

UNIVERSIDAD ESAN



FINANCIAL ANALYSIS (“SELL-SIDE”): *CISCO SYSTEMS, INC.*

In collaboration with:



MSc In Finance

EDHEC Business School – Nice, France

**Thesis presented in partial satisfaction of the requirements to obtain the degree
of *Magíster en Administración* by:**

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has been approved by



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PRESENTATION OF FINANCIAL AND OTHER INFORMATION

The information regarding Cisco Systems, Inc. included in this analysis has been mainly extracted or derived from: (i) the unaudited quarterly report for the quarterly period ended January 23, 2021 (“**Q2 2021**” or “**HY 2021**”), as filed on Form 10-Q with the Securities and Exchange Commission on February 16, 2021; and (ii) the audited annual report for the fiscal year (“**FY**”) ended July 25, 2020, as filed on Form 10-K with the Securities and Exchange Commission on September 3, 2020 (the “**Annual Report**”).

Certain market, economic and industry data and forecasts used in this analysis were obtained from data compiled by Bloomberg L.P., Gartner Inc. research and other publicly available information.

Except as otherwise indicated, data and figures without further specification refer to the FY 2020.

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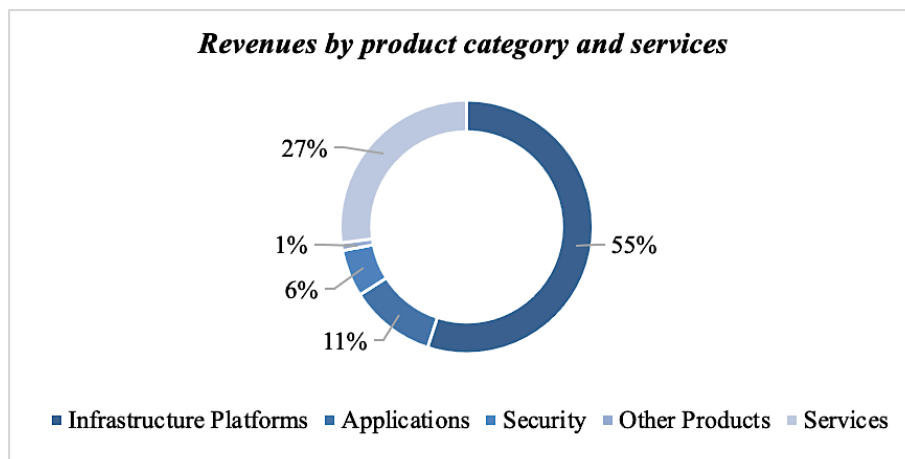
PART I – CISCO’S BUSINESS AND FINANCIAL ENVIROMENT

1.1 COMPANY & BUSINESS OVERVIEW

Cisco Systems, Inc. (“Cisco” or the “Company”) is an U.S. company, listed on NASDAQ stock exchange (symbol: CSCO) and included in the S&P 500, DJIA and NASDAQ-100 indexes. The Company was incorporated in California in 1984 and it is active in the information technology (also referred to as “IT”) sector, mainly competing in the networking and communications equipment market. More precisely, the Company designs, manufactures (through third parties) and sells a broad range of internet protocol (also referred to as “IP”) based products, grouped by Cisco in the following four categories:

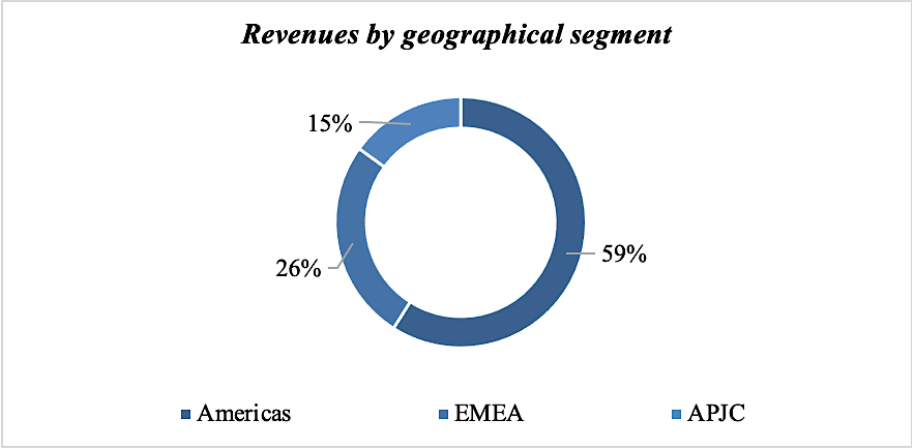
- *Infrastructure Platforms* (55% of revenue): networking technologies (both hardware and software) related to switching, routing, wireless and data center products, designed to deliver networking capabilities and transport and/or store data. The main products of this category are represented by the Catalyst 9000 (“Cat 9K”) series of switches, the single unified silicon architecture Cisco Silicon One, Cisco DNA software and the Cisco 8000 series of routers.
- *Applications* (11% of revenue): hardware and software utilizing the networking and data center platforms to provide their functions. The main products of this category are represented by Cisco Webex software and Meraki cloud networking offering.
- *Security* (6% of revenue): products allowing customers to cope with cybersecurity risks and threats. One of the main products of this category is represented by the SecureX security platform.
- *Other Products* (1% of revenue): cloud and system management and emerging technologies products.

The Company provides also services related to the above-mentioned products and their use, including technical support services and technology advisory services (27% of revenue).



Headquartered in San Jose (California, U.S.A.), Cisco is nowadays a multinational corporation, which conducts its business and employ approx. 77,500 people around the whole world. The company manages its business by geography and organizes it in the following three segments:

- *Americas* (59% of revenue);
- *Europe, Middle East and Africa – EMEA* (26% of revenue);
- *Asia Pacific, Japan and China – APJC* (15% of revenue).



Company’s main clients are grouped by Cisco in the following four categories, on the basis of their IT, collaboration and networking requirements:

- *Enterprise businesses*: large organizations having 1,000 or more employees, with unique and distinctive IT, collaboration and networking needs.
- *Commercial businesses*: organizations having less than 1,000 employees, with less complex IT, collaboration and networking needs.
- *Service providers*: organizations offering (to their clients) data, voice, video and/or mobile/wireless services (e.g. wireline carriers and wireless or broadcast providers). Such clients’ category usually requires lots of network design, deployment and support services, in light of the greater scale and higher complexity of its networks.
- *Public sector entities*, such as governments and educational institutions. In light of their public nature, also these clients have unique and distinctive IT, collaboration and networking needs.

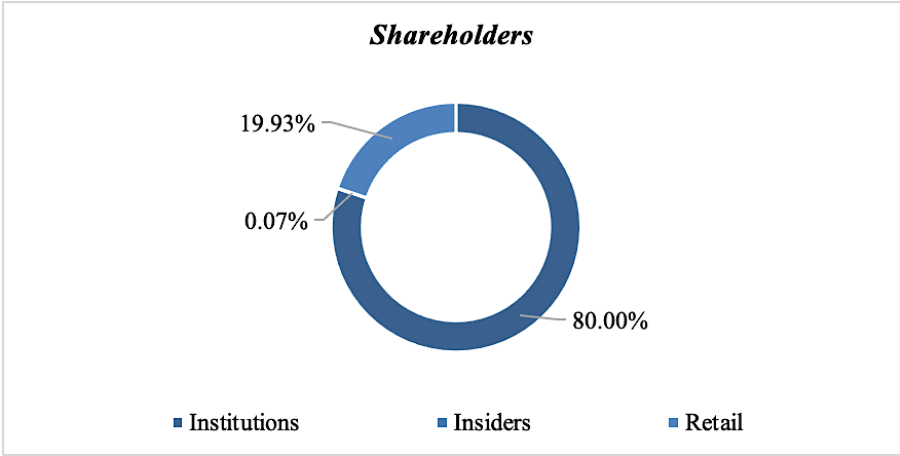
Cisco does not disclose how much each clients’ category accounts in terms of sales, limiting such disclosure to the fact that no single customer accounts for 10% (or more) of Company’s revenues; however, according to Gartner research, *Enterprise* and *Commercial* businesses categories account for more than approx. 65% of Cisco’s sales, which are therefore highly correlated to companies’ IT spending.

