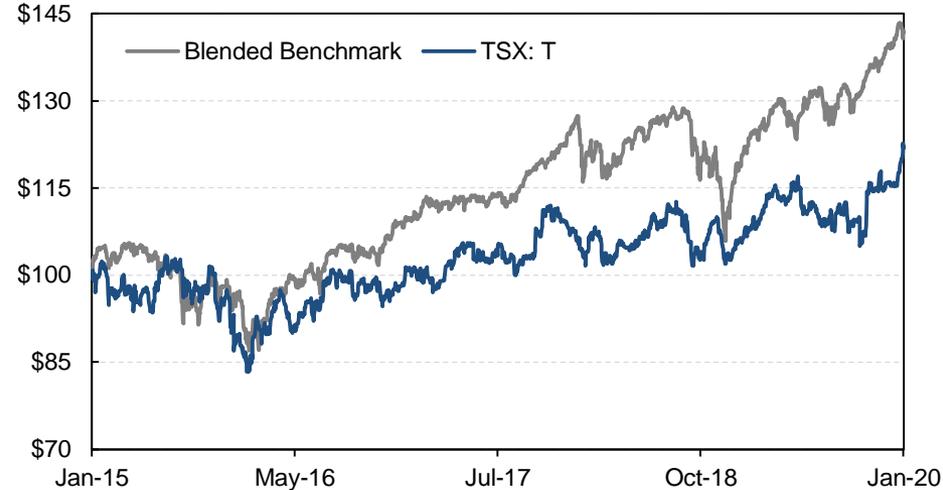
## Description and Recent Events

- TELUS Communications (TSX: T) earnings, net income, and EPS fell slightly due to lower other operating income and higher shares outstanding
- On February 4, 2020 T and its global arm TELUS International announced closing its acquisition of Competence Call Centre (CCC)
  - Hopes this acquisition will enable new go-to-market opportunities and drive growth and is TELUS International's third substantial acquisition in ~three years
- CCC is one of Europe's leading Business Process Outsourcing companies, focusing on customer care
- Believes CCC offers an established presence in the content moderation space, which includes vast, well known global brands and social media companies as its customers
- T is also focusing on expanding its Health for Good™ program which aims to bring healthcare to locals in need.
  - T, working with The Alex in Calgary, which is an addition to its vision of expanding the program from coast to coast

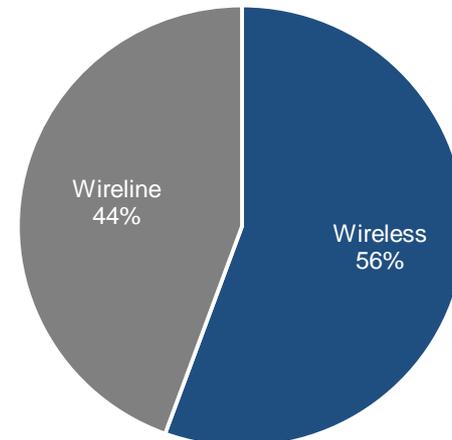
## ARPU and Churn



## Past 5 Years Trading Performance (Indexed to \$100)



## Disaggregation of Revenue



# Canadian and U.S. Comparable Companies

## U.S. Comparables

	Price (\$/sh)	Market Cap (\$/mm)	EV (\$/mm)	Net Debt (\$/mm)	Net Debt/EBITDA (x)	EV/EBITDA (x)	P/E (x)	Dividend Yield (x)
 AT&T	\$37.76	\$273,949	\$446,770	\$151,000	2.5x	8.0x	10.4x	5.4%
 Sprint	\$4.68	\$19,221	\$52,095	\$32,874	3.4x	5.3x	N/A	0.0%
 T-Mobile	\$81.97	\$70,131	\$99,032	\$28,901	2.5x	8.4x	18.4x	0.0%
 Verizon	\$59.14	\$244,582	\$375,131	\$130,549	2.8x	8.0x	11.8x	4.1%

## Canadian Comparables

	Price (\$/sh)	Market Cap (\$/mm)	EV (\$/mm)	Net Debt (\$/mm)	Net Debt/EBITDA (x)	EV/EBITDA (x)	P/E (x)	Dividend Yield (x)
 Bell	\$62.94	\$56,892	\$80,872	\$23,980	2.6x	8.6x	17.0x	5.0%
 ROGERS	\$66.31	\$26,111	\$45,547	\$19,436	3.2x	7.4x	15.7x	3.0%
 Shaw	\$26.26	\$12,980	\$16,882	\$3,902	1.8x	7.8x	19.4x	4.5%
 TELUS	\$53.56	\$32,382	\$46,169	\$13,787	2.7x	9.0x	17.9x	4.2%