

UTMCM TECHNOLOGY

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Amy Lung

Jason



Company Overview

The History of Qualcomm

Qualcomm

Qualcomm, Inc.

Company Information

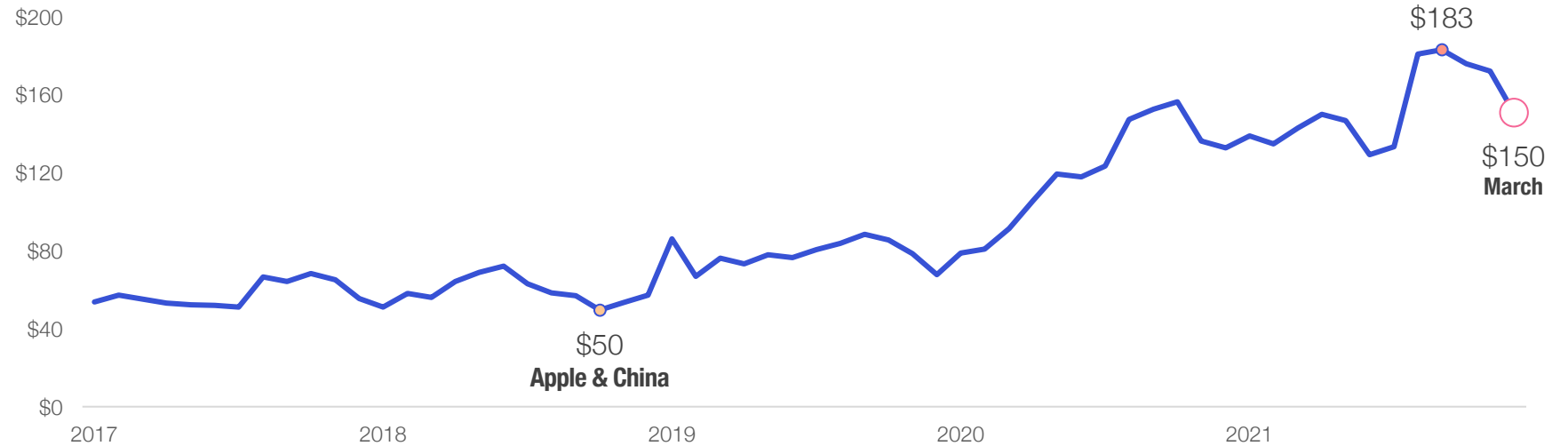
Company	Qualcomm, Inc.
Ticker	QCOM
Headquarters	San Diego, US
Industry	Technology
Revenue (Mn)	\$33,566
Employees	45,000

Company Summary

Qualcomm is the leading developer of wireless chips globally. It currently holds patents for 5G technology that can be used for phones, computers, cars and IoT.



QCOM's Stock Continues to Grow



Company History

- Founded in 1985 by Mark Jacobs and a team of students. Developed basic “CDMA” wireless tech.
- CDMA was later used for 3G and 4G, which helped connect smartphones and computers to wireless.
- With 5G, Qualcomm has been able to accelerate expansion out of handsets into auto and IoT.
- Qualcomm's stock benefitted from the activation of 5G in the US from 2019, breaking away from the S&P.