1.2 MANAGEMENT & MAJOR SHAREHOLDERS

Cisco is managed day-to-day by an executive leadership team (“ELT”), comprised of 15 key senior managers, including Mr. Charles “Chuck” Robbins (Chairman & CEO), Mr. R. Scott Herren (CFO), who succeeded Ms. Kelly A. Kramer in December 2020, Ms. Gerri Elliott (Chief Sales and Marketing Officer), Mr. Michael D. Timmeny (Chief Government Strategy Officer), Mr. Mark Chandler (Chief Legal Officer and Chief Compliance Officer) and Ms. Stella Low (Chief Communications Officer).

The members of the ELT have a strong knowledge of Cisco’s business and have worked in the industry for several years. Throughout the whole year, the ELT provides detailed business and strategy updates to Cisco’s Board of Directors, which is in charge of overseeing management’s formulation and execution of the Company’s strategy. We explore further Cisco’s corporate governance in part III below.

Nowadays, Cisco is a “truly” public company in light of the fact that there are no reference shareholders which can control the Company. The shareholders owning more than 2% of the Company are indeed the following: Vanguard Group (7.8%), Blackrock (7.8%), State Street (4.2%) and Bank of America (2.1%). According to data compiled by Bloomberg, approx. 80% of the shares outstanding are held by institutional shareholders, while the insiders hold approx. 0.07% of Cisco’s share capital. Retail investors therefore hold approx. 20% of the outstanding share capital.



1.3 INDUSTRY FRAMEWORK & CISCO’S MARKET POSITION

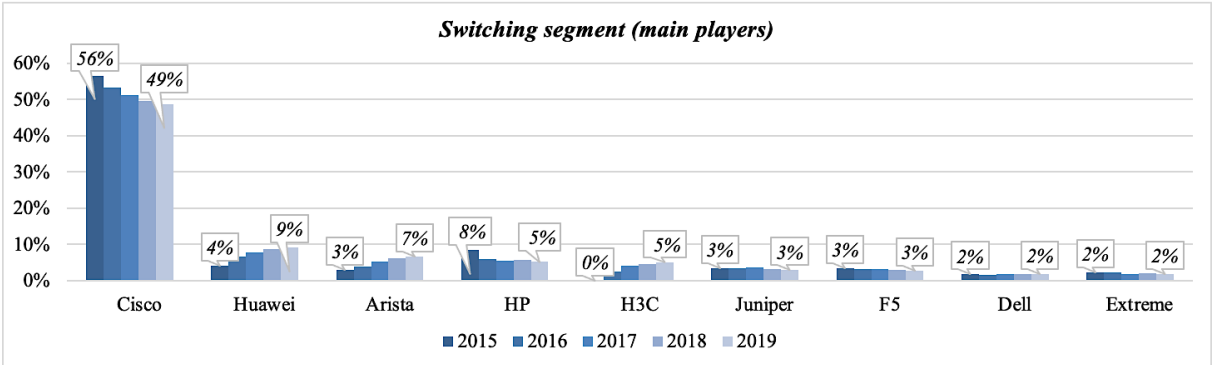
The services and the IP-based products sold by Cisco are related to the networking and communications equipment market, which – according to the Global Industry Classification Standard (GICS) – can be considered an industry belonging to the “technology hardware & equipment” industry group (IT sector). Cisco is the current world’s largest hardware and software supplier within the networking and communications equipment industry, comprising over 450 companies globally: indeed, according to data compiled by Bloomberg, Cisco makes up approx. 20% (i.e. approx. \$52 billion) of the total revenues (i.e. approx. \$260 billion) of such industry in calendar year (“CY”) 2019.

The networking and communications equipment market could be split into three main business segments (switching, routing and wireless), which we explore better below.

Switching segment

Switches connect together different devices, creating therefore a computer network, which allows such connected devices to share information and “talk” to each other, regardless of their position in a building or on a campus. In comparison with Ethernet hubs, switches ease the sharing of data packets by networked devices, reducing the unnecessary traffic of data packets.

The Company’s portfolio includes both campus switching and data center switching offerings.

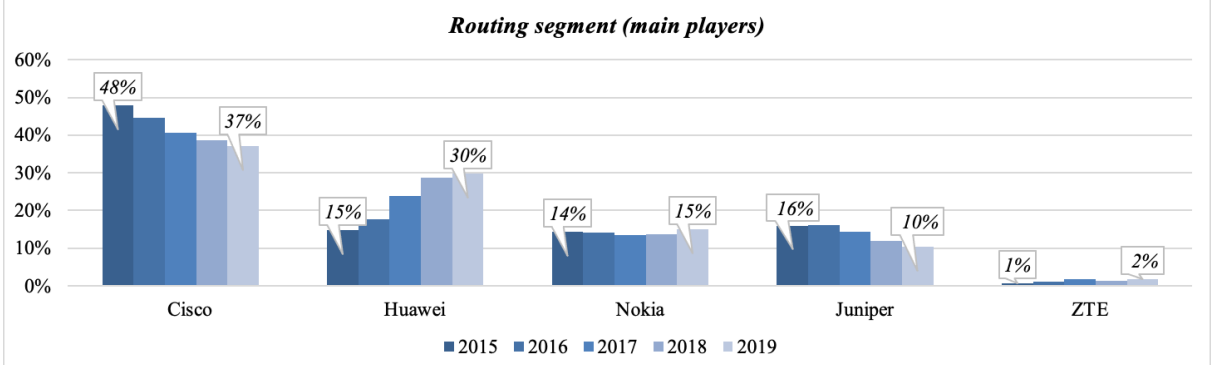


Source: Bloomberg

Cisco is the global leader in the switching market: according to data compiled by Bloomberg, the Company had indeed approx. 49% of the market share in CY 2019. However, as we can see from the chart reported above, Cisco’s market share declined of approx. 14% in the period CY 2015 – 2019, while Huawei and Arista grew more than 100% in this business segment.

Routing segment

A router connects multiple switches, and their respective networks, to each other, creating a larger computer network, but – most importantly – allows all networked devices to access the Internet (sharing a single Internet connection).

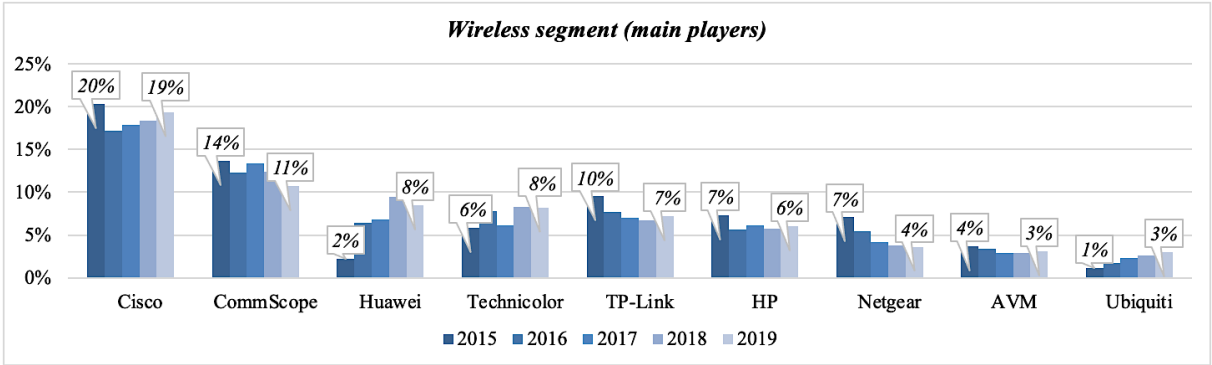


Source: Bloomberg

The Company also dominates this business segment worldwide: data compiled by Bloomberg show that its market share was approx. 37% in CY 2019. Cisco competes in this market mainly with four other companies (Huawei, Nokia, Juniper and ZTE): in particular, Cisco lost market share in the period CY 2015 – 2019 (a decline of approx. 22%), as displayed by the increasing market share of the two major Chinese competitors of the Company in this business segment, Huawei and ZTE.

Wireless segment

A wireless access point allows devices to connect, without cables, to a (wireless) computer network¹: while a router provides the bandwidth, an access point extends that bandwidth so that the (wireless) computer network can support many devices; furthermore, thanks to access points, connected devices can access the (wireless) computer network from farther away. Therefore, access points act as an amplifier of the (wireless) computer network, extending it.



Source: Bloomberg

Cisco has a global leadership position also in this segment (approx. 19%), as shown by the graph reported above. While Company’s market share declined a little during the overall period considered, certain competitors (namely, Huawei, Technicolor, and Ubiquiti) significantly increased their position.

* * *

As shown by the data reported above, the networking and communications equipment industry is relatively concentrated, since few companies control the bulk of the global market. However, the industry competition is quite high: over the period comprised between CY 2016 and CY 2019, we observe indeed a constant deterioration of Cisco’s leading market position across all three business segments (more significant in switching and routing markets) in favor of Huawei – a Chinese multinational technology company producing a very broad range of telecommunications equipment and consumer electronics – and other smaller competitors. One of the reasons behind such lost market share is the growing competition in the hardware market: Cisco needs therefore to increase its focus on the

¹ The most common computer wireless networks are wireless local area networks (“WLANs”): most modern WLANs are marketed under the “Wi-Fi” trademark, based on IEEE 802.11 family of standards.

software field, coherently with its long-term strategy, better explained in para. 1.4 below. In such respect, we should bear in mind that – during the past decade – products and services offered in the whole IT sector have gone through two major transitions:

- *software's prominence on hardware*: the shift from proprietary hardware to proprietary software and the following greater reliance on software took place also because large hyperscale public-cloud providers (such as Google Cloud, Amazon AWS and Microsoft's Azure) significantly changed IT architectures, prompting them to shift toward network automation and acceleration. One of the consequences of such move is software disaggregation from networking equipment.
- *software-as-a-service ("SaaS") consumption model*: the software is not sold to customers by way of a perpetual license against a single up-front payment (*una tantum*), but throughout a repeatable subscription model which implies the payment of a recurrent (usually, monthly, or annual) fee.

Hardware sale and supply were therefore greatly affected by these new trends: the result was the development of a new consumption model also for the equipment, *hardware-as-a-service ("HaaS")*, through which the gear is offered to customers as part of an "all-in-one package" IT solution (including hardware, software and their monitoring, maintenance, and upgrade), against a periodic fee.

With reference to the networking and communications equipment market, the development of successful SaaS and HaaS models is not easy due to the rapid changes in technology architectures and general low lifecycle of the equipment.

The above-mentioned trends have also reduced the barriers to entry for new players in the networking and communications equipment industry (since the barriers are lower in the field of software relative to hardware), increasing therefore the competitive risks for the industry, as better illustrated in part III below.

As a final remark, we note that Chinese companies like Huawei and ZTE could lose the gained market share (and Cisco could try to retrieve it) due to the recent security bans imposed by U.S. institutions², which are forcing their allies to adopt similar decisions³: this could also cause a replacement of the already installed Huawei equipment by several enterprises around the whole world.

² In November 2020, the U.S. Federal Communications Commission (FCC) labelled the two Chinese companies as a "national security threat" and banned them from receiving U.S. subsidies: see, for example, the WSJ article "*FCC Deals Blow to Huawei and ZTE, Cuts Off Telecom Subsidies*" (22.11.2020) and Reuters article "*U.S. FCC commissioner urges tougher steps on Chinese network equipment*" (30.03.2021).

³ See, for example, the NBC News article "*After months of U.S. pressure, U.K. bans China's Huawei from its 5G network*" (14.07.2020) and WSJ article "*Washington Asks Allies to Drop Huawei*" (23.11.2018).

1.4 BUSINESS MODEL & COMPETITIVE STRATEGY

Cisco's long-term objectives, as identified by ELT, can be summarized as follows:

- *transforming the business model* towards SaaS offerings.
- *transforming infrastructure*, delivering more intent-based networking platforms and multi-cloud architectures.
- *focusing on applications*, delivering more solutions for navigating and monitoring complex IT environments.
- *security is foundational*, requiring an effective cybersecurity architecture combining network, cloud and endpoint-based solutions.
- *empowering teams*, delivering solutions allowing clients' teams to increase collaboration and interact with their customers to build better relationships in a post COVID-19 pandemic environment, characterized by a greater use of remote work.

We explore below the most important goals of the Company.

Transforming the business model

Until FY 2014, Cisco's business model was focused on manufacturing the hardware, as well as selling its products and services as an "one-time perpetual sale". However, when it was clear that the trends depicted in para. 1.3 above did not represent a simple transitory phenomenon in the IT sector, Cisco was forced to transform its business model, adjusting it to the customers' changing needs. For these reasons, the Company set in FY 2017 a three-year goal for:

- 50% of total revenue to come from software and services: achieved 51% in FY 2020.
- 30% of total revenue to come from software: achieved 29% in FY 2020.
- 66% of software revenue to be sold as subscription: achieved 74% in FY 2020.

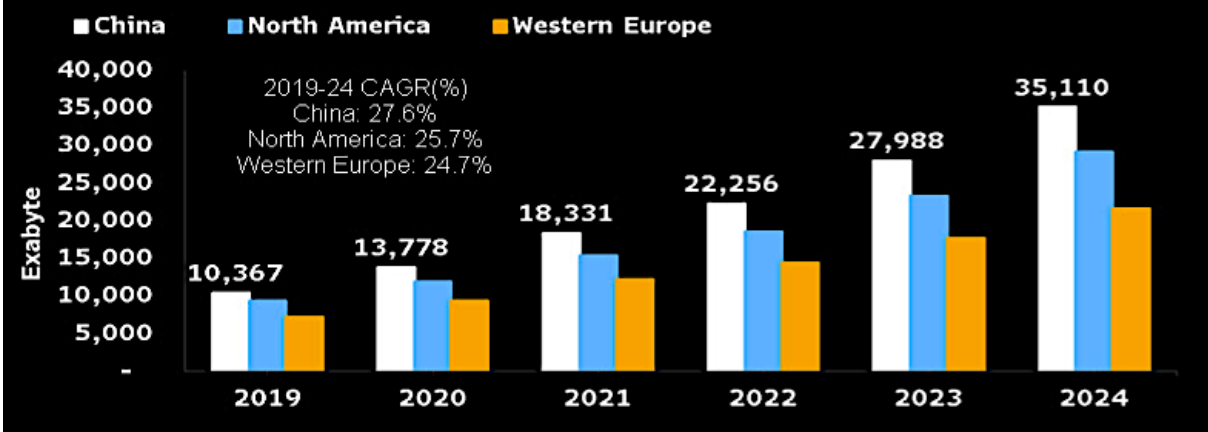
As an example of such shift to software and services, the Company offers 3-, 5- and 7-year subscription to its DNA software, bundled with the Catalyst 9000 ("Cat 9K") hardware.

Cisco has been therefore able to meet its targets, successfully shifting half of its revenue to software and services, but the overall flat revenue growth⁴ requires a further long-term business transformation, accelerating the shift to the repeatable subscription model also for the hardware portfolio (HaaS), which should improve recurring sales and allow the Company to get back to strong growth.

⁴ Revenue CAGR for the period FY 2010 – FY 2020 is equal to 2.10%. See more on this in part II below.

Transforming infrastructure

Campus switches market has been adversely affected by the COVID-19 pandemic outbreak, due to the reduction in campus network spending by companies and the increased work-from-home trends; however, Cisco’s products related to data center network architectures seem to be well positioned to gain from this technology shift. Therefore, the Company should focus on such products, which can provide resilience to tackle the headwinds originating from the campus switching segment: in particular, we note that the global data center market keeps growing and growing, thanks to the increasing prominence of hyperscale public-cloud providers⁵, whose role has become even more important after the COVID-19 pandemic outbreak, as well as the increased use (and importance) of data in managing key resources – given the real assets’ light trajectory in the context of the future global economy – as shown from the growth estimates of data usage reported in the graph below.



Source: Bloomberg

Focusing on applications

Businesses can make all the right moves to defend their leadership position through the impact and repercussions of the COVID-19 pandemic, but their future competitive position depends in any case on capital expenditures and R&D management. Companies operating in the IT sector are usually asset-light businesses and, therefore, capital expenditures are relatively low, while R&D expenses are much higher, given the large amount of R&D needed to keep pace with the rapidly evolving IT environment. In such respect, Cisco does not make an exception: for example, during the last three fiscal years, R&D expenses were, on average, almost three times higher than the number of investments made by the Company in PP&E.

Nowadays, Cisco shall keep pace with the next-generation network architectures and capture the new trends emerging out from the COVID-19 pandemic (e.g. workplace changes and remote work): to this

⁵ Such as Google Cloud, Amazon AWS and Microsoft’s Azure.

end, the Company has already begun to rebalance its R&D investments towards strategic growth areas⁶ and to optimize its product offerings for application to certain specific industries, such as education and healthcare. In particular, we believe Cisco should exploit the opportunities offered by the incoming era of “intelligent connectivity”⁷, whose development has been accelerated by the outbreak of the COVID-19 pandemic, which has rocketed us into a new digital environment. We deem this environment to be here to stay as the “new normal”, leading to an acceleration in projects aimed at speeding up the ongoing digitalization process, in which 5G will be the catalyst⁸ and have a far-reaching social and economic impact, in light of the fact that its features can be exploited – thanks to the IoT – in numerous industries⁹: it is therefore likely that 5G will exponentially increase data network traffic volumes, implying the need of more computing infrastructure, in order to support network virtualization and provide edge-computing capabilities.