Qualcomm

Company Overview



Company Overview

Introducing the Three Segments



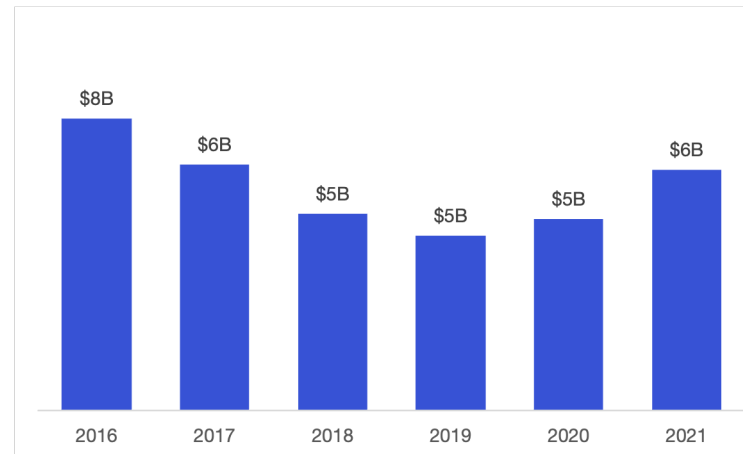
Product Development



#1 Provider of 5G Chips Globally

#1 Chip Partner in Auto & IoT

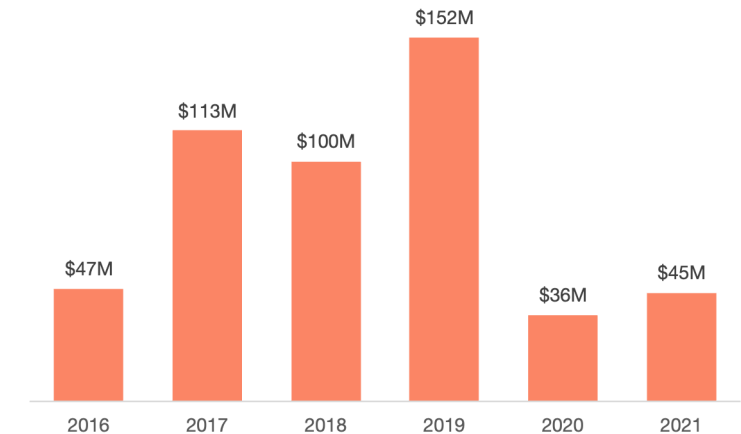
Technology Licensing



#2 In Patents Held for 5G Tech

30% Market Share in Smartphones

Innovation



#1 Partner for Tech & Auto Innovation

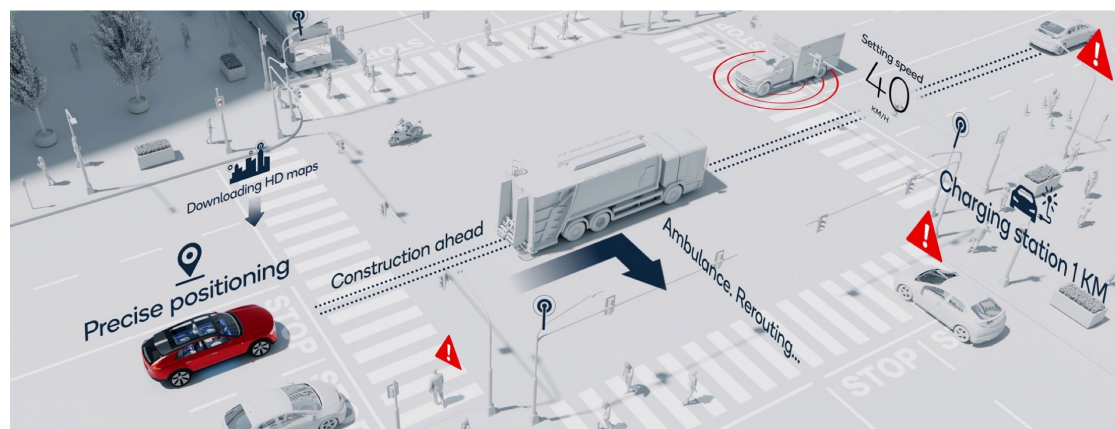
#1 Reinvestment Rate* into R&D

Company Overview

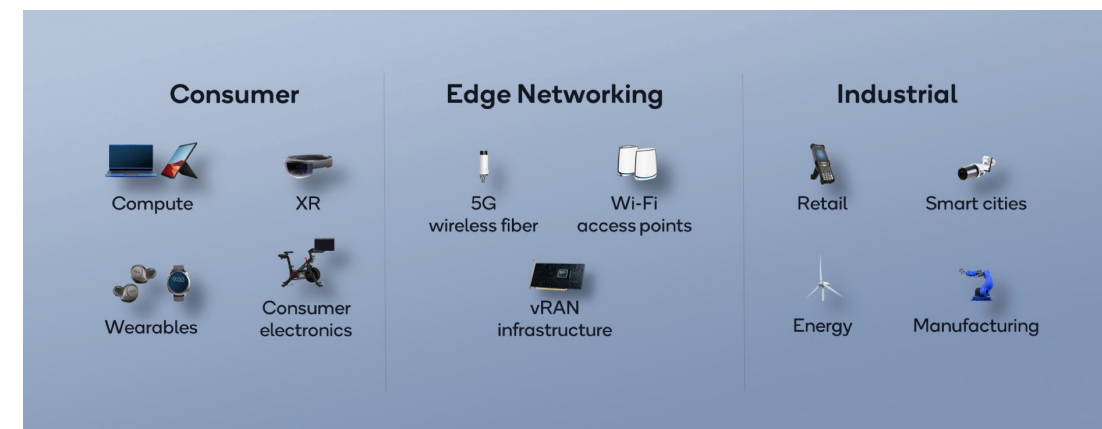
Spotlight: Automobiles and IoT

Qualcomm

Automobiles



IoT



Microsoft

SoftBank Technology

cybertrust

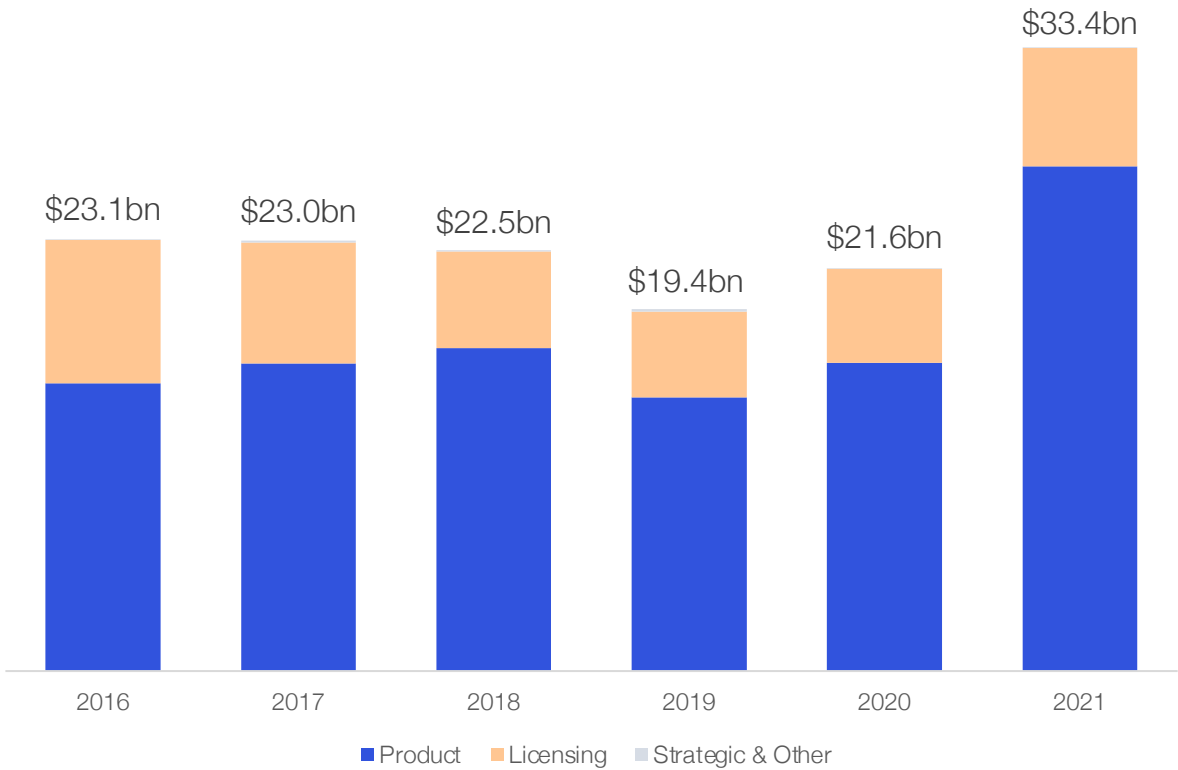
Walmart

Company Overview

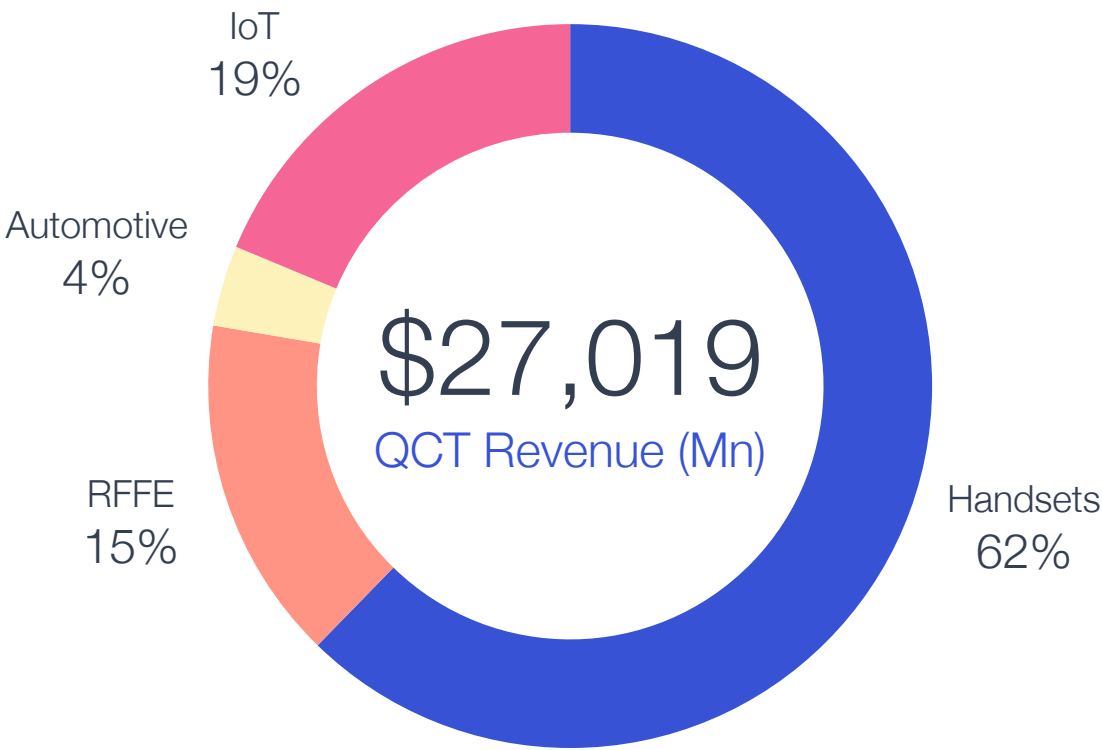
Diversification and Growth



Growth Driven by 5G and Apple



Diversifying Away from Handsets



Company Overview

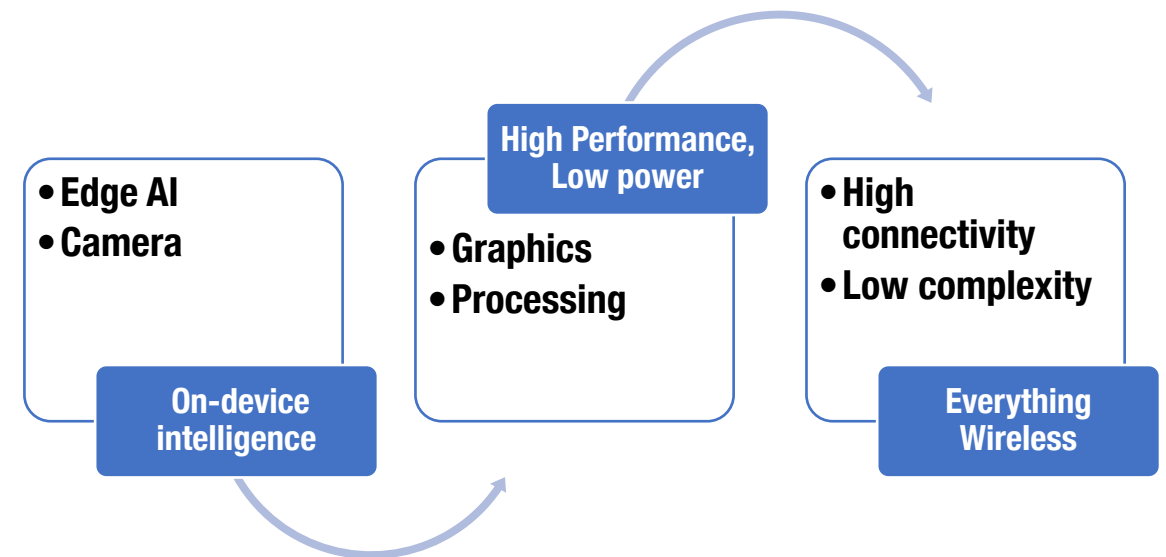
New Leadership Under Amon

Qualcomm

Management



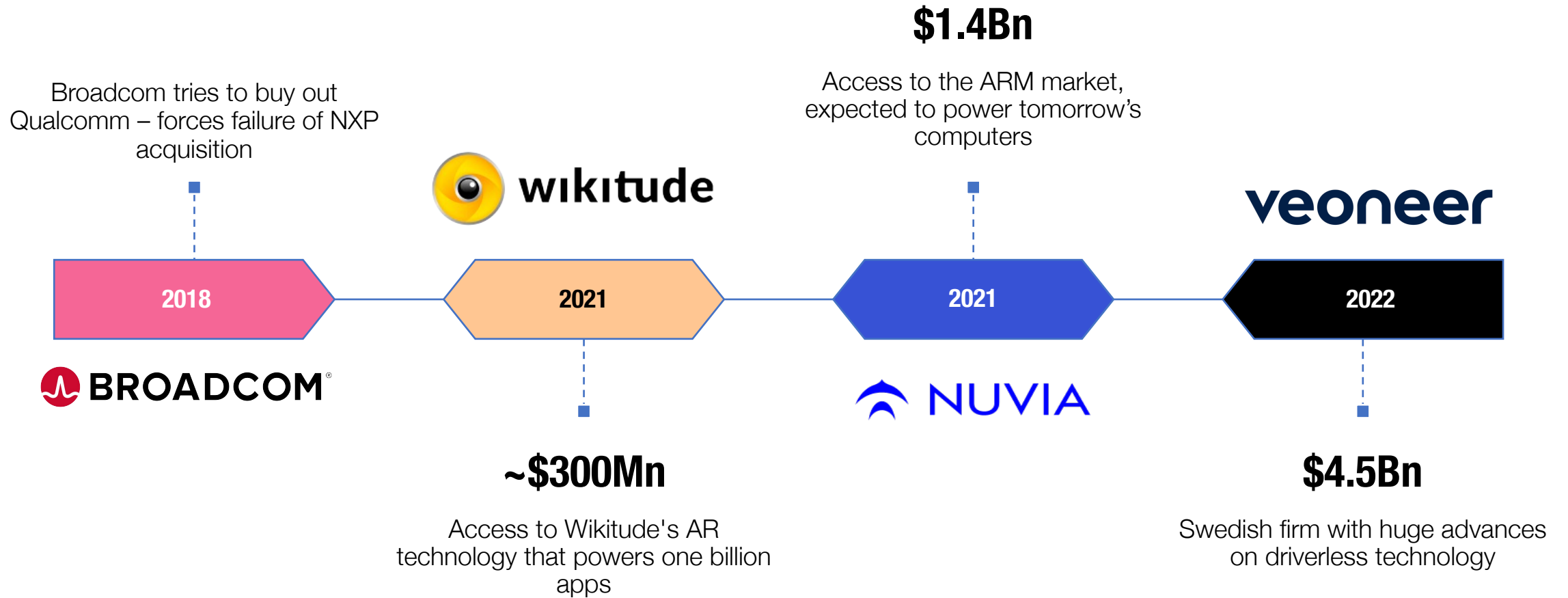
Strategy



Company Overview

Using M&A to Enter Innovative Spaces

Qualcomm



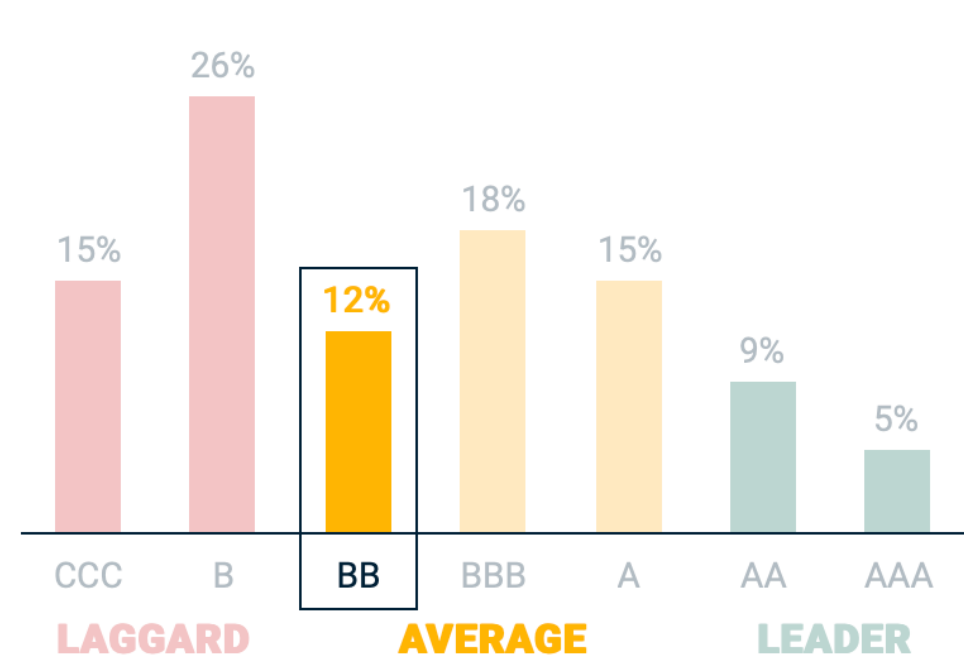
Bottom Line: Qualcomm is buying technology to advance their access to new markets.

Company Overview

Improving on the ESG Front



Qualcomm's ESG is Average but Trending Upwards



1.96° Emissions aligned with global target

50%
Board
Representation

PLATINUM
Climate Status

Out with the Old, in with the New

ESG LAGGARD	AVERAGE	ESG LEADER
Qualcomm is not a laggard on any of the Key Issues that we evaluated for its industry.	 CORPORATE BEHAVIOR	 CORPORATE GOVERNANCE
	 OPPORTUNITIES IN CLEAN TECH	 HUMAN CAPITAL DEVELOPMENT
		 CONTROVERSIAL SOURCING

Corporate Reformation completed with removal of Paul Jacobs as CEO **2021**

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Industry Overview

Industry Overview

Economic Trends Favor Qualcomm

Qualcomm

Strengths

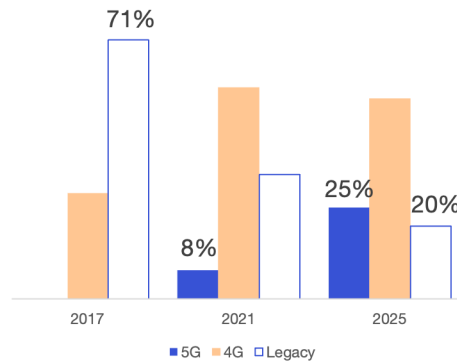
Leader in Innovation

- Early investments allow them to benefit from the 5G revolution

Strategic Alliances

- Huge partnerships with many large firms

Increasing 5G Presence Benefits Qualcomm



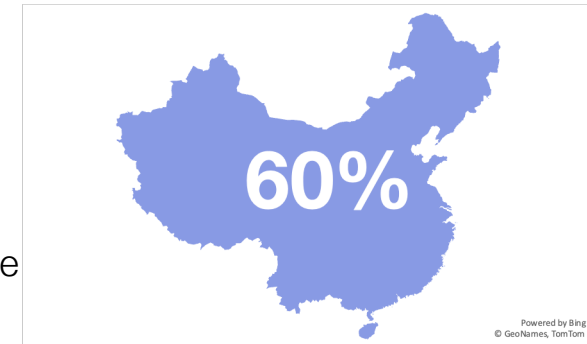
Weaknesses

Declining Phone Market Share

- Fully matured in handsets

High Chinese Exposure

- Local competitors looking to take Qualcomm's spot



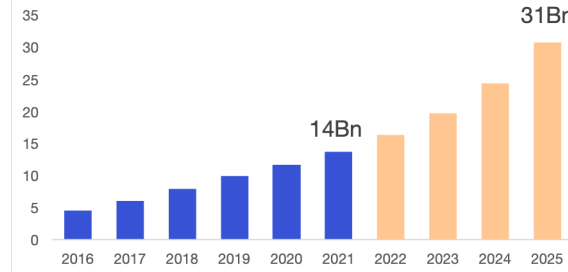
US Chips Act

- \$50Bn to bring chips domestic

IoT & 5G growth

- Expanding wireless use into new markets

Expected Explosion in IoT Connections



Threats

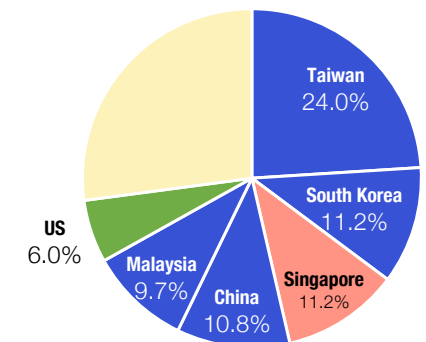
Strains in Demand and Supply

- Chip shortage slowing demand
- Rare Earths raising supply costs

Increasing Global Tensions

- 65% of chip production in 5 countries

Semicon Market Globally



Opportunities

Industry Overview

Low Substitutes, High Rivalry

Qualcomm

Key Smartphone Competitor

Based in Taiwan, supplies to China
Specialty in 5G Smartphones
Some IoT capability
Toe-to-toe with QCOM's tech

MEDIATEK

Key Legacy Auto Competitor

Ex-Singapore, now US-based firm
One segment for bluetooth chips
Chips best for simple markets – auto
Competes for acquisitions

BROADCOM

Bargaining
power of
suppliers:
HIGH

Threat of new
entrants &
substitutes:
LOW

Industry Rivalry:
HIGH

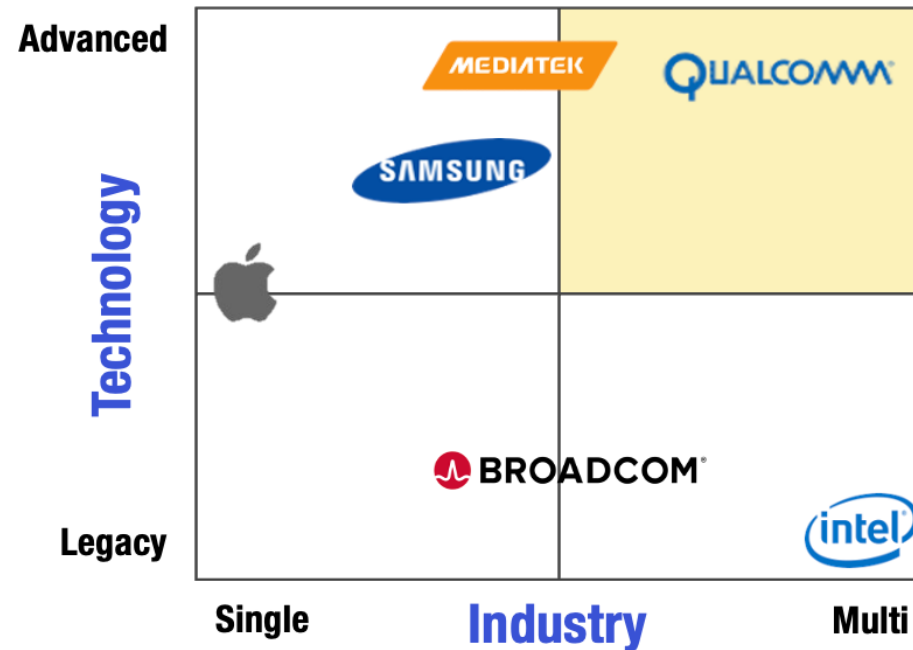
Bargaining
power of buyers:
MEDIUM

Industry Overview

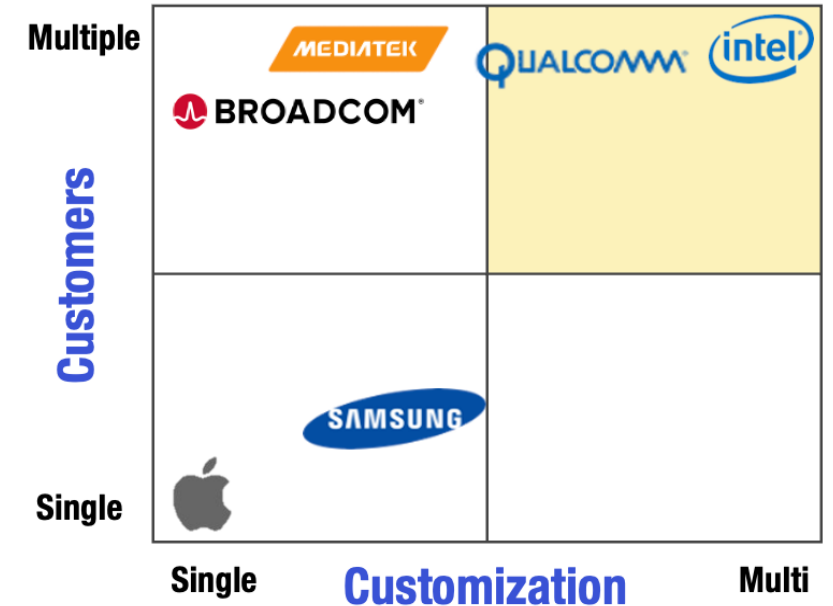
Uses Quality and Scale to Service Customers

Qualcomm

Leader in Technology and Industry Reach



Allows Partners to Customize Extensively





#1 **Mo**
Perf

#1 **AI**
Perf

#1 **Ca**
Lead

Investment Thesis

1. Qualcomm is a brand point champion for other f



Accessible Market Growth

New technologies are expanding the market outside of smartphones, into Internet of Things (IoT), automobiles and smart industrials.



Innovation Cycle Secured by Patents

Semiconductor firms need to constantly innovate, and Qualcomm's patents help secure market share while it focuses on M&A and expansion.



Upside from Blockbuster Partnerships

Qualcomm partners with the best firms in the world to expand wireless reach, creating unquantifiable upside in markets that don't even exist at the moment.

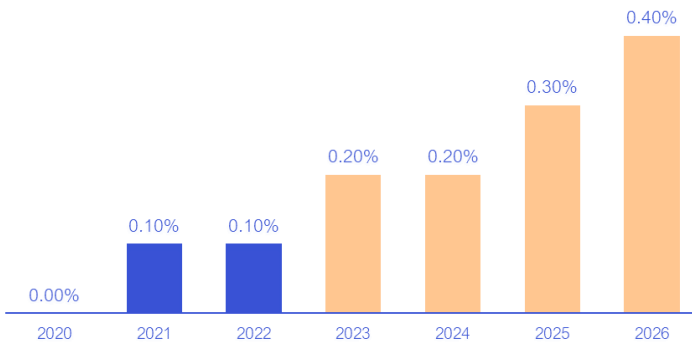
Investment Thesis

Addressable Market Growth



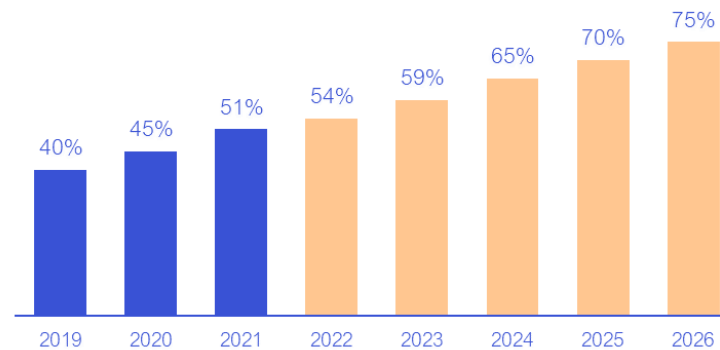
5G

5G Contribution to global GDP uplift from 2020 to 2026



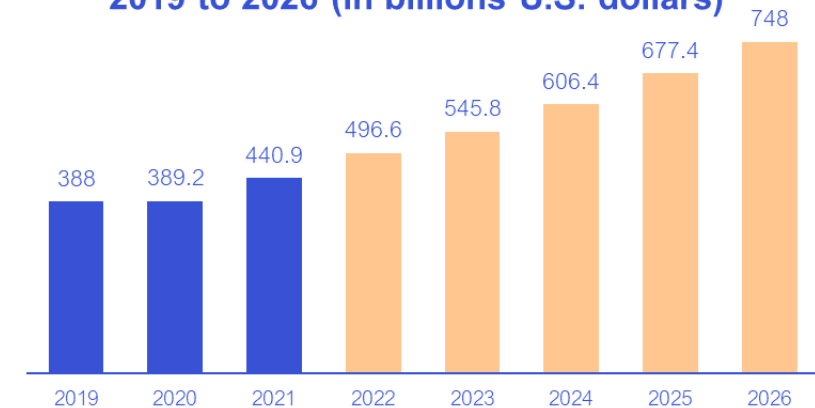
Automotive

Share of new vehicles shipped worldwide with built-in connectivity



Internet of Things (IoT)