We believe the 5G opportunity for Cisco could be significant as lots of products in the *Applications* segment (such as integrated voice, video, and data applications) have good long-term growth prospects as data network traffic increases: therefore, it is mandatory for the Company to focus also on this segment, not only through organic growth but also through external growth. M&A deals have been indeed at the core of Cisco’s development strategy¹⁰: the acquisitions completed by the Company have focused on filling technology gaps in its portfolio and boosting its software-driven revenues. Among the most transformative, it is worth mentioning Meraki in 2012 (*Infrastructure Platforms*, approx. \$1.2 billion), Sourcefire in 2013 (*Security*, approx. \$2.7 billion), Jasper in 2016 (*Applications*, approx. \$1.4 billion), AppDynamics in 2017 (*Applications*, approx. \$3.7 billion), BroadSoft in 2017 (*Applications*, approx. \$1.9 billion) and Acacia Communications in 2019 (*Applications*, approx. \$4.5 billion). We think that Cisco can further explore new M&A opportunities in the *Applications* segment, also thanks to its

⁶ Such as cloud security/collaboration, network automation, optical networking, multi-cloud/hyperscale-cloud networks, artificial intelligence (“AI”), fifth generation of mobile network technology (“5G”), Wi-Fi 6 and 400G Ethernet speed.

⁷ Originated from the combination of 5G, AI and the connection of numerous devices through the Internet of Things (“IoT”), enabling the provision of new disruptive digital services.

⁸ According to Qualcomm’s forecasts, global 5G value chain could support 22 million jobs in 2035 and generate \$13.2 trillion in global sales.

⁹ Such as automotive and healthcare, which could rely on 5G’s very low latency (a feature not present in 4G) for improving safety of self-driving cars (whose systems shall monitor the conditions of roads in real time and, when the driving is abnormal, they need to make prompt emergency responses in time: if the delay is too long, an accident may occur) and telemedicine (e.g. controlling scalpel-wielding robots from afar; accessing immediately to patient data collected from personal health monitoring devices).

¹⁰ 174 acquisitions since 1993: a list of them is available at <https://www.cisco.com/c/en/us/about/corporate-strategy-office/acquisitions/acquisitions-list-years.html>.

strong balance sheet (i.e. high amount of cash and low leverage, as better illustrated in part II below); however, the Company could be discouraged from pursuing new acquisitions because of the current high valuation multiples in the IT sector.

Security is foundational

Network, cloud and email security represent a secular/macro trend and a growing need for all enterprises, in light of the increasing data network traffic volumes (which will be further boosted by the incoming era of “intelligent connectivity”), value of such digitized data (nowadays, “big data” is one of the most strategic assets for certain firms, especially in the IT sector), their storage on cloud environments and sophistication of new cyber-attacks.

Therefore, the development of the security segment and the related products (i.e. “unified threat management” firewall solutions) is another key initiative for Cisco, which should aim to be also the security partner of choice for its existing customers (in the other business segments).

1.5 SWOT ANALYSIS

We report below the summary of our SWOT analysis on Cisco and its business and financial environment.

<p style="text-align: center;"><i>Strengths</i></p> <ul style="list-style-type: none"> • Global industry leader; • Experienced ELT. 	<p style="text-align: center;"><i>Weaknesses</i></p> <ul style="list-style-type: none"> • Low revenues growth; • Business model transformation still in progress (SaaS & HaaS).
<p style="text-align: center;"><i>Opportunities</i></p> <ul style="list-style-type: none"> • Incoming “intelligent connectivity” era (5G, IoT, AI); • Data centers & network security growth. 	<p style="text-align: center;"><i>Threats</i></p> <ul style="list-style-type: none"> • Competitive risks (low barriers to entry in the software industry; pricing pressure); • Insourcing of network infrastructure capabilities by large enterprises.

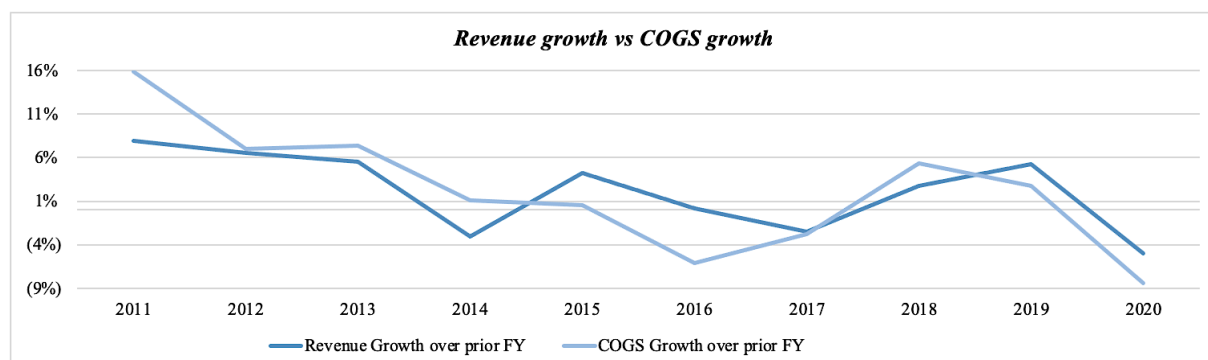
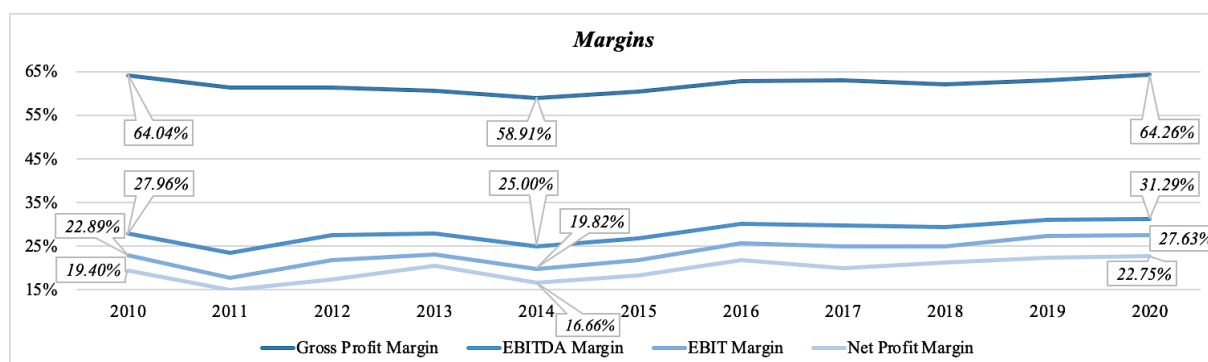
PART II – FINANCIAL STATEMENT ANALYSIS

In performing the financial statement analysis of the Company, we used the financial information included in Cisco’s annual reports from FY 2010 to FY 2020 in order to have 10 years of financial data also for the ratios and multiples requiring an average in their numerators and/or denominators.

The preparation of financial statements was carried out by the Company in conformity with the accounting principles generally accepted in the U.S.A. (GAAP).

We have reported in the Appendix all the data of the financial statement analysis carried out; throughout this text we included certain graphs plotted on the basis of such data.

2.1 MARGIN ANALYSIS



As we can see from the data reported in the Appendix and the graphs above, there has been a constant decline of the Company’s profitability across all the margin ratios from FY 2010 to FY 2014, mainly due to a significant increase in COGS (+ 34.56%, from \$14,397 million to \$19,373 million), which have grown at a higher rate than revenues (+17.74%, from \$40,040 million to \$47,142 million). Such downtrend has been inverted by the Company starting from FY 2015, also thanks to the beginning of

the transformation in Cisco's business model¹¹: the increase has been especially considerable for the EBIT margin, being also the profitability ratio that has grown more in the overall period considered (i.e. FY 2011 – FY 2020). At any rate, it is worth noting that – despite market positioning and significant capital deployed on M&A by Cisco¹² – revenue CAGR for the period FY 2010 – FY 2020 is equal to only 2.10% (from \$40,040 million to \$49,301 million): therefore, it is of paramount importance for Cisco to keep pace with the long-term business transformation better illustrated in part I above. Finally, we note that the outbreak of the COVID-19 pandemic has negatively impacted Company's revenues, declined (-5.02%) for the first time since FY 2017 (a trend confirmed by the results of HY 2021¹³), as enterprises reduced the network spending.

2.2 EFFICIENCY AND LIQUIDITY ANALYSIS

Cisco has a unique revenue recognition policy, which was recently changed, posing a potential threat considering the competitive landscape and the low barriers to entry in the software industry.

The Company relies indeed on independent third-party companies for its hardware manufacturing needs (e.g. printed-circuit board assembly, in-circuit test, product repair and product assembly) through short-term agreements, renewable on an as-needed basis: this provides flexibility and bargaining power to Cisco.

Products and services are sold either directly by Cisco to customers or through indirect channels (including system integrators, service providers, resellers and distributors), with a substantial portion sold through the latter method. Distributors typically hold inventory and, since FY 2019, according to the Annual Report: “*in connection with the adoption of Accounting Standards Codification (ASC) 606, Revenue from Contracts with Customers, a new accounting standard related to revenue recognition, we started recognizing revenue from two-tier distributors on a sell-in method¹⁴. Prior to this, we recognized revenue based on a sell-through method¹⁵ using point of sales information provided by these distributors*”. Because of this, distributors have gained a higher bargaining power (given competing players) and the related commercial agreements with Cisco include business terms that allow them to hold a high portion of inventory, receive credits for changes in selling prices and receive certain rebates.

¹¹ See para 1.4 above for more details.

¹² See para 1.4 above for more details.

¹³ \$23,889 million (HY 2021 sales) vs. \$25,164 million (HY 2020 sales), for a decline of 5.07%.

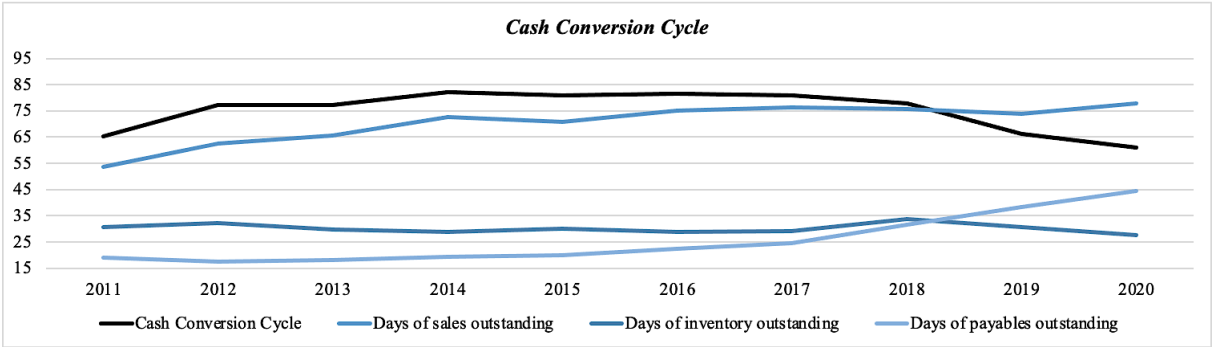
¹⁴ Revenues are recognized when products are delivered to distributors.

¹⁵ Revenues are recognized when distributors resell products to end-users.

The above could have major effects on inventory management and excess inventory on hand in case of delayed shipments of the goods to distributors caused by possible manufacturing issues. Timing of large orders and revenue recognition is also difficult to predict given longer manufacturing and customer lead times. We can verify our expectations through the calculations reported in the table below as well as in the Appendix.

	FY 2019	FY 2020
Revenue (‘m)	\$51,904	\$49,301
Average Account & Current Financing Receivables (‘m)	\$10,544.50	\$10,544.50
Accounts Receivable Turnover	4.92x	4.67x
Days of sales outstanding	73.95	77.93
Average Inventory (‘m)	\$1,614.50	\$1,332.50
Inventory Turnover	11.92x	13.22x
Days of inventory outstanding	30.55	27.53

As envisaged, there was an increase in the number of days of sales outstanding and a decrease in the number of days of inventory outstanding from FY 2019 to FY 2020 (though purchase commitments with contract manufacturers was not taken into consideration in our calculations) and this could have implications for revenue sustainability and meeting working capital requirements in the future.



As far as the overall cash conversion cycle (“CCC”) is concerned, Cisco’s management seems to have recovered its control, after a relevant spike of the average number of days during the period FY 2011 – FY 2018. In particular, company’s management was able to increase the number of days of payables outstanding (from 19 to 44, i.e. +132%) and decrease the number of days of inventory outstanding (from 30 to 27); however, the number of days of sales outstanding increased from 54 to 78, producing therefore only a modest improvement in CCC, which is currently equal to 61 days (65 days in FY 2010). Therefore, in our opinion, ELT could do better in terms of CCC management.

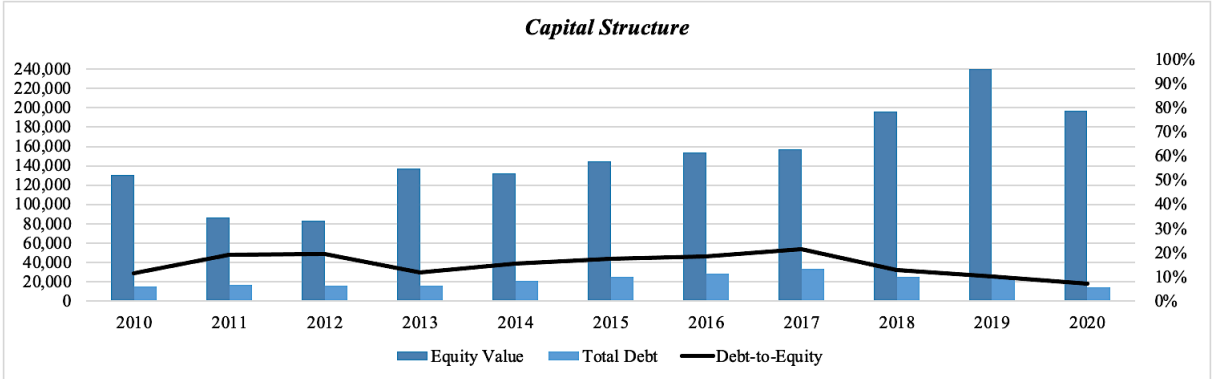
2.3 SOLVENCY ANALYSIS

As mentioned above, companies operating in the IT sector are usually asset-light businesses and, therefore, funded predominantly with equity, since their balance sheets do not include so many viable collaterals. In such respect, Cisco does not make an exception: PP&E value is indeed equal to \$2,453 million, representing 2.59% of total assets. Total book value of common equity is \$37,920 million, while

the market capitalization of the Company at the end of FY 2020 was equal to \$196,596.8 million¹⁶. Cisco did not issue preferred equity.

Cisco has 12 fixed-rate senior unsecured notes outstanding in an aggregate principal amount of \$14,500 million. Such notes bear fixed-rate interest, payable semi-annually, and are redeemable by the Company at any time, subject to a make-whole premium. The total amount of long-term debt is equal to \$14,583 million, due to unaccreted discount/issuance costs and hedge accounting fair value adjustments. The current portion of long-term debt is approx. 20%, representing also the total short-term debt of Cisco; the Company has established a commercial paper program¹⁷, but no commercial paper notes were outstanding as of the end of FY 2020. Finally, Cisco entered into a credit agreement for a \$2.75 billion unsecured revolving credit facility, expiring at the end of CY 2021: however, the Company did not borrow any funds under this loan during FY 2020.

Based on the data reported above, debt-to-equity ratio of Cisco is therefore equal to 7.42%, while debt-to-cap ratio is equal to 6.91%¹⁸.



Over the timeframe considered (i.e. FY 2011 – FY 2020), the Company – thanks to a significant increase in equity value (from \$130,460.85 to \$196,596.80 million)¹⁹ – has progressively reduced the proportion of debt used (debt-to-equity ratio from 11.72% to 7.42%), even though the overall change in absolute terms is not so much significant (from \$15,284 to \$14,583 million).

Considering almost \$29.5 billion in cash, cash equivalents and short-term investments, net debt is negative (-\$14,836 million), as well as the net debt/EBITDA ratio (-0.96x).

¹⁶ For the market price per share we used the closing market price as of July 24, 2020 (Friday), equal to \$46.40, multiplied by the number of outstanding shares at that date (4,237 million).

¹⁷ Under this program, the company can issue, on a private placement basis, short-term unsecured commercial paper notes up to a maximum aggregate amount outstanding at any time of \$10 billion.