IoT annual revenue worldwide from 2019 to 2026 (in billions U.S. dollars)



5G is predicted to power the digital economy

5G will enable up to \$13.1T in global sales activity in 2035

25+

Global automakers partnered with Qualcomm

#1

In telematics & automotive connectivity

Qualcomm Leads the Way With IoT-as-a-Service

IoT devices is projected to more than double between 2021 and 2025 to over 27 billion

Investment Thesis

Innovation Cycle Secured by Patents

Qualcomm

Entering New Markets

Recent:

↑ NUVIA Next-Gen CPU

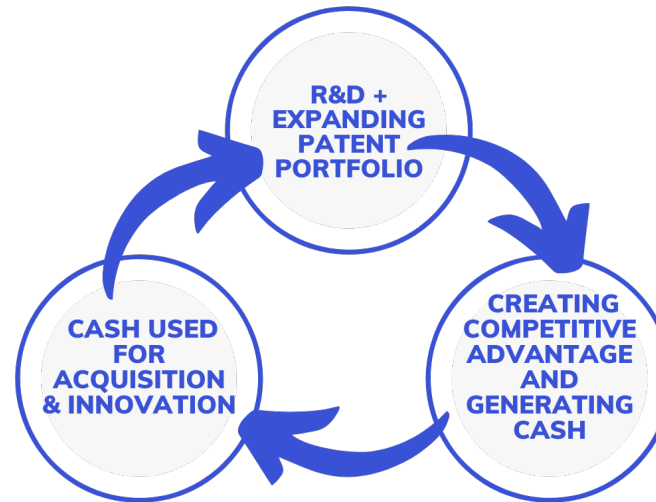
Pending:

Arriver ADAS Software

Strong track record of transforming acquisitions into industry leaders

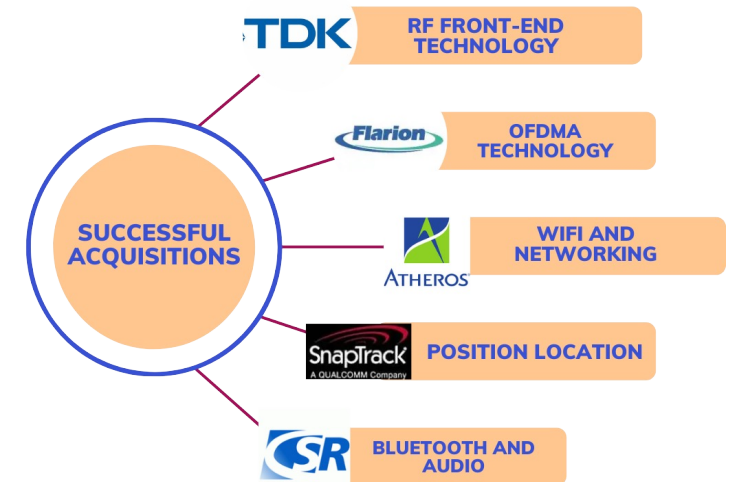
Business Acquisitions to accelerate existing strategy

Innovation Cycle



150+ 5G license agreements
16B+ Licensed devices shipped
200M+ Licensed connected vehicles delivered

M&A Model



100+ Countries and regions with patents used
140K+ Granted patents/pending applications

Investment Thesis

Upside from Blockbuster Partnerships

Qualcomm

Microsoft



ByteDance



SUNMI **Honeywell**
Android POS Leader

clover **ZEBRA**

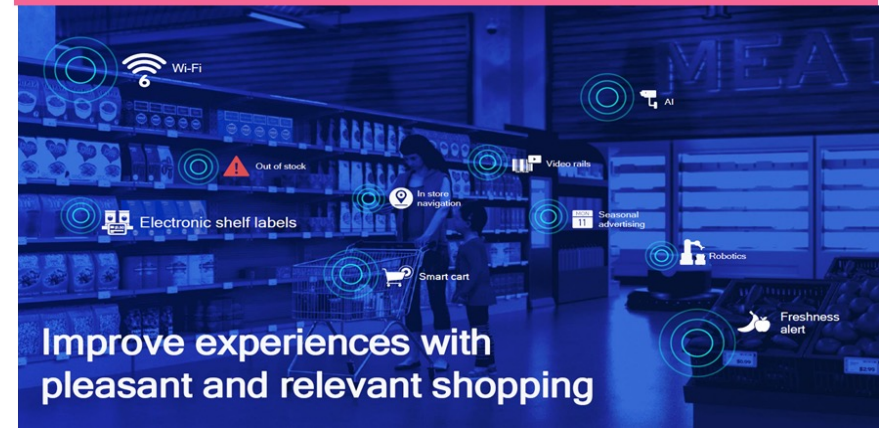
+13 companies

Snapdragon XR2 Platform

Qualcomm
Snapdragon
XR2 5G
Reference Design



Food Retail Industry



Improve experiences with
pleasant and relevant shopping

Investment Thesis

Risk Matrix



		Impact			
Probability	High		MARGIN DECLINE Higher supply costs and product mix will reduce profitability		APPLE EXIT Expected 2023 exit would impact 20% of total revenues
			SECURITY Metaverse security is weak and could impact user safety	M&A OPTIONS Availability of affordable M&A options can affect overall reinvestment	CHINA Domestic chips and tariffs could hurt sales as it did in 2019
				REGULATIONS Regulatory hurdles could impact adoption of new technology	PATENT CLIFFS May not be able to develop LT patents before current cliff
		Low			High

Major Risks

Other Risks

旗舰之选 有龙则灵

Snapdragon
骁龙



Qualcomm 高通

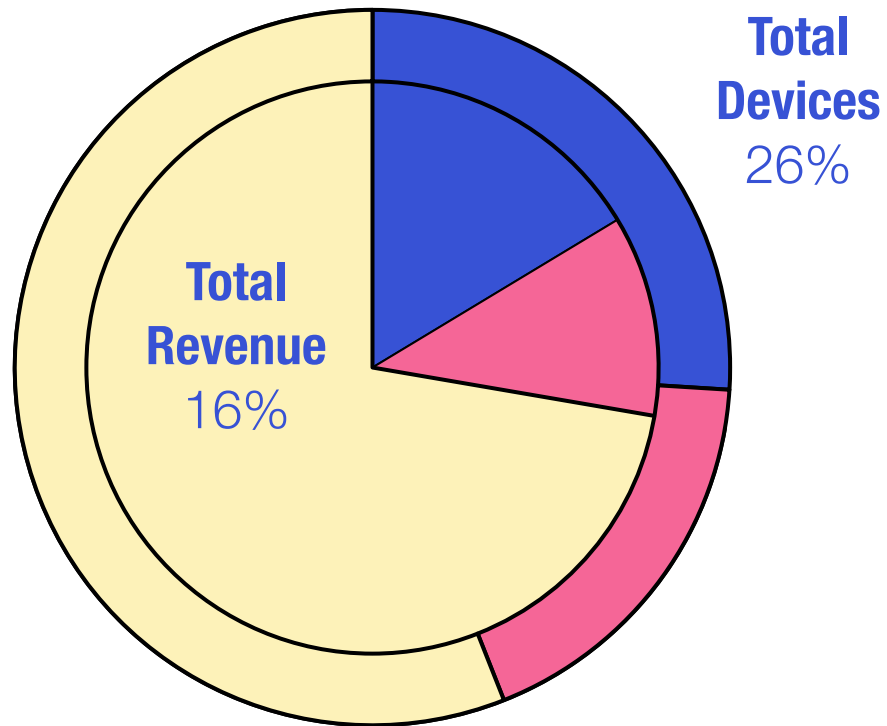
Financials

Financial Analysis

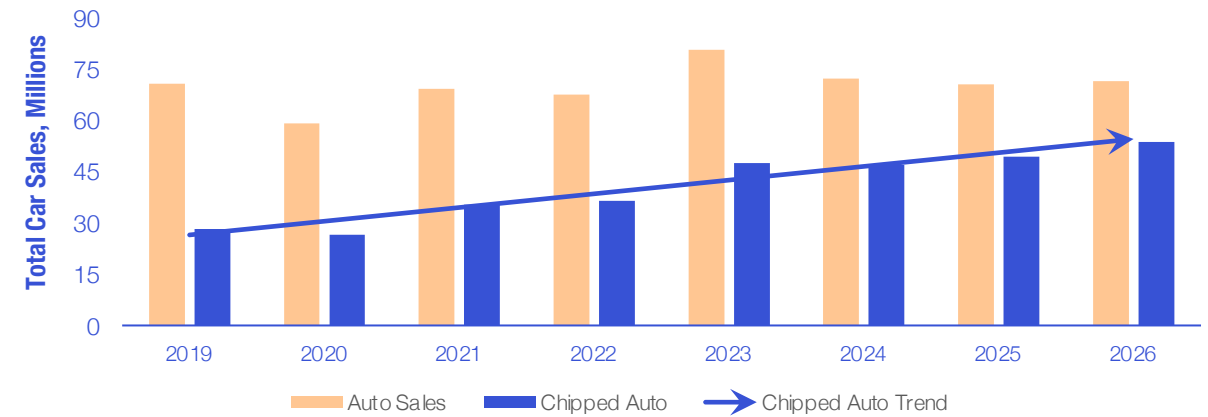
Strong Growth, Forced Diversification

Qualcomm

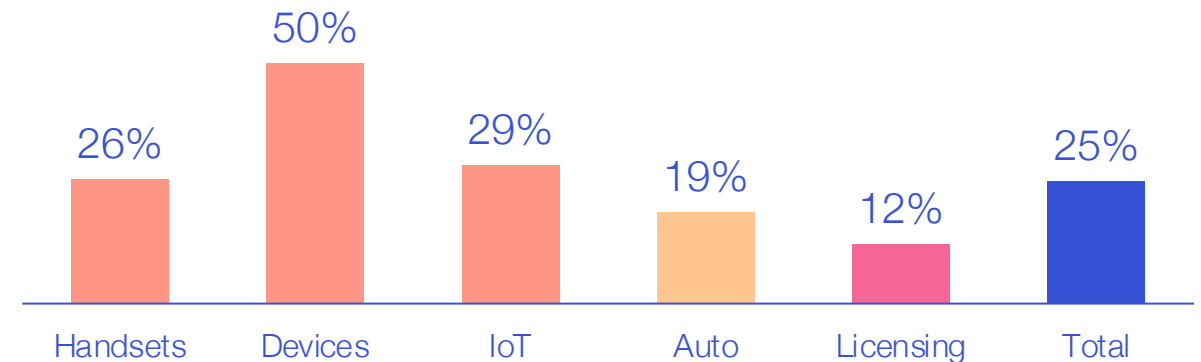
Impact of Apple Exit



Chipped Car Sales Grow Over Time



Recent Growth Driven By Products ex-Auto (CAGR)

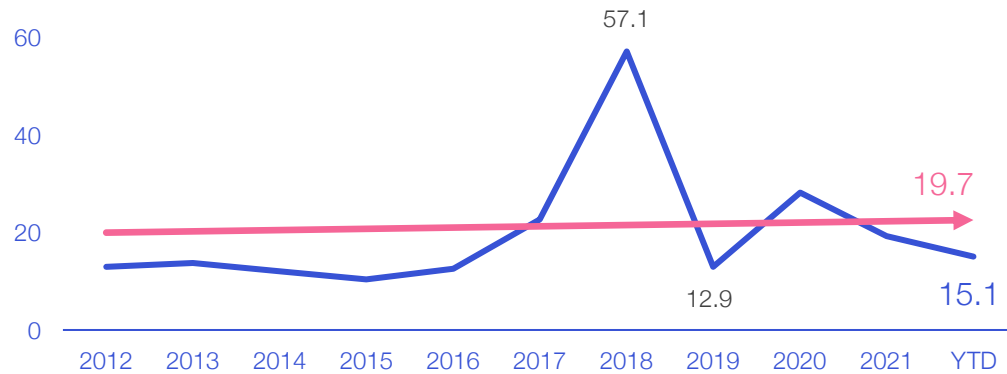


Financial Analysis

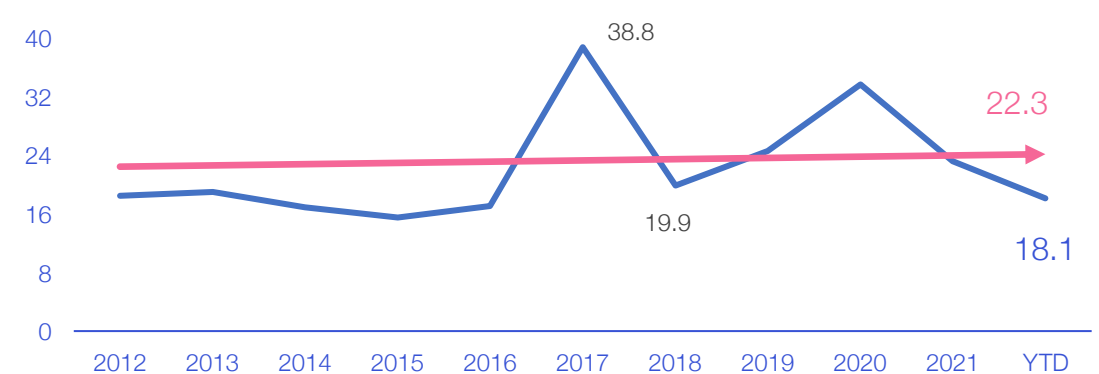
Undervalued Despite Leading Position

Qualcomm

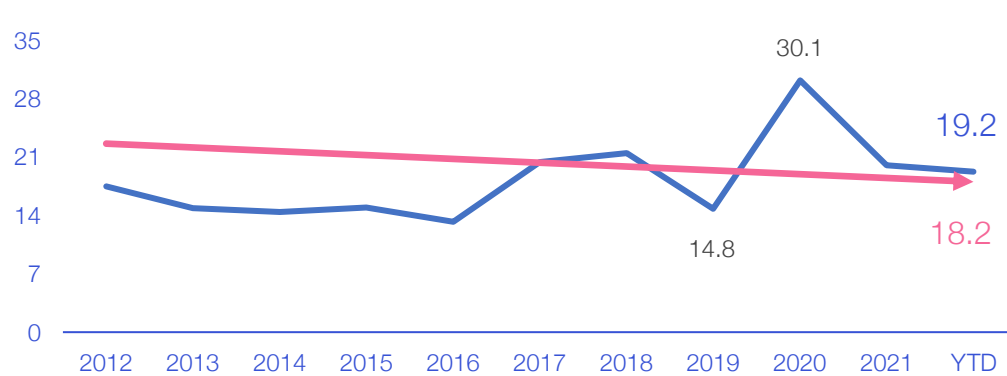
EV/EBIT



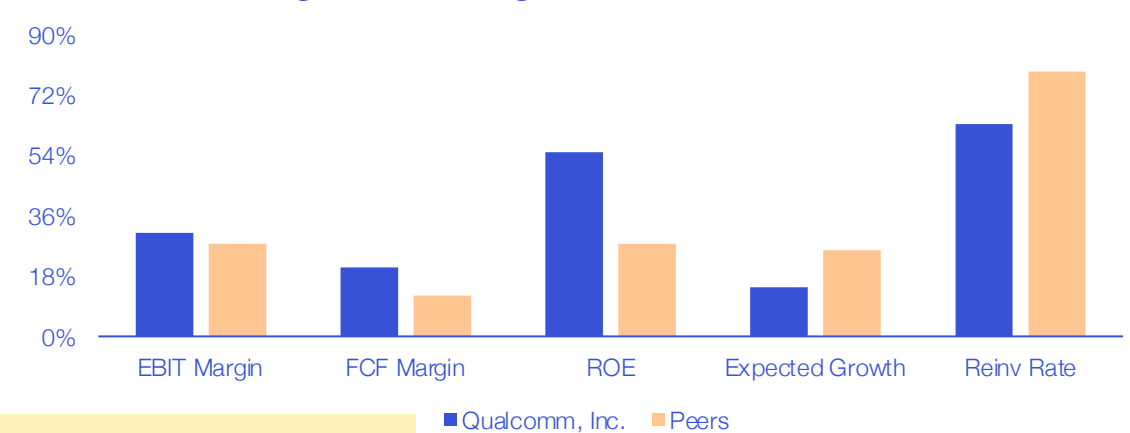
P/E



P/FCF



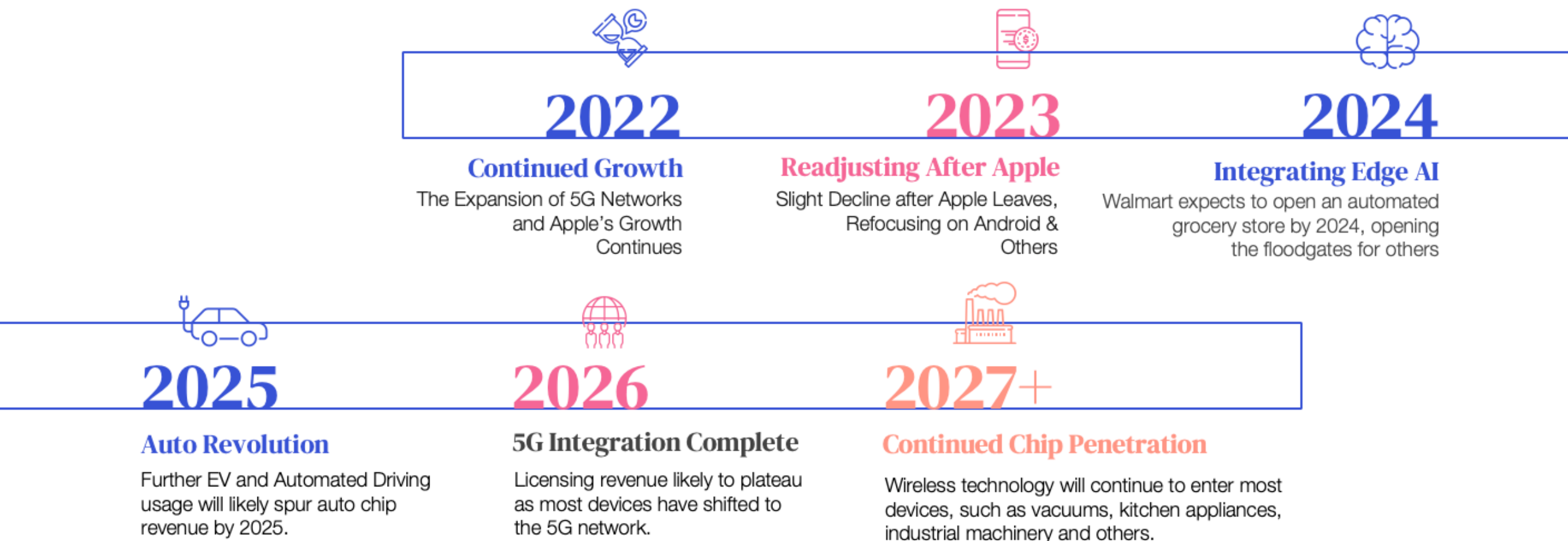
Strong ROE and Margins, Weaker Growth to Peers



Reinvestment Rate: Investment Spend (R&D, Capex, Acquisitions) / Pre-Investment FCF (FCF+Capex+R&D)



Valuation

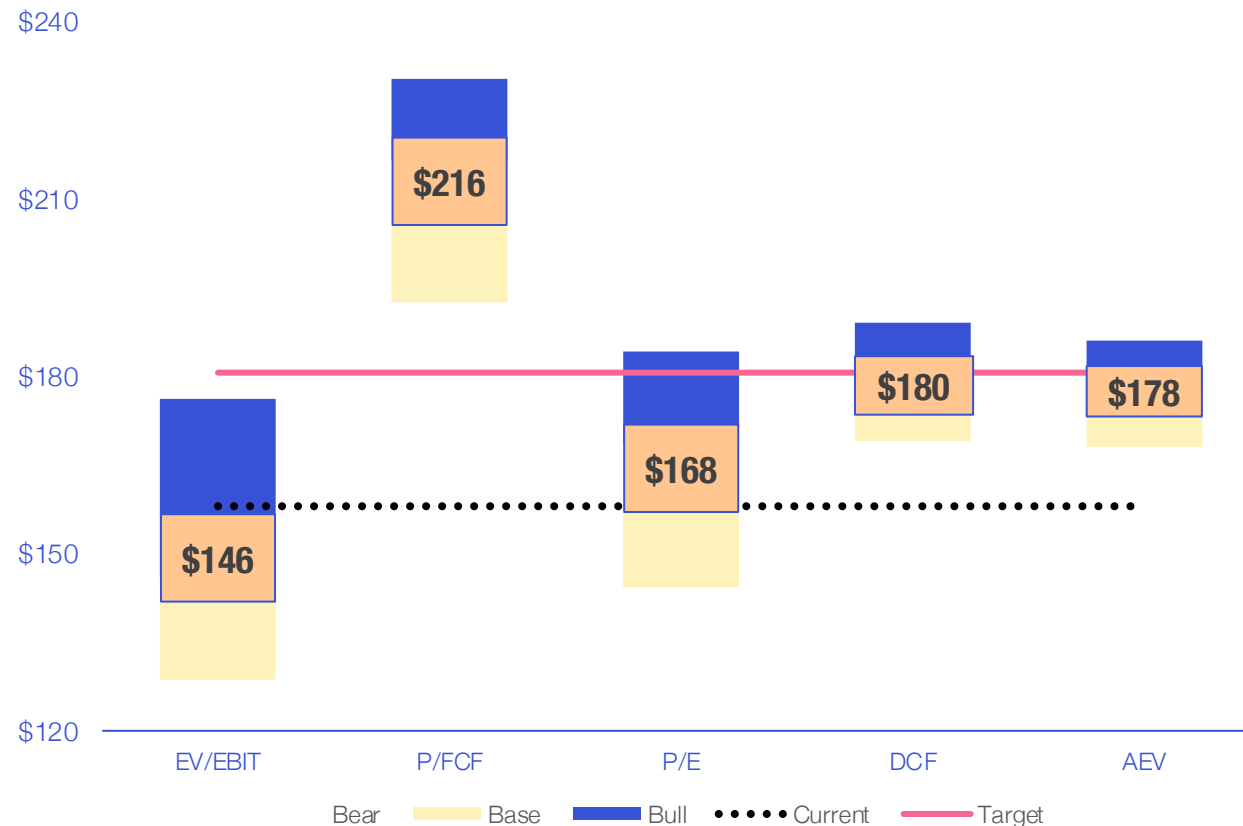


Valuation

High Upside Potential



Football Field: One-Year Price Estimates



\$194

Bull Case

- Diversification makes up for Apple sales
- Patents secure QCOM's lead in 5G
- Additional upside from partnerships

\$181

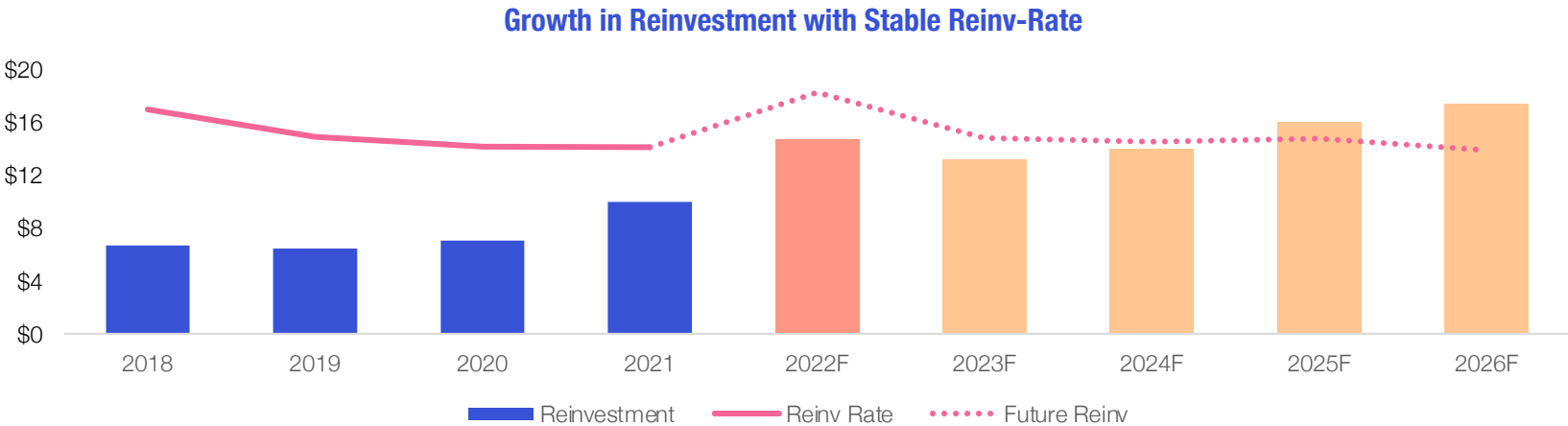
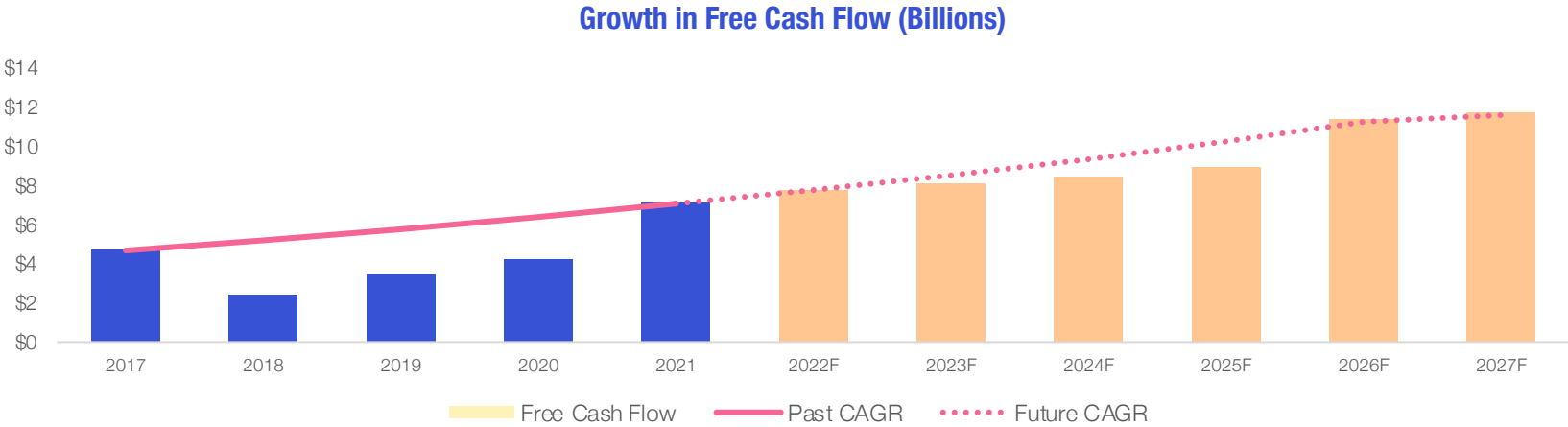
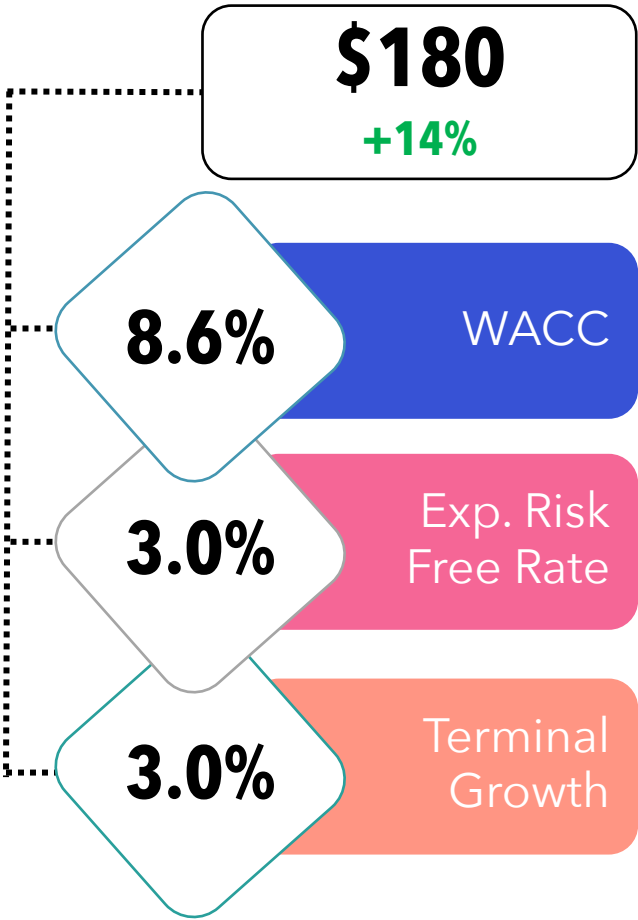
Base Case

- Some pain after Apple – quick recovery
- More 5G Competition in China
- Additional upside from partnerships

\$165

Bear Case

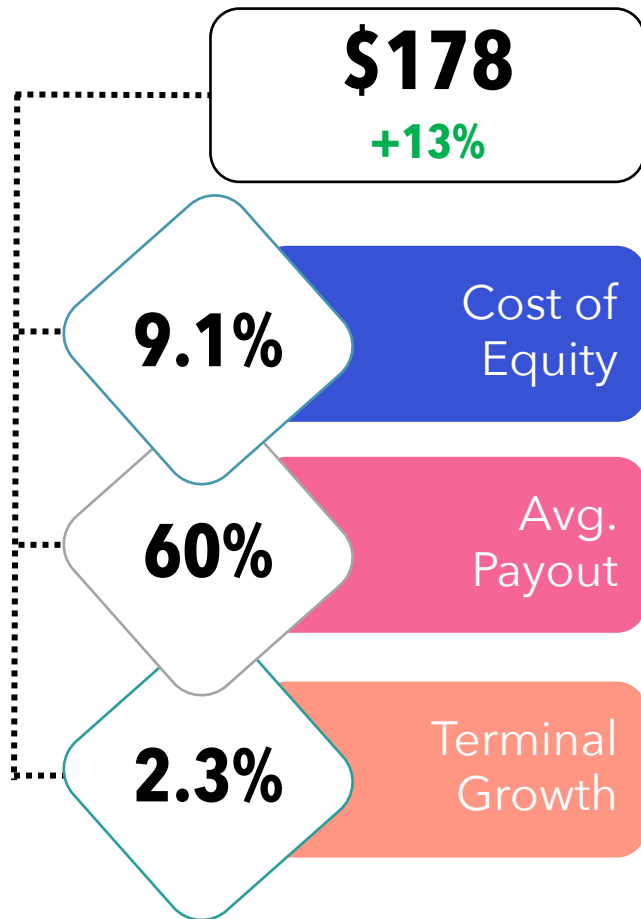
- Further exits hurt phone revenues
- Global competition in 5G, quicker 6G
- No major breakthroughs till 2028