¹⁸ Calculated as “total debt / total debt + equity value”

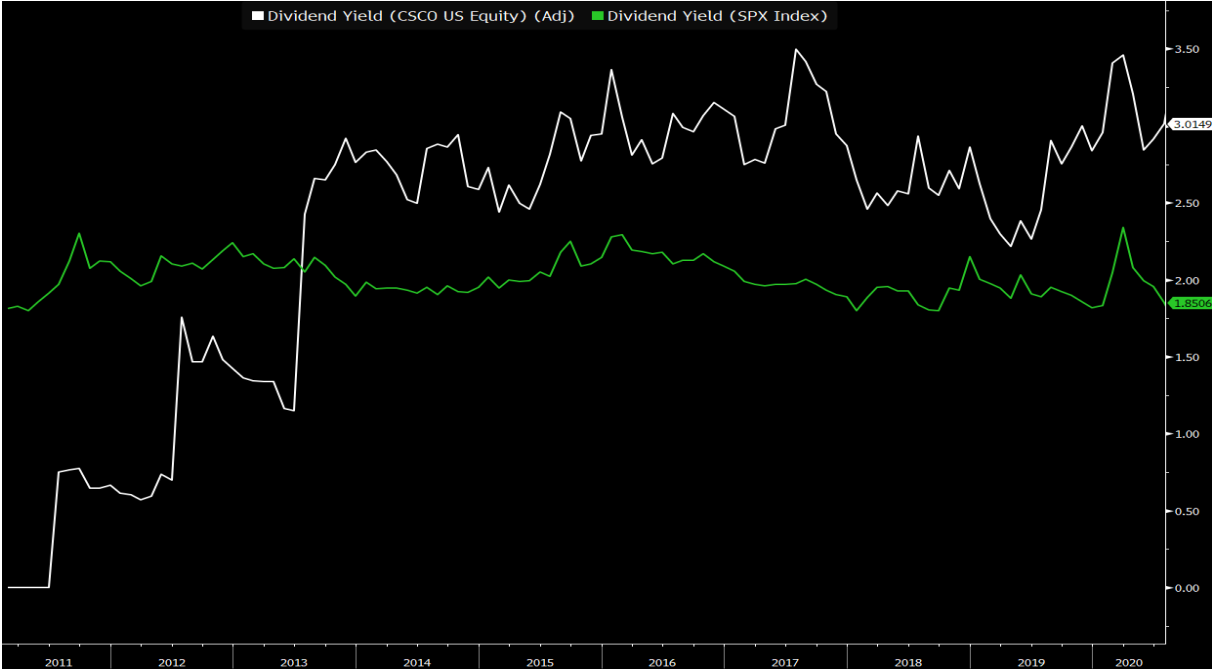
¹⁹ Equity value calculated using the closing market price at the end of the relevant FY.

In light of such low leverage ratios and negative net debt, it is not a surprise that Cisco’s credit rating is very positive (Moody’s: A1, S&P: AA-). Therefore, the Company is for sure able to meet its financial obligations without any concern and could maybe rely more on debt financing (last issuance in 2016).

2.4 DIVIDEND ANALYSIS

The dividend policy that a company chooses is determined by different factors, including, but not limited to, cash flow generation and robustness of its financial statements. Indeed, payment of dividends should be made only when there is cash left after the payment of the financial obligations: therefore, we should look at financial performance metrics in order to determine if a company can afford to pay dividends or not. It follows that companies with free cash flow in excess of average dividend payments provide higher quality dividend growth opportunities because they generate the necessary cash to support future higher dividends.

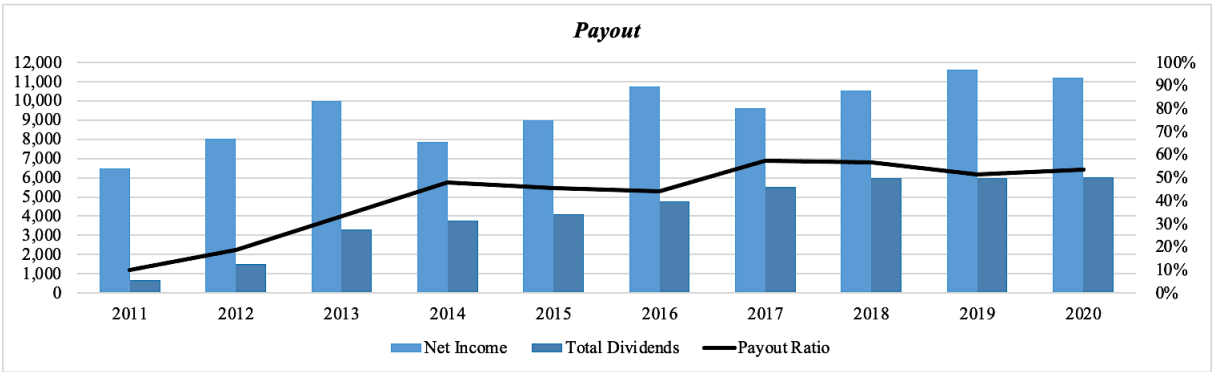
Despite the overall weak trend in sales, the constant increase in Cisco’s revenue from software and services seem to provide a stable foundation for a future healthy growth if the right investments are made; furthermore, strong operating cash flows²⁰, as well as margins’ growth, show the good management of the Company in the previous fiscal years and also during the outbreak of the COVID-19 pandemic. Therefore, we can reasonably expect that Cisco will continue to distribute stable dividends also in the coming years, despite the impact and repercussions of the COVID-19 pandemic.



Source: Bloomberg

²⁰ \$15.4 billion in FY 2020, \$15.8 billion in FY 2019 and \$13.6 billion in FY 2018.

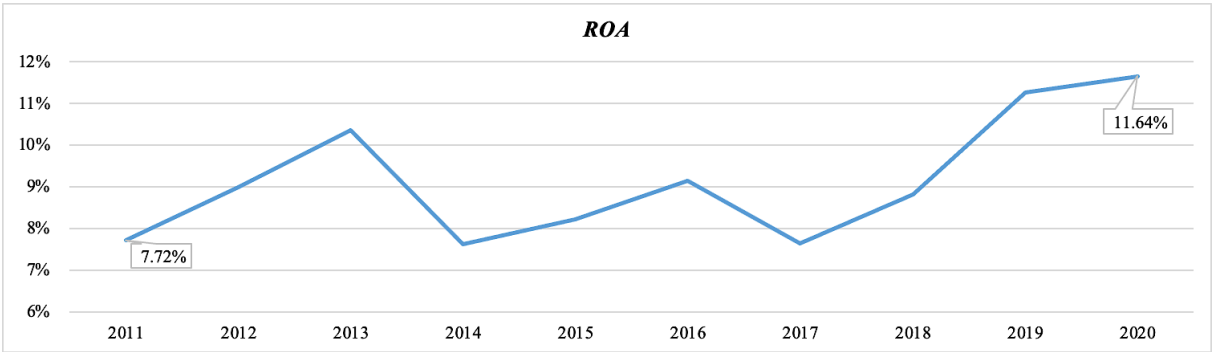
Cisco paid dividends for the first time in FY 2011 and, according to data compiled by Bloomberg, the Company has outpaced the dividend yield of the S&P 500 index starting from FY 2013, as shown in the graph above.



Cisco’s shareholders benefited of such a great dividend gain also thanks to management’s decision to increase the payout ratio, as it rose from approx. one-third in FY 2013 (33%) to more than half of the net income, starting from FY 2017 (57% in FY 2017 and 54% in FY 2020): this allowed dividend per share to rise at a 12.65% average rate during the period comprised between FY 2014 and FY 2020.