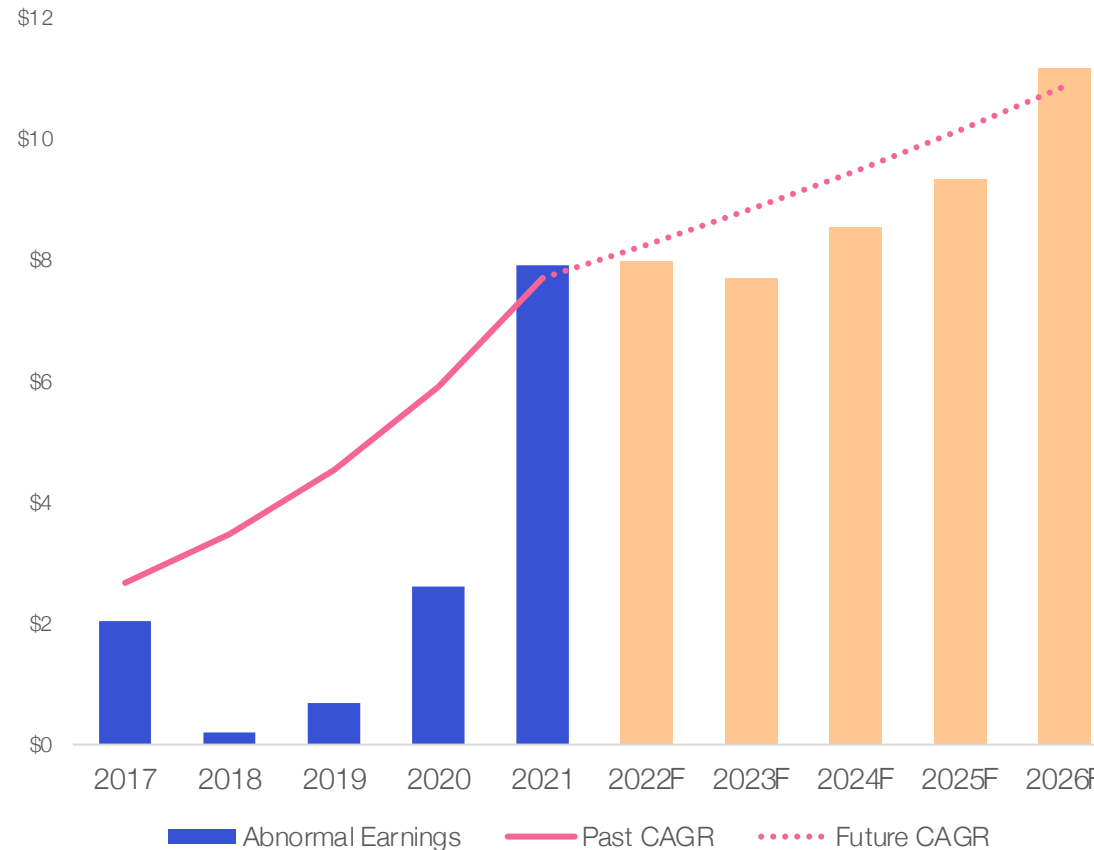
Valuation

AEV: Amon's Vision Drives Returns

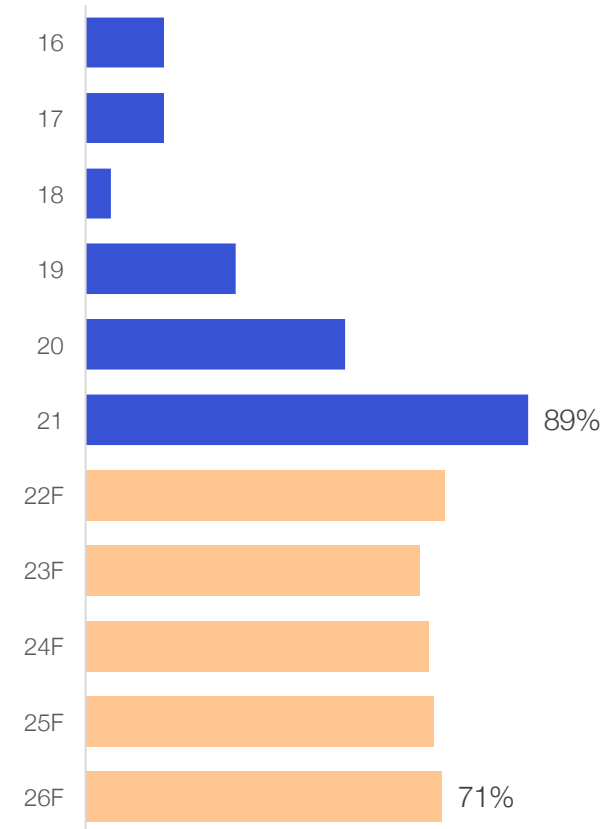
Qualcomm



Growth in Abnormal Earnings (Billions)



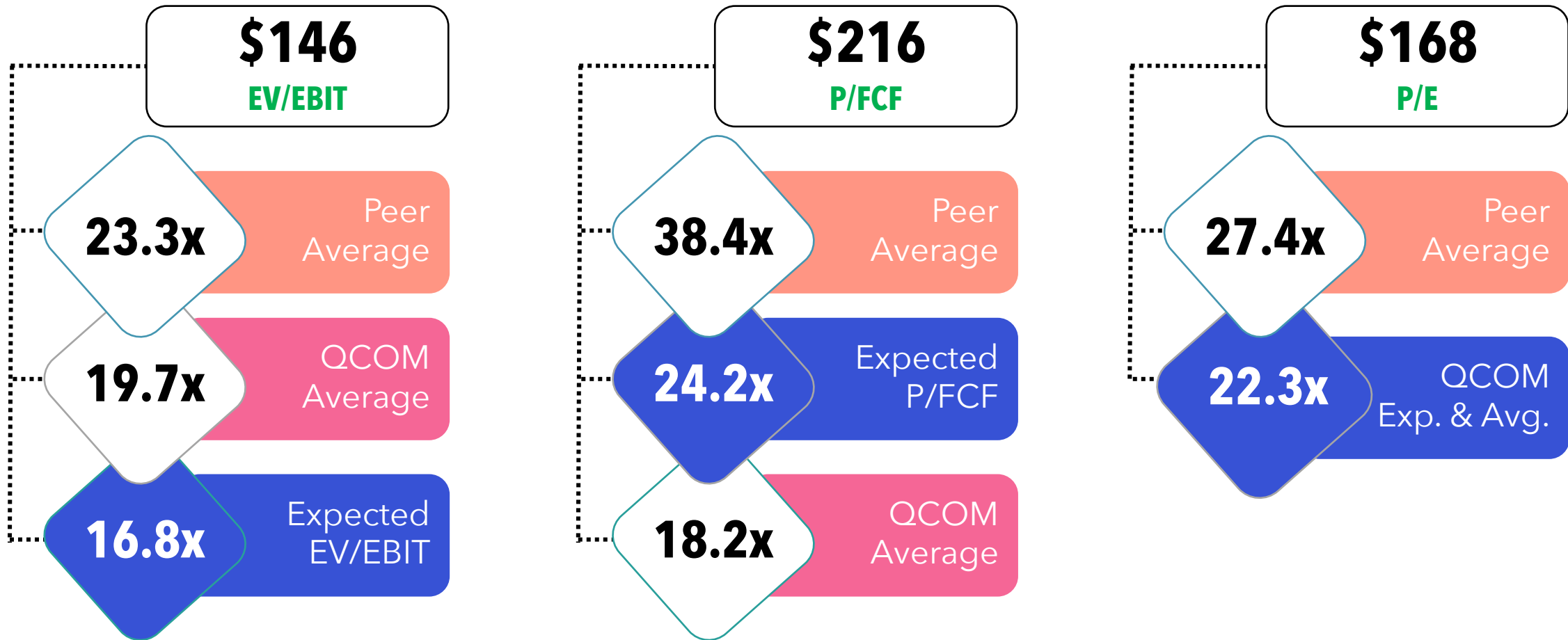
Strong ROE Expected



Valuation

Well Positioned for Multiple Expansion

Qualcomm



Summary

The Chips Are Facing Up

Qualcomm

- ✔ Qualcomm has been and will continue to be the leader in wireless technology
- ✔ The firm is well positioned to benefit from the growing use of wireless in every industry
- ✔ Qualcomm has more potential than competitors due to partnerships and innovation
- ✔ We believe this company is both a value and growth play

Target

\$181

Upside

14%

HANDOUT

The handout includes additional information from the research process.



Company Overview

The History of Qualcomm

Qualcomm

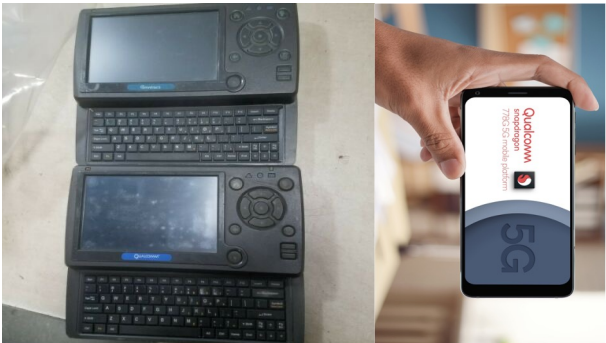
Qualcomm, Inc.

Company Information

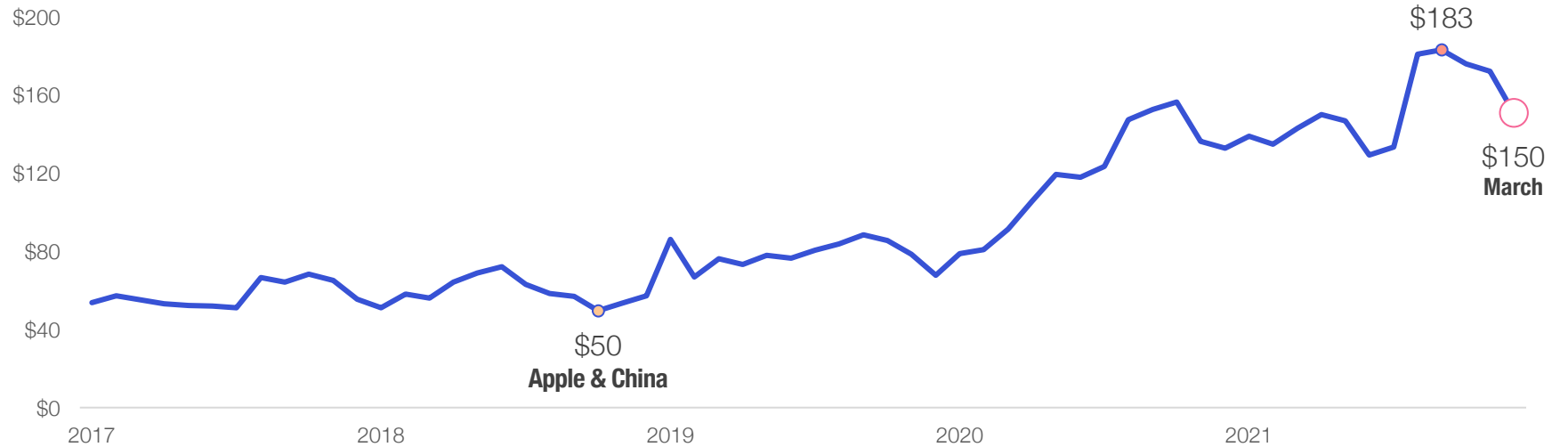
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Qualcomm

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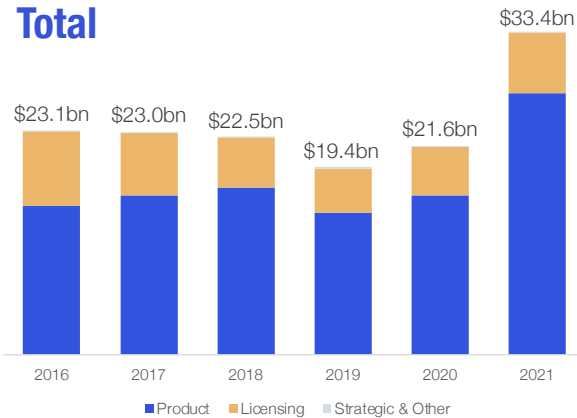


Company Overview

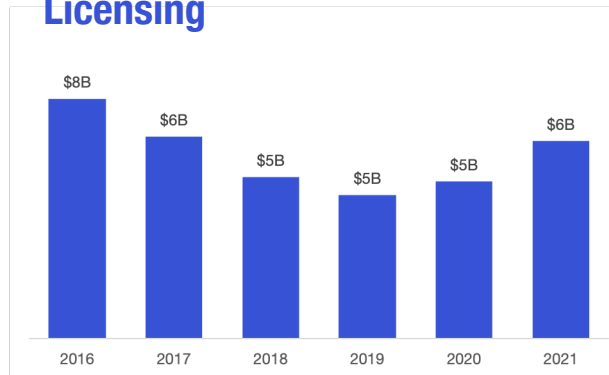
Introducing the Three Segments



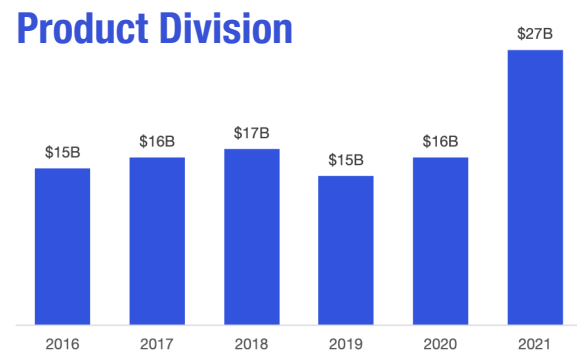
Total



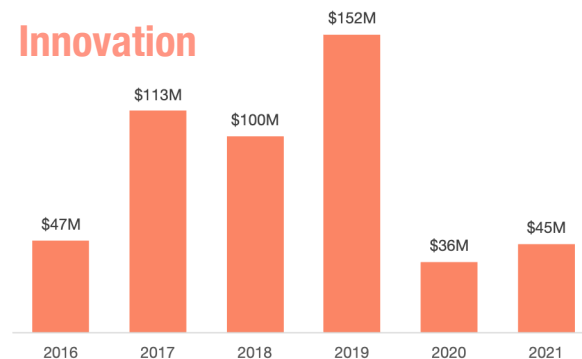
Licensing



Product Division



Innovation



QCT: Product Division

Qualcomm CDMA Technologies (QCT) develops chips for handsets, computers, smart devices and automobiles. This sector is based on their Snapdragon chip, which is currently the main 5G chip in the market.

QTL: Technology Licensing

The firm also licenses their technology to counterparts. This is necessary for firms looking to develop 5G chips, since Qualcomm holds almost 150 5G patents across the world.

QSI: Strategic Initiatives

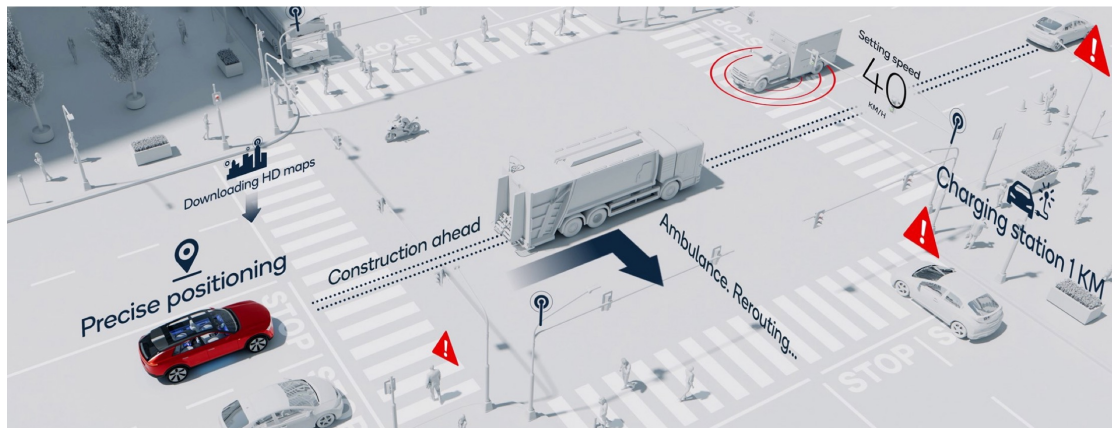
Qualcomm makes several “long-term bets”, which are investments in undeveloped markets. QSI’s main revenue driver is currently from ARM chips, which are expected to power future computers like Apple’s M1 Laptop.

Company Overview

Spotlight: Automobiles and IoT



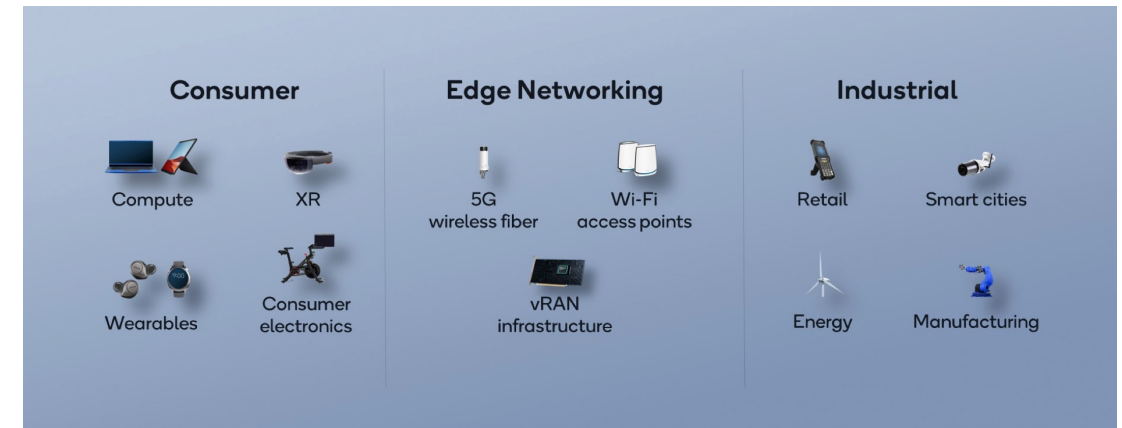
Automobiles



Key Partnerships

- Partner with Microsoft to expand metaverse ecosystem, develop AR chips
- Ferrari is working on building a smarter car
- Volvo is working on infotainment system for customer experience

IoT



Key Partnerships

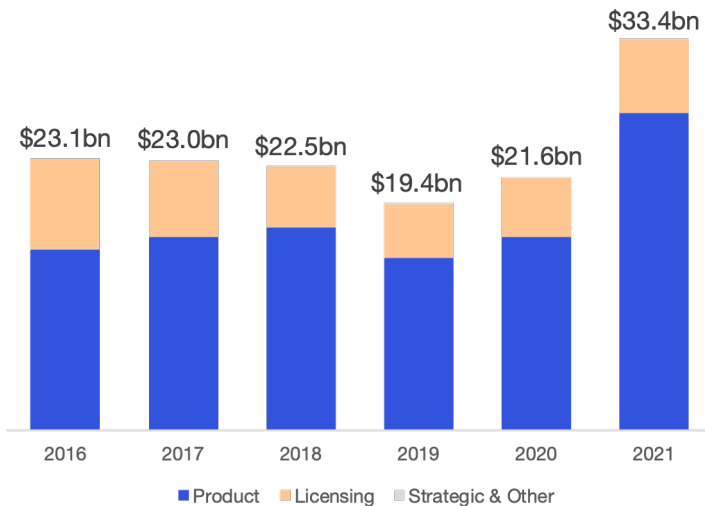
- Cybertrust Japan and SB Technologies are working with Qualcomm to deploy the smart solutions through Qualcomm IoT Service Suite
- Qualcomm is an important strategic partner of Walmart in their transforming retail industry vision.

Company Overview

Diversification and Growth



Growth Driven by 5G and Apple



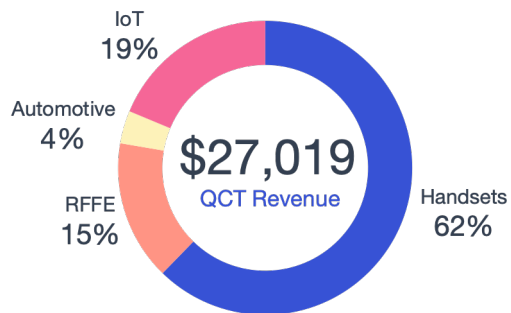
Apple and China

Apple and China are major clients to Qualcomm and can cause massive drops in overall firm revenue. In 2019, lower Apple phone sales, the Huawei blacklist and Chinese tariffs caused revenue decreases. In 2021, Apple's blockbuster phone and laptop sales caused revenue to soar.

5G Adoption

5G is expected to dominate future phone, computer and device sales as the global 5G rollout begins. With their large patent portfolio, companies are expected to pay Qualcomm for licensing their 5G technology or use the Snapdragon 5G chip for their wireless needs.

Diversifying Away from Handsets



Natural Diversification to New Markets

Companies such as Apple are expected to shift away from Qualcomm, reducing their revenue forecasts in handsets. Meanwhile, their other segments are expected to grow due to continued innovation in Edge AI, Smart technology and automobile self-driving and modernization. In three years, 5% of Qualcomm's product revenue has shifted into other markets. Despite this shift, handsets still make up for 62% of product revenue, and Apple is estimated to form ~15-20% of Qualcomm's total sales.

Company Overview

New Leadership Under Amon



Management



Cristiano Amon, CEO (2021-Present)

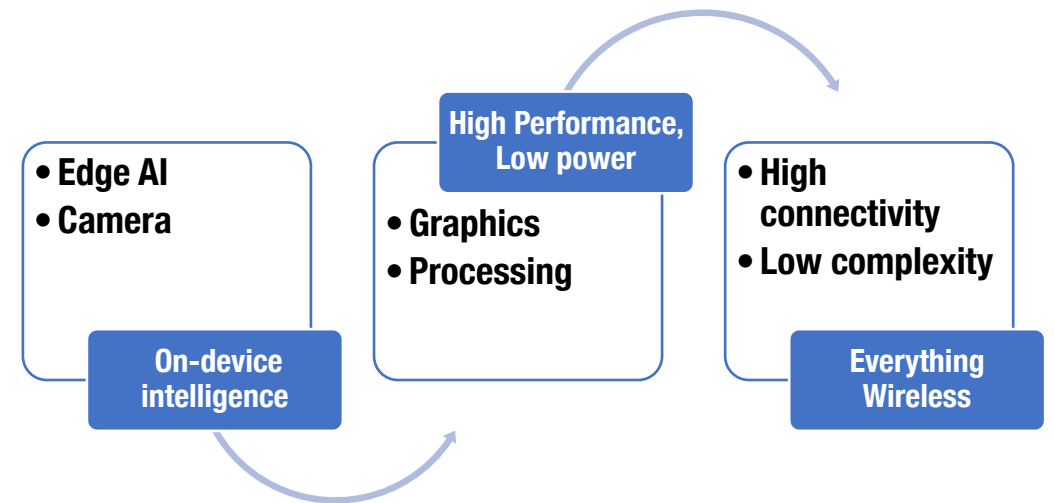
- Begin his career in 1995 as an engineer, great technical and business leadership experiences
- Key in Qualcomm 5G expansion strategy
- Refocused the firm into diversification through 5G



Mark Laughlin, CHAIRMAN (2021-Present)

- Graduate from US Military Academy at West Point
- Held lots of leadership roles in Palo Alto Network, VeriSign, NSTAC until land at Qualcomm

Strategy



Key Points of Strategy

- Qualcomm has an ultimate vision of a world where everyone and everything is intelligently connected
- 5G strategy focuses on delivering the most advanced technology and purpose-built solutions.
- Managing the massive IoT through 5G expansion, uniquely positioned to grow across multiple industries

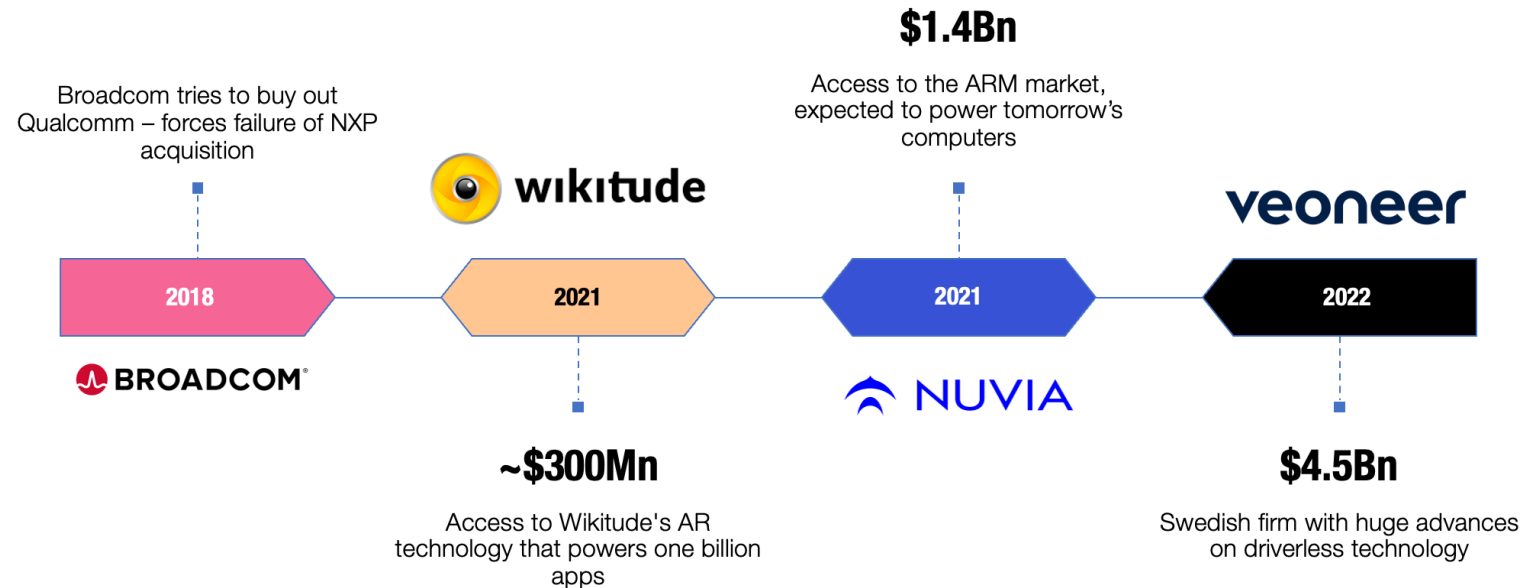
Company Overview

Using M&A to Enter Innovative Spaces

Qualcomm

Innovative future

- Qualcomm had to “redraw” its plans after the Broadcom’s acquisition attempt and its failed bid for NXP.
- The integration between Wikitude and Qualcomm platforms kick start the next generation of immersive AR computing
- Veoneer implements advanced-driving assistance systems based on their ADAS ECU technology.
- NUVIA acquisition leads to in-house CPU design for Qualcomm, competing with Apple's silicon division.
- Enhances Qualcomm’s CPU roadmap and extends leading technology position.



Bottom Line: Qualcomm is buying technology to advance their access to new markets.

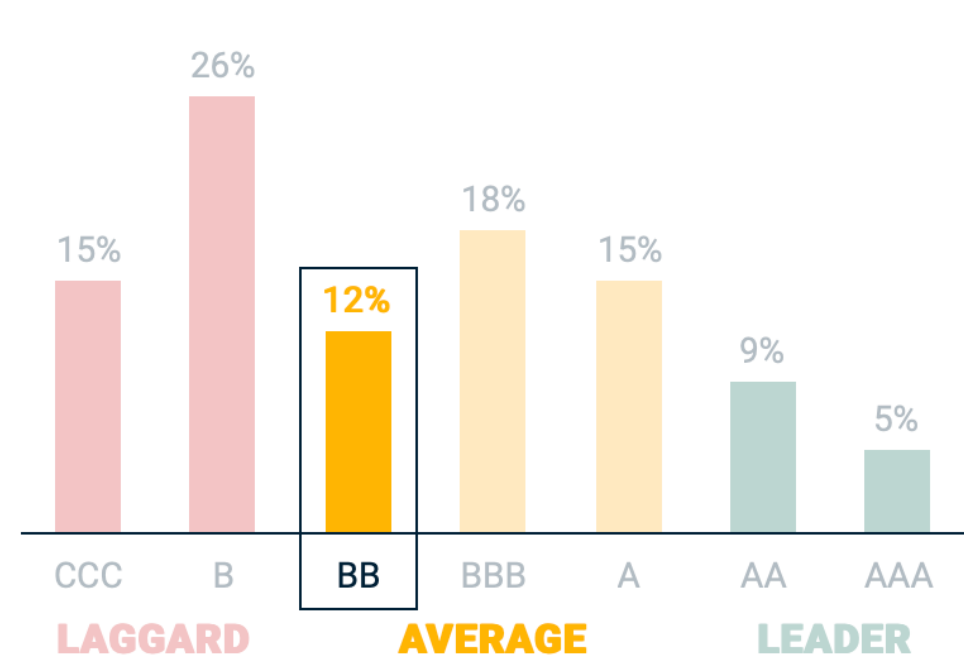
Amon has moved Qualcomm away from the old strategy of buying market share and customers. The new model ensures Qualcomm's acquisitions improve its technology offering and increase innovation at the firm.

Company Overview

Improving on the ESG Front



Qualcomm's ESG is Average but Trending Upwards



1.96° Emissions aligned with global target

50%
Board
Representation

PLATINUM
Climate Status

Out with the Old, in with the New

ESG LAGGARD	AVERAGE	ESG LEADER
Qualcomm is not a laggard on any of the Key Issues that we evaluated for its industry.	 CORPORATE BEHAVIOR	 CORPORATE GOVERNANCE
	 OPPORTUNITIES IN CLEAN TECH	 HUMAN CAPITAL DEVELOPMENT
		 CONTROVERSIAL SOURCING

Corporate Reformation completed with removal of Paul Jacobs as CEO **2021**

The background of the slide is a high-magnification, angled photograph of a microchip. The chip's surface is covered in a dense grid of small, square circuitry elements. Several prominent, diagonal bands of different colors (purple, yellow, green, and blue) run across the chip, likely representing different functional blocks or layers. A solid blue horizontal bar is positioned in the center of the image, containing the title text.

Industry Overview

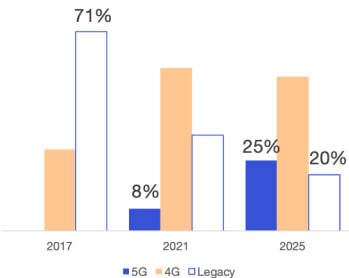
Industry Overview

Economic Trends Favor Qualcomm



Strengths

Increasing 5G Presence Benefits Qualcomm



Leader in Innovation

Strong innovator in the industry with over 140 000 granted and pending patents.

Has a 5G leadership position with more than 100 5G licence agreements.

Strategic Alliances

Strategic partnerships, mergers and acquisitions enables the company to gain a competitive edge for its product and services. Example: In 2021, Qualcomm acquired Nuvia in order to augment its leading technology.

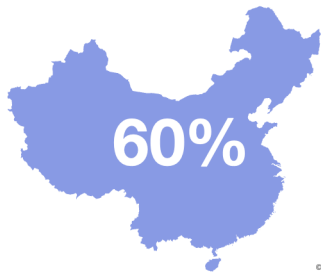
Declining market Share

Qualcomm has had a declining market share over the past years mainly due to the disrupted supply chain (because of the pandemic) and increased competition.

High Chinese Exposure

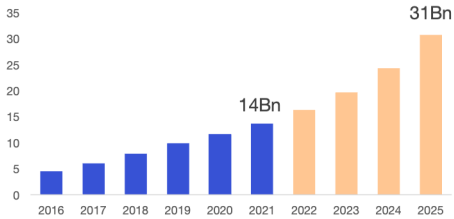
Qualcomm and MediaTek are the most sensitive to China, with more than 60% of revenues from that market. With the global push to nationalize semiconductors, Qualcomm in particular could lose customers.

Weaknesses



Powered by Bing
© GeoNames, TomTom

Expected Explosion in IoT Connections



Chips Act

New legislation passed by the US Senate on June 2021 includes a \$52Bn fund exclusive for domestic semiconductor research, design and manufacturing provisions.

IoT & 5G growth

The mobile industry is moving to 5G technologies that allow for low latency, greater support and capacity than previous technologies.

By 2025, 3G/4G/5G connections are projected to reach 8.4 billion with 5G accounting for 25% of mobile technologies.

Demand for connected devices with advances in wireless technologies is expected to grow in the future with IoT device connections expected to reach 30.9Bn in 2025.

Demand for Rare Earths Stress Margins

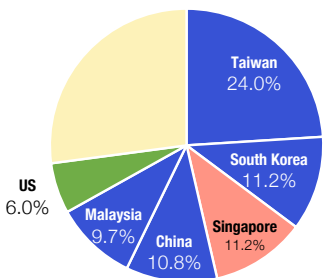
Rare Earths are now used in multiple markets, raising prices for chip providers.

Increasing Global Tensions

Global tensions have cut supply chains for critical supply and demand markets. Example: US/China Trade war lowered semi production.

Russia's war with Ukraine can deepen the chip shortage as more than half of the world's neon (a critical input in chips production) is produced by a few companies in Ukraine.

Semicon Market Globally



Opportunities

Threats

Industry Overview

Low Substitutes, High Rivalry

Qualcomm

Threat of new entrants

(LOW)

- Constant innovation and use of economies of scale
- High investment in research and development by incumbent companies
- High market concentration

Threat of substitutes

(LOW)

- Wired solutions have the advantage of being more secured
- With industrial automation expected to grow, complex control systems and processes require the flexibility offered by wireless systems.