2.5 RETURN ANALYSIS

Return on assets (ROA)

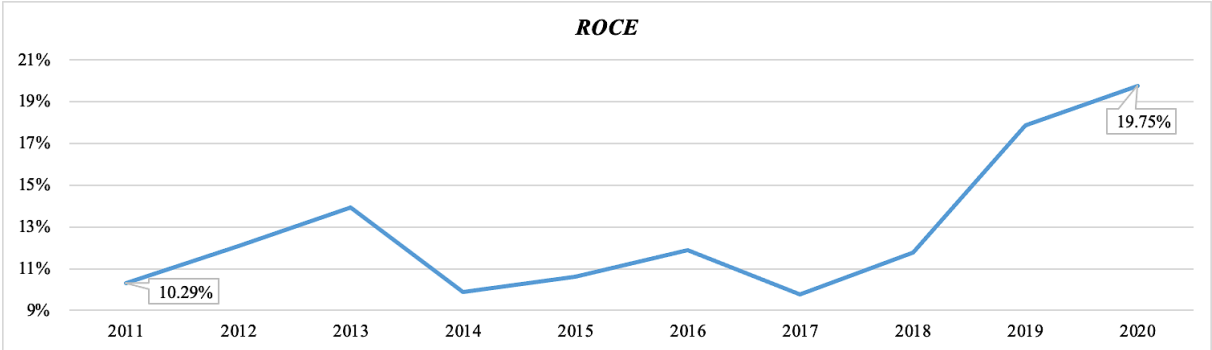


ROA shows how much the business’ assets are profitable – i.e. how much revenue is generated for each dollar of assets – and we computed it as “net income / average total assets²¹” (considering interest expense in the numerator, in light of the fact that debt is not relevant in Cisco’s capital structure). In FY 2020, Cisco’s ROA was equal to 11.64%, meaning therefore that for each \$100 invested in Company’s average assets, Cisco earned \$11.64 in profits. Over the timeframe considered (i.e. FY 2011 – FY 2020),

²¹ Average total assets calculated as an average between total assets at the start and at the end of the FY.

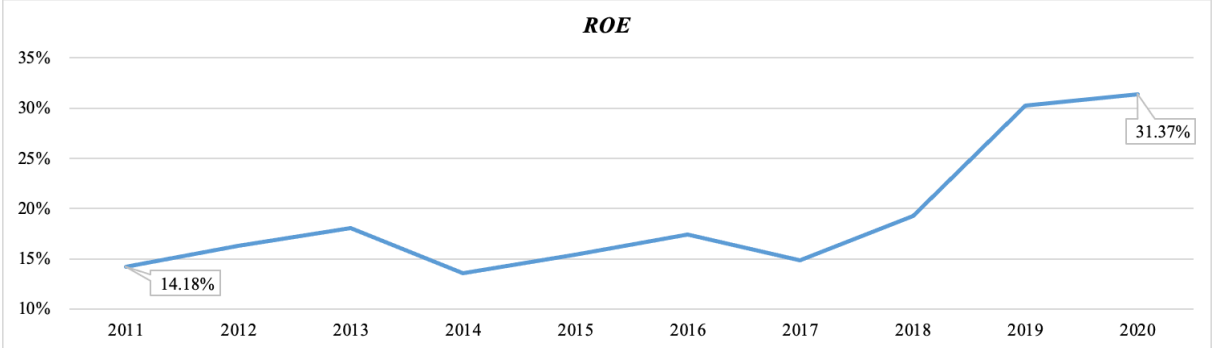
Cisco’s management was able to considerably increase Company’s ROA (+50%), allowing therefore the Company to harvest a higher profit from the assets it has acquired and deployed.

Return on capital employed (ROCE)



ROCE shows the profitability of the capital invested by company’s shareholders and debtholders: we computed it as “NOPAT / average total capital”²². In FY 2020, Cisco’s ROCE was equal to 19.75%, meaning therefore that the Company was able to generate a return of \$19.75 on every \$100 of capital invested by its shareholders and debtholders. Over the timeframe considered (i.e. FY 2011 – FY 2020), Cisco’s management was able to almost double Company’s ROCE (+92%), allowing therefore Company’s providers of capital to profit of a greater return on their investment.

Return on equity (ROE)



ROE shows the profitability of the capital invested by company’s shareholders: we computed it as “net income / average shareholders’ equity”²³. In FY 2020, Cisco’s ROE was equal to 31.37%, meaning therefore that the Company was able to generate a return of \$31.37 on every \$100 of equity invested by its shareholders. Over the timeframe considered (i.e. FY 2011 – FY 2020), Cisco’s management was

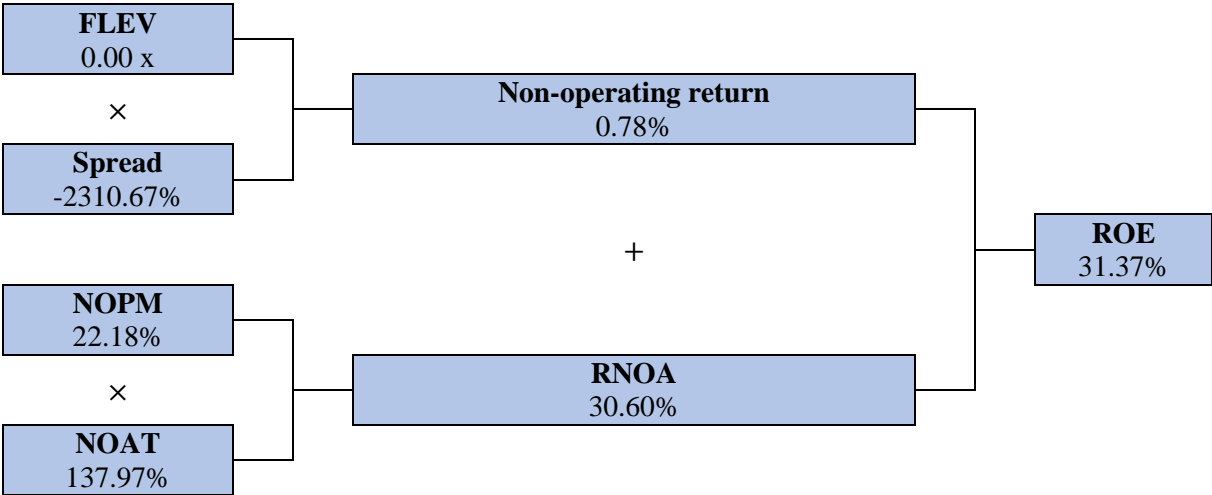
²² Total capital calculated as “shareholders’ equity + total debt”; average total capital calculated as an average between total capital at the start and at the end of the FY.

²³ Average shareholder’s equity calculated as an average between shareholders’ equity at the start and at the end of the FY.

able to more than double Company’s ROE (+121%), allowing therefore Company’s stockholders to profit of a greater return on their investment.

It is usually useful to break ROE down in order to better understand which are its key drivers: in such respect, ROE could be seen as the result of the sum of the return from operating activities and the return from non-operating activities; more precisely, the formula is the following: “RNOA²⁴ + (FLEV²⁵ * Spread²⁶)”.

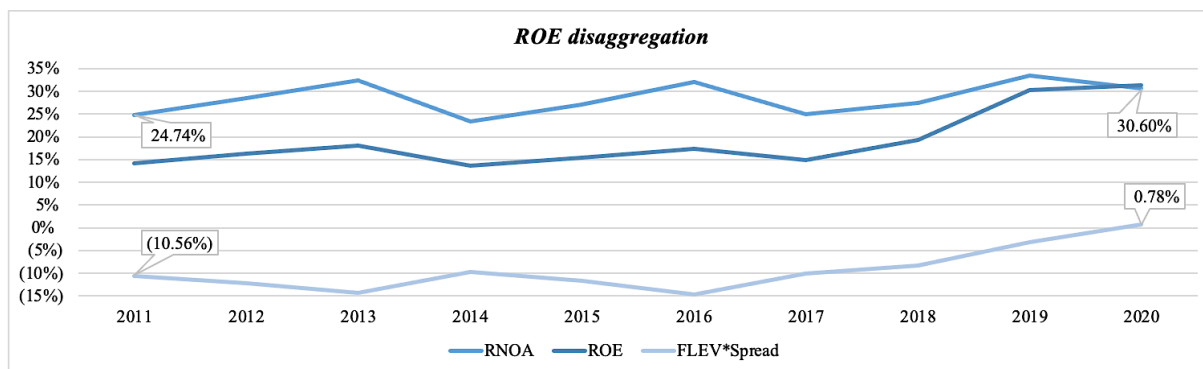
We report below the detailed ROE disaggregation for FY 2020 and a graph illustrating the performance of the returns from operating activities and from non-operating activities, as well as of the (total) ROE, during the period FY 2011 – FY 2020.



²⁴ Return from net operating assets, represented by the quotient of NOPAT and the average net operating assets (NOA = operating assets – operating liabilities). RNOA can be further disaggregated into net operating profit margin (NOPM = NOPAT/revenues) and net operating assets turnover (NOAT = revenues/average NOA).

²⁵ Financial leverage, represented by the quotient of the average net financial obligations (NFO = financial liabilities – financial assets) and the average shareholders’ equity.

²⁶ Difference between the RNOA and the net financial rate, represented by the quotient of net financial expenses (NFE = NOPAT – net income) and the average NFO.