Bargaining power of buyers

(MEDIUM)

- High market concentration reduces the bargaining power of buyers
- Large buyers can put pressure on semiconductor companies

Bargaining power of suppliers

(HIGH)

- Limited Foundries in the market, mostly concentrated in a couple of geographies
- Only a couple of foundries can supply high-tech chips
- More options for simple chips used in Automobiles and IoT

Industry Rivalry

(HIGH)

- very competitive industry
- Companies do not compete so much on the basis of prices, but rather on their ability to make the best chips and to collaborate with other players
- Only a few companies have access to leading-edge process technologies

Bargaining
power of
suppliers:
HIGH

Threat of new
entrants &
substitutes:
LOW

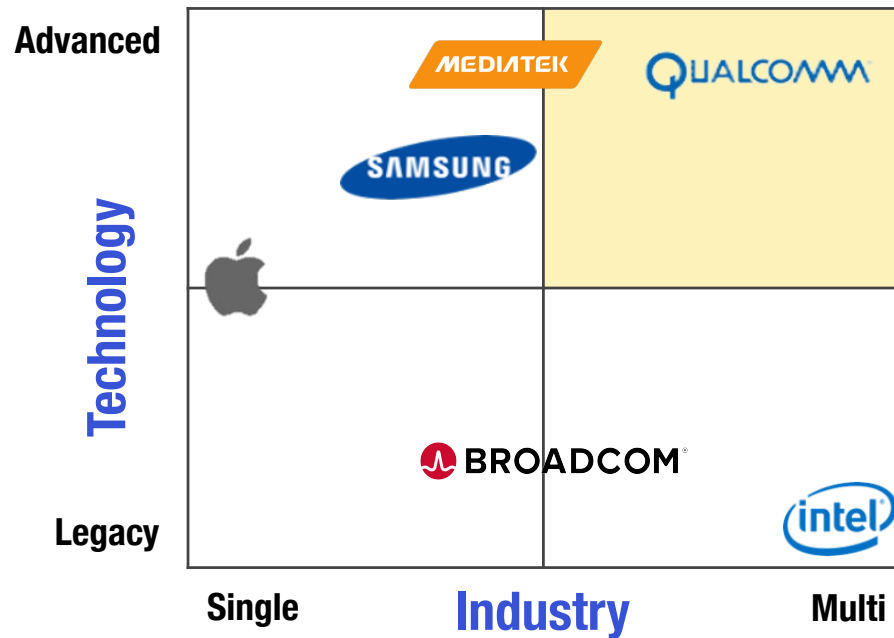
Industry Rivalry:
HIGH

Bargaining
power of buyers:
MEDIUM

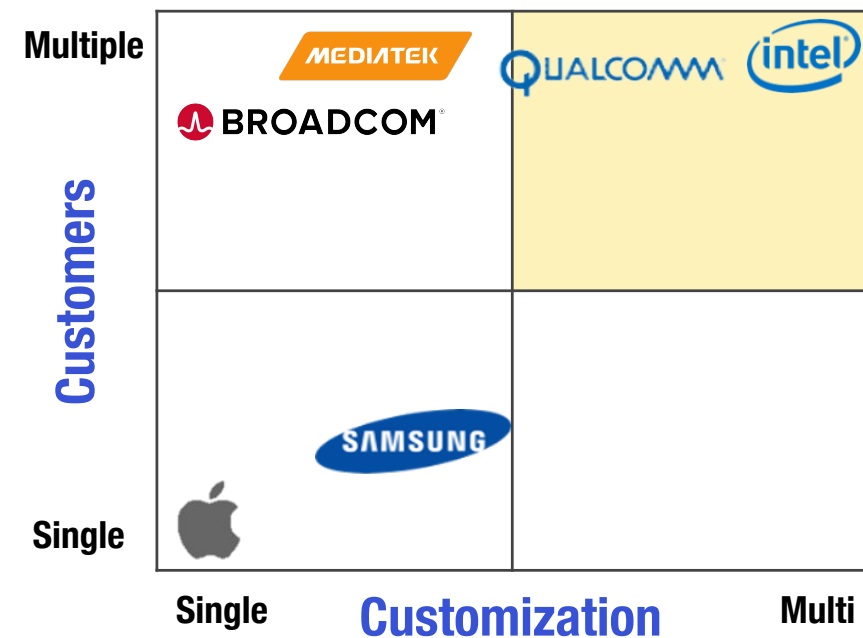
Industry Overview

The Best Choice for Advanced Use Cases

Qualcomm



Qualcomm is the main wireless player for most industries, due to their advanced technology and Snapdragon's ability to fulfill complex needs in industry, IoT, Auto and Smartphones. MediaTek, the closest competitor, is mainly involved with smartphones.



Qualcomm supplies their chips to multiple customers and works with them to develop unique solutions based on their Snapdragon chips. In the future, only Intel expects to provide wider services than Qualcomm; but are focused on foundry services rather than technology.



#1 **Mo**
Perf

#1 **AI**
Perf

#1 **Ca**
Lead

Investment Thesis

1. Qualcomm is a brand point champion and other factors



Accessible Market Growth

New technologies are expanding the market outside of smartphones, into Internet of Things (IoT), automobiles and smart industrials.



Innovation Cycle Secured by Patents

Semiconductor firms need to constantly innovate, and Qualcomm's patents help secure market share while it focuses on M&A and expansion.



Upside from Blockbuster Partnerships

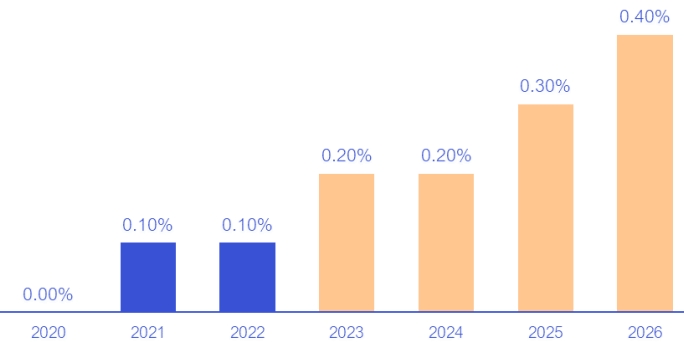
Qualcomm partners with the best firms in the world to expand wireless reach, creating unquantifiable upside in markets that don't even exist at the moment.

Investment Thesis

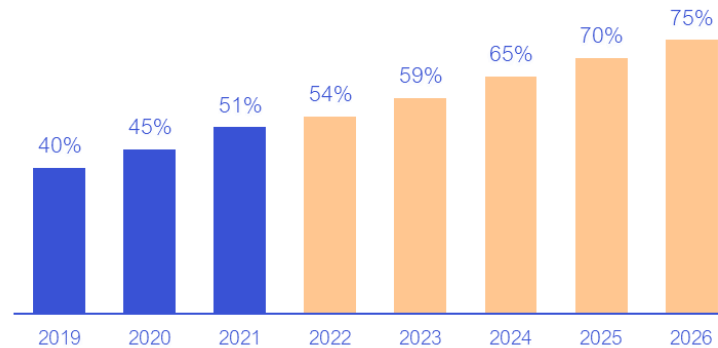
Addressable Market Growth



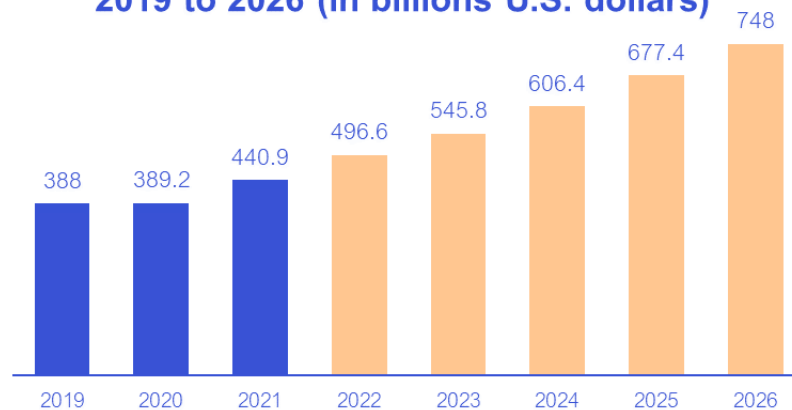
5G Contribution to global GDP uplift from 2020 to 2026



Share of new vehicles shipped worldwide with built-in connectivity



IoT annual revenue worldwide from 2019 to 2026 (in billions U.S. dollars)



5G:

IHS Markit forecasts that potential global sales activity across multiple industry sectors enabled by 5G could reach \$13.1 trillion in 2035. This represents about 5.1% of all real global output in 2035.

Automotive:

Digitalization of the automotive cockpit continues to transform the in-vehicle experience, enabling greater personalization of content and settings for both drivers and passengers as automakers respond to growing interest from consumers to bring their digital lifestyles into the vehicle.

Internet of Things (IoT):

The installed base of IoT devices, which includes everything from wearables to industrial handhelds to gateways, is projected to more than double between 2021 and 2025 to over 27 billion. The growth in IoT devices is a catalyst in driving demand in edge networking platforms.

Investment Thesis

Innovation Cycle Secured by Patents



Industry Leading Patent Portfolio

100+ Countries and regions
with patents issued

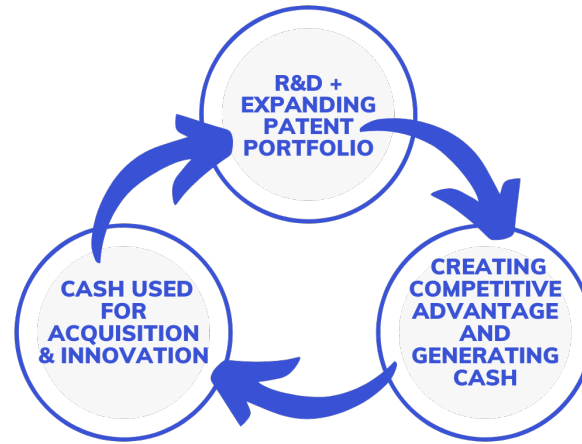
140K+ Granted patents/pending
applications

Recent:

↑ NUVIA Next-Gen CPU

Pending:

Arriiver ADAS Software



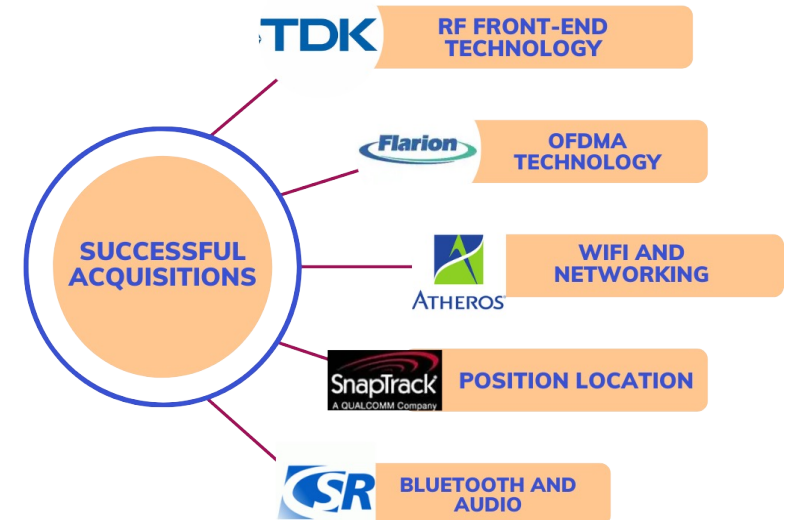
Qualcomm Technology Licensing

150 + 5G license agreements

16B+ Licensed devices shipped

200M+ Licensed connected
vehicle units shipped

- With over 150 5G licensing agreements, Qualcomm's industry-leading, highly valuable, and fundamental 5G innovations are the most widely licensed in the industry—including multiyear patent license agreements with every major handset OEM.
- Qualcomm has been effective in licensing revenue during 5G shift which helps create a competitive advantage.
- Since their founding, they have invested over **\$75B** in R&D.
- Portfolio contains valuable implementation inventions that make cellular commercialization viable.



Investment Thesis

Upside from Blockbuster Partnerships

Qualcomm

Microsoft



Snapdragon XR2 Platform



Qualcomm and Microsoft

Qualcomm and Microsoft will expand and accelerate into AR in preparation to entering Metaverse.

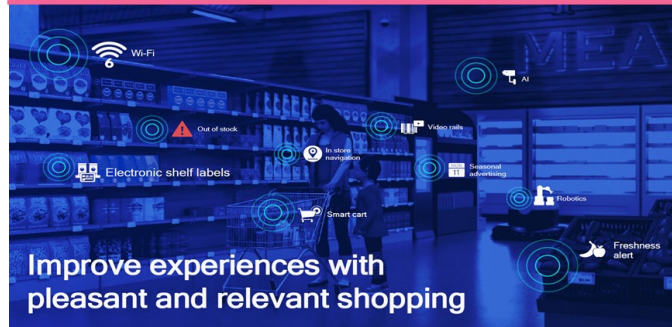
Qualcomm and ByteDance

ByteDance, TikTok and Pico Interactive VR parent company, will team up with Qualcomm to enter the metaverse with XR/AR technology.

ByteDance



Food Retail Industry



Snapdragon XR2 Platform

Stated as the best invention of 2021, Snapdragon XR2 Platform plans to connect 5G and AI so that people can use it in the Metaverse.

Qualcomm x Food Retail Industry

Grocers are making additional investments in supply-chain automation, mainly in retrofitting existing distribution centers with picking tools that reduce cost to fill. According to McKinsey estimates, these supply-chain tools will generate more than \$20 billion in value over the next three to five years

SUNMI
Android POS Leader

Honeywell

clover

ZEBRA

+13 companies

Investment Thesis

Risk Matrix



		Impact			
Probability	High		MARGIN DECLINE Higher supply costs and product mix will reduce profitability		APPLE EXIT Expected 2023 exit would impact 20% of total revenues
			SECURITY Metaverse security is weak and could impact user safety	M&A OPTIONS Availability of affordable M&A options can affect overall reinvestment	CHINA Domestic chips and tariffs could hurt sales as it did in 2019
				REGULATIONS Regulatory hurdles could impact adoption of new technology	PATENT CLIFFS May not be able to develop LT patents before current cliff
	Low				
		Low	High		

Major Risks

Other Risks

Apple Exit:

By 2023, Apple announced that it will be producing their own chips. Although that takes away 20% of Qualcomm’s profits in the mobile business, Qualcomm has mitigated this risk by effectively diversifying itself to the point where it is nearly Apple-proof.

China:

Although there is a rocky relationship between China and the West, Qualcomm will not be harmed. If China creates strict regulations that would jeopardize Qualcomm, Qualcomm can diversify into auto, IoT and other industries thus lessening their dependence to China.

M&A Options:

Qualcomm has had unsuccessful mergers in the past such as the Dutch NXP Semiconductor company where they had to pay \$2 billion for the failed acquisition. Also, synergies tend to fail 70% of the time. Even though this is a problem for many companies, Qualcomm avoids this because their M&A strategy is all about purchasing tech which adds to their competitive advantage.

旗舰之选 有龙则灵

Snapdragon
骁龙



Qualcomm 高通

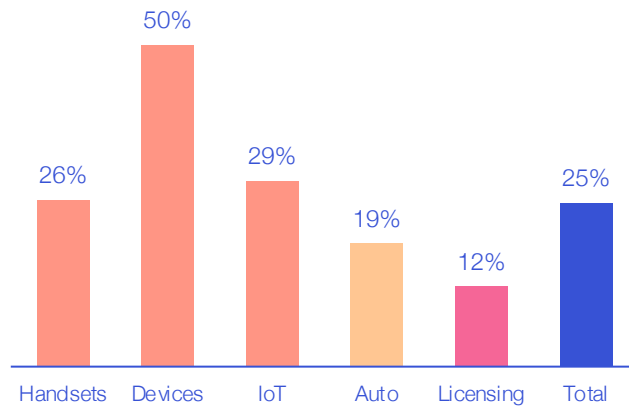
Financials

Financial Analysis

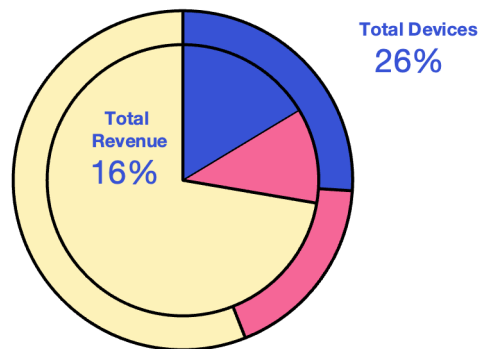
Strong Growth, Forced Diversification



Recent Growth Driven By
Products ex-Auto



Impact of Apple Exit



Apple Exit Costs Qualcomm 16% of Revenues

Apple is currently Qualcomm's largest customer, making up ~26% of revenue in Handsets and Other Devices. As a result, Apple's expected 2023 exit would cost Qualcomm 16% of total revenue. Qualcomm has already accounted for this exit in their projections – the firm still expects to grow ~15% CAGR into 2025.

Decline in Licensing Offset by Devices

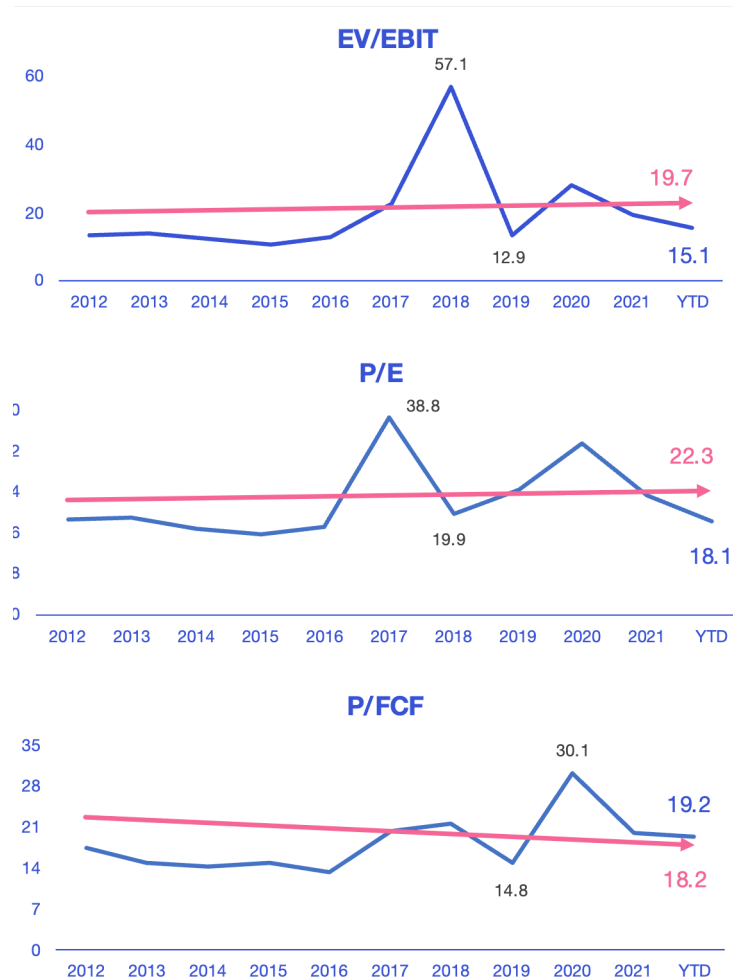
Licensing has continued to fall consistently at a CAGR of ~4%. Several players have moved to either (1) product revenue or exited the company entirely (Huawei). However, the Devices segment, which creates wireless chips for computers and other non-smartphone devices, has more than made up for this loss. The number of laptops sold this year increased dramatically, and Qualcomm expects this to continue growing with their NUVIA acquisition.

Auto Yet to Show Strength

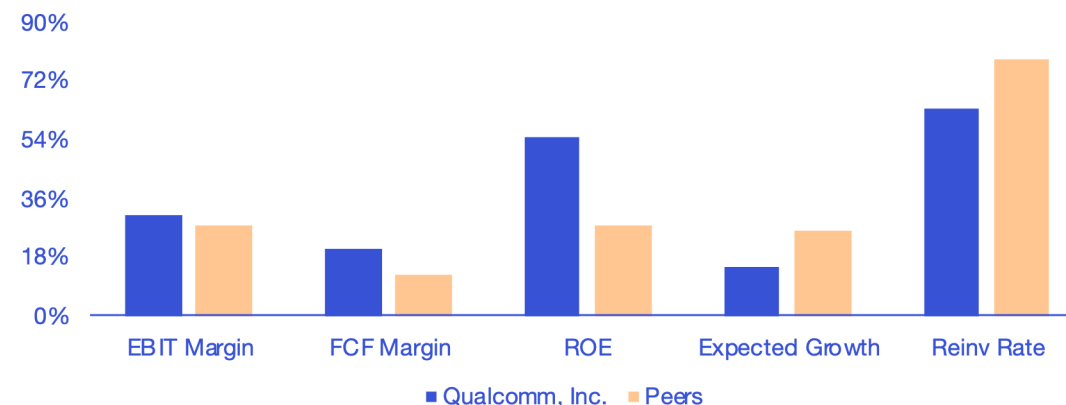
Auto chip sales remain low as the industry rebounds from the impact of COVID. Due to supply constraints, the full growth from automobiles is unlikely to be felt till 2023. Further, only 51% of cars today have chips, compared to a forecasted 70% by 2025. As a result, the auto chip market is expected to grow consistently despite the cyclical nature of the end market.

Financial Analysis

Undervalued Despite Leading Position



Strong ROE and Margins, Weaker Growth to Peers



Trading Below Historic Trends

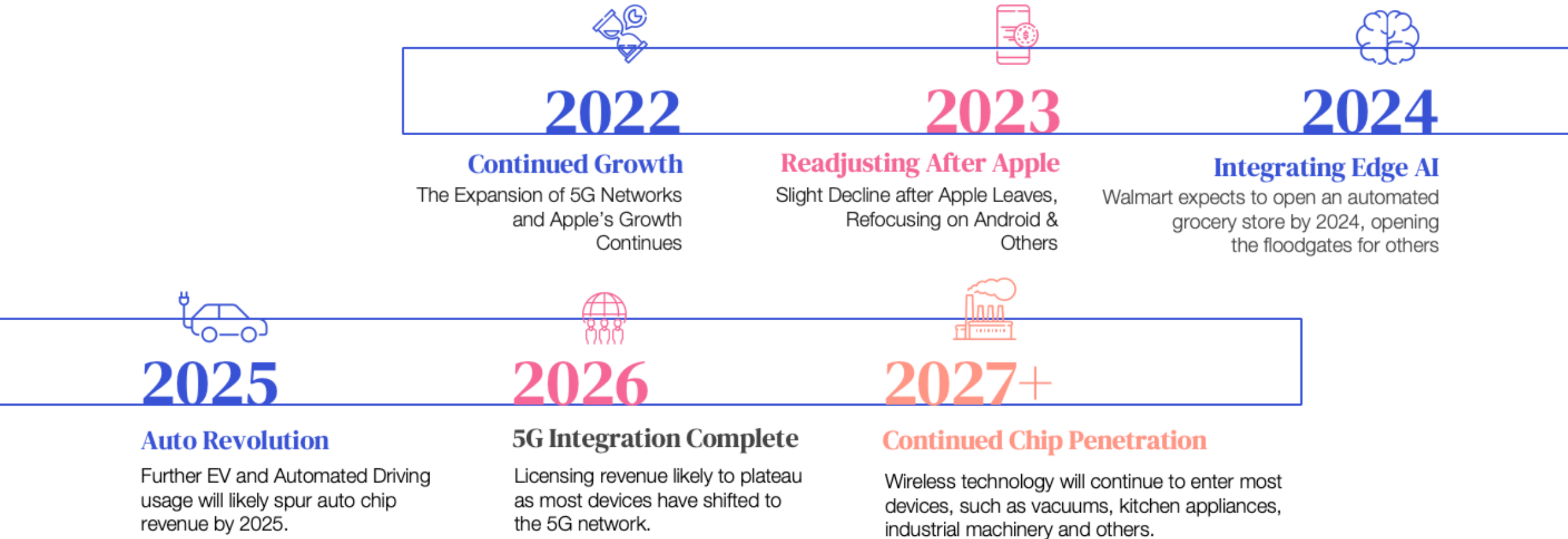
Qualcomm's multiples have steadily improved as the firm diversifies away from its' previous phone-only business model, but recent weakness in tech stocks coupled with rising rates have brought the stock below past trends. Over time, we expect Qualcomm to return to similar levels across multiples.

Focused on Reinvestment

The business remains focused on reinvesting cash into innovation. The re-investment rate, which is the ratio of Investment Spend (R&D, Capex, Acquisitions) to Pre-Investment FCF, shows Qualcomm invests almost 70% of its cash into future innovation – higher than most incumbents (Intel, Broadcom) and in-line with young growth firms (MediaTek, NVIDIA).



Valuation

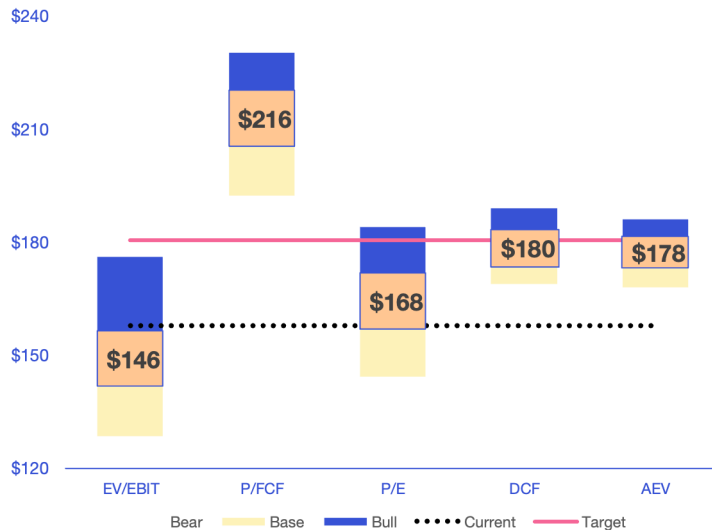


Valuation

High Upside Potential



Football Field



Our bull, base and bear case are based on the realization of our investment thesis. The following factors drive our value in each case. We used three exit multiples (EV/EBIT, P/FCF and P/E), along with two intrinsic value measures (DCF, AEV) to quantify our valuation.

Bull Price of \$194: Qualcomm Shakes of Apple Exit

Qualcomm and most analysts expect Qualcomm to barely feel the impact of Apple's departure, primarily due to the 5G rollout and increased auto and IoT revenue. We are less optimistic. Our bull case also assumes no major entrants in the 5G market and additional upside from partnerships which we have yet to quantify, such as Metaverse and AI partnerships.

Base Price of \$181: Some Turbulence with 5G Rollout

This case assumes Qualcomm will feel some impact after Apple leaves, but can make the losses up within a year. Further, we expect Qualcomm will face some competition in China with increasing global tensions and the demand for "locally made" semiconductors.

Bear Price of \$165: No Move to Metaverse

The base case assumes major innovation efforts stall and 5G competition heats up due to regulation. This means there will be no upside from Metaverse, AI and other partnerships, an outcome we don't see as likely.

BEAR

\$165

BASE

\$181

BULL

\$194

Valuation

DCF: QCOM Delivers Value and Growth



DCF Valuation	
Terminal Growth	3.00%
WACC	8.62%
PV Current Cash Flow	\$34,511
PV Terminal	\$137,710
Enterprise Value	\$172,221
Less: Net Debt	\$3,331
Market Capitalization	\$168,890
Add: Total Payout	\$33,525
By: Shares	1127
Share Price	\$179.61
Current	\$157.97
Upside	13.7%

BEAR	BASE	BULL
\$169	\$180	\$189

Qualcomm, Inc.											
Three Statement Analysis											
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Income Statement											
Operating Income											
Total Revenue	\$23,073	\$22,924	\$22,445	\$19,230	\$21,521	\$33,339	\$37,802	\$39,164	\$43,122	\$47,205	\$54,169
COGS	\$9,749	\$9,792	\$10,244	\$8,599	\$9,255	\$14,262	\$16,179	\$16,841	\$18,586	\$20,392	\$23,293
Gross Profit	\$13,324	\$13,132	\$12,201	\$10,631	\$12,266	\$19,077	\$21,623	\$22,324	\$24,537	\$26,812	\$30,877
R&D	\$5,151	\$5,485	\$5,625	\$5,398	\$5,975	\$7,176	\$8,316	\$9,008	\$9,918	\$11,329	\$12,459
SG&A	\$2,385	\$2,658	\$2,986	\$2,195	\$2,074	\$2,339	\$2,608	\$2,663	\$2,889	\$3,068	\$3,413
Operating Income	\$5,788	\$4,989	\$3,590	\$3,038	\$4,217	\$9,562	\$10,698	\$10,653	\$11,729	\$12,415	\$15,005
Net Income											
Net Interest Expense	-\$338	-\$406	\$229	\$186	\$536	-\$485	\$200	\$293	\$161	-\$363	-\$407
EBT	\$6,126	\$5,395	\$3,361	\$2,852	\$3,681	\$10,047	\$10,498	\$10,360	\$11,568	\$12,778	\$15,412
Taxes	\$1,131	\$555	\$5,377	\$3,095	\$521	\$1,231	\$1,365	\$1,450	\$1,735	\$2,044	\$2,620
Net Income	\$4,995	\$4,840	-\$2,016	-\$243	\$3,160	\$8,816	\$9,133	\$8,909	\$9,833	\$10,733	\$12,792
Balance Sheet											
Net Assets											
OWC	-\$1,229	-\$2,127	-\$5,088	-\$1,934	-\$867	-\$2,246	-\$3,211	-\$4,010	-\$4,768	-\$5,904	-\$6,584
Net LTA	\$12,404	\$16,188	\$10,177	\$10,516	\$11,456	\$15,527	\$21,758	\$22,696	\$23,602	\$27,085	\$27,843
Net Assets	\$11,175	\$14,061	\$5,089	\$8,582	\$10,589	\$13,281	\$18,546	\$18,686	\$18,835	\$21,180	\$21,259
Net Capital											
Net Debt	-\$20,593	-\$16,685	\$4,282	\$3,673	\$4,512	\$3,331	\$5,856	\$5,372	\$4,538	\$5,810	\$3,331
Equity	\$31,768	\$30,746	\$807	\$4,909	\$6,077	\$9,950	\$12,690	\$13,314	\$14,297	\$15,370	\$17,929
Cash Flow											
Free Cash Flow											
Net Income	\$4,995	\$4,840	-\$2,016	-\$243	\$3,160	\$8,816	\$9,133	\$8,909	\$9,833	\$10,733	\$12,792
Less: Change in OWC		\$898	\$2,961	-\$3,154	-\$1,067	\$1,379	\$965	\$799	\$757	\$1,137	\$679
Add: D&A		\$1,461	\$1,561	\$1,401	\$1,393	\$1,582	\$2,174	\$3,046	\$3,177	\$3,304	\$3,792
Less: Capex		\$690	\$784	\$887	\$1,407	\$1,888	\$2,609	\$3,046	\$3,813	\$3,965	\$4,550
Free Cash Flow		\$4,713	-\$4,200	\$3,425	\$4,213	\$7,131	\$7,733	\$8,111	\$8,440	\$8,936	\$11,354

Valuation

AEV: Amon's Vision Delivers Returns



AE Valuation

Terminal Growth	2.25%
Cost of Equity	9.10%
PV Current Earnings	\$34,155
PV Terminal	\$123,460
Equity	\$9,950
Market Capitalization	\$167,565
Add: Total Payout	\$33,072
Shares	1127
Share Price	\$178.03
Current	\$157.97
Upside	12.7%

BEAR
\$168

BASE
\$178

BULL
\$186

Qualcomm, Inc.

Three Statement Analysis

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Valuation - Handout

Multiples and Discount Rates



Qualcomm, Inc.									
Relative Valuation									
Company Name	Enterprise		Free Cash			EV/EBIT	P/FCF	P/E	
	Value	Market Cap	EBIT	Flow	Net Income				
Qualcomm, Inc.	\$186,661	\$178,032	\$11,127	\$7,416	\$9,043	16.8	24.0	19.7	
NVIDIA Corp.	\$579,454	\$586,925	\$9,105	\$7,156	\$8,132	63.6	82.0	72.2	
Samsung Electronics	\$321,543	\$403,222	\$45,089	\$15,703	\$32,000	7.1	25.7	12.6	
Broadcom	\$261,665	\$233,528	\$8,684	\$13,321	\$6,437	30.1	17.5	36.3	
Intel	\$200,814	\$190,651	\$21,873	\$9,662	\$19,868	9.2	19.7	9.6	
MediaTek	\$1,410,000	\$1,550,000	\$108,040	\$25,111	\$111,421	13.1	61.7	13.9	
					63%	20.1	25.8	24.0	
					55%	16.8	24.2	21.9	
					46%	14.9	21.6	18.8	

Discount Rates	
Equity & Debt Portion	
Equity	
Share Price	\$157.97
Shares Outstanding	1,127
Market Cap	\$178,032
Debt	
Total Debt	\$15,745
Cash	\$7,116
Value	
Firm Value	\$193,777
Debt Portion	8.1%
Equity Portion	91.9%
Cost of Equity	
Beta	1.20
Risk Free Rate	2.5%
Market Premium	5.5%
Cost of Equity	9.1%
Cost of Debt	
Interest Expense	\$559
Interest Rate	3.6%
Tax Rate	12.0%
Cost of Debt	3.1%
WACC	
WACC	8.6%

Summary

The Chips Are Facing Up

Qualcomm

- ✔ Qualcomm has been and will continue to be the leader in wireless technology
- ✔ The firm is well positioned to benefit from the growing use of wireless in every industry
- ✔ Qualcomm has more potential than competitors due to partnerships and innovation
- ✔ We believe this company is both a value and growth play

Target

\$181

Upside

14%