As one would expect, the non-operating return in FY 2020 is almost zero, being Cisco funded predominantly with equity: therefore, ROE's main driver is the return from net operating assets (RNOA), whose greater component is the net operating assets turnover (NOAT). The same holds true for the previous nine fiscal years; however, in the overall period considered (i.e. FY 2011 – FY 2020), RNOA modestly increased (+24%), while Company's return from non-operating activities increased from -10.56% to 0.78% (i.e. +93%). Therefore, ROE's doubling in the period can be traced back to the above-mentioned surge in Cisco's non-operating return.

* * *

We conclude our return analysis by observing that ROA, ROCE and ROE increased significantly starting from FY 2017 (respectively: +52%; +103%; +112%), while in the period FY 2011 – FY 2016 they decreased or stayed almost flat (more precisely: -1%; -5%; +4%). The reasons behind such trend should be likely searched in the successful shift of half of Cisco's' revenue to software and services, as per the three-year plan set by the Company in FY 2017²⁷.

²⁷ See para 1.4 above for more details.

PART III – RISK ANALYSIS AND ESG PERFORMANCE

3.1 RISK FACTORS & RISK MANAGEMENT

Cisco is facing general and specific risks that also affect the industry in which it operates: if any of these events occur, Company's business, financial condition, results of operations or prospects could be materially and adversely affected. Among the several risk factors Cisco is facing, we believe that the most significant are those reported below; we illustrate below also the risk management system established by the Company.

Industry Risks

- *Shift of the IT sector from proprietary hardware to greater reliance on software reduces barriers to entry for new players:* software's prominence on hardware is taking place also because large hyperscale public-cloud providers have significantly changed IT architectures, prompting them to shift toward network automation and acceleration. One of the consequences of such move is software disaggregation from networking equipment and Cisco, like most of the network equipment suppliers, has already started to focus on software to be better positioned for such ongoing transition in the IT sector. However, the barriers to entry for new players are nonetheless lower in the field of software relative to hardware: therefore, the competitive risks for the industry in which Cisco competes are increasing.
- *Large enterprises, including cloud service providers, could increasingly look to insource network infrastructure capabilities:* large businesses have a significant amount of IT resources at their disposal and they could, in the future, try to insource more network infrastructure capabilities, in particular when it comes to software capabilities required to support the hardware. Such investments by large companies could potentially jeopardize the revenues of network equipment suppliers like Cisco.
- *New trends emerging out from the COVID-19 pandemic could result in long-term changes in customer needs for certain products and services:* according to 2021 Cisco's Global Networking Trends Report, an average of 4.7 times more employees are working from home now compared to before the outbreak of the COVID-19 pandemic. Also because of this, lots of enterprises – as previously illustrated²⁸ – decided to drastically reduce their IT capital spending with respect to products related to enterprise campus environments, especially in the switching field. If such trends

²⁸ See para. 1.4 above.

persist or even increase in the future, the demand for certain products could be materially adversely affected and never return to previous levels.

- *Industry consolidation could lead to increased competition:* as better illustrated above²⁹, during the last years there has been a constant deterioration of Cisco's leading market position in the industry. The consolidation between smaller competitors – a trend which has been continuing for several years – could further erode Cisco's leadership if this result in stronger competitors that are better able to compete as sole-source vendors for customers.
- *Changes in telecommunications and tariffs could harm operational results:* Changes in U.S. regulations, or any other country where the company operates, will affect the sales of products and services. These regulations may stop the expansion of services' providers network infrastructures and affect the business. In addition, changes in tariffs by regulatory agencies or application of new tariff requirements to currently untariffed services could affect the acquisition power of certain costumers.

Company Risks

- *Disruption and changes to Cisco's distribution model could harm its revenues and margins:* as seen above³⁰, products and services are sold either directly by Cisco to customers or through indirect channels (including system integrators, service providers, resellers and distributors), with a substantial portion sold through the latter method. If the Company fails to manage the distribution of its products and services properly or if its distributors' financial conditions or operations weaken, Company's revenues and margins could be materially adversely affected.
- *Cisco is heavily reliant on its supply chain, whose problems could have an adverse impact on its business and operating results:* the Company does not own its manufacturing facilities and is heavily reliant on its extended supply chain. Therefore, any supplier complications could materially adversely affect the Company's business and operating results and/or damage customer relationships.
- *Commercial Businesses customers' category could negotiate with smaller players to increase pricing pressure:* small and medium business enterprises could, in the future, shift their agreements regarding the supply of network equipment towards smaller providers, in order to reduce Cisco's negotiating power and increase pricing pressure.

²⁹ See para. 1.3 above.

³⁰ See para. 2.2 above.

- *Mergers and acquisitions carried out by Cisco poses a potential integration risk for the Company itself:* as better illustrated above³¹, M&A deals have been at the core of the Company's development strategy. Even though Cisco has successfully integrated lots of companies in the past, M&A growth involves numerous risks: above all, difficulties emerging out of the integration of operations, systems, technologies, products, and personnel of the acquired companies, with special reference to firms having large and widespread operations and/or complex products.
- *Operating results may fluctuate in the future, which may adversely affect the stock price:* the operational results of the company have been, and will continue to be, depending on quarterly and annual fluctuations, that depend on several factors. These factors include the demand of products and services, the ability of the company to maintain optimal inventory to fulfil its commitments, variations in sales channels and variations in implementation cycles for new products.
- *Dependence upon the development of new product and service, and enhancements to existing products and services:* The market for the company's products and services is defined by rapidly changing technology. The results of the company depend on its ability to anticipate emerging markets and the products that will satisfy optimally their needs. The company has been changing its business model from selling individual products and services to integrated solutions that are more adequate to customer's requirements.
- *Product quality problems:* The company produces highly complex products that incorporate leading-edge technology. There is no assurance that pre-shipment testing can detect all the defects of the products. This problem can affect customer satisfaction, reduce sales opportunities, or affect operational margins. The company is prepared to replace damaged components and provide remediation in response to the discovery of defects or bugs in the products already shipped. Nevertheless, there is no assurance of that the remediation would take place, which may impact in the withdrawal of a product or a line of products from the market.
- *Political or economic changes in a certain country could impact the financial condition of the company:* Due to the global nature of the company's operations, sales and customer support operations take place all over the world. Therefore, the growth of company depends in its ability to increase sales in emerging economies. The challenges found in an inconsistent macroeconomic environment are the fluctuation of foreign currency exchange rates, political or social unrest, economic instability or weakness or natural disasters of a specific country, changes in the tax policy of the country, difficulties in managing international operations and political considerations that affect service providers and government spending patterns.

³¹ See para. 1.4 above.

- *Property rights may prove difficult to enforce:* The company rely on its patents, copyrights, trademarks, and trade secret laws to protect the property rights of its products, services, and technology. Currently the company has submitted numerous patent applications for future products and technologies. There is no assurance that these new patents will not be challenged or invalidated. In addition, there is no assurance that the patents will be approved in the time required to start the production of new technologies.
- *Dependence on the availability of third-party licenses:* Some products are designed to included patents, software, or technology of third parties. In the future may be necessary to renew licenses related to these products. It will be no assurance that the renegotiation of these licenses will end up in acceptable terms for the company. The inability to acquire the new licenses might obligate to end the production of certain services and products of the company.
- *Inability to retain key personnel may affect the meeting of key objectives:* The company's success has always relied in the ability to attract and retain highly skilled personnel. The competition to acquire this selected type of personnel in Silicon Valley and U.S. in general may force the company to expand its horizon of selection processes to outside the country, which may signify to additional geopolitical and exchange risk rate.

Risk Management

In light of the fact the economy is gradually entering a post COVID-19 pandemic stage, but markets remain volatile and could cause the investments made by the businesses not return the expected benefits and generate a failure in organizational agility, it is of paramount importance for Cisco to mitigate the above-mentioned risks with the optimal management tools aimed at creating a sufficiently flexible organization and adapting the ongoing projects in light of the new market trends, in order to broaden the business' horizons. In such respect, Cisco believes that risk is implicit in innovation and the chase of long-term opportunities. The responsible for the continuous risk management activities is the company's management. In addition, the Board of Directors is responsible for the oversight of Cisco's management. With the help of the Board of Directors, the company has implemented practices, processes, and programs sketched to improve the management of the risks to which Cisco is exposed.

Cisco's management has implemented an enterprise risk management (ERM) program, conducted by the company's internal audit function, that is meant to work across the business to recognize, govern, and manage risks and Cisco's response to those risks. Cisco's in-house audit function attends an annual risk assessment that is utilized by the ERM program. The structure of the ERM program includes both an ERM operating committee that focuses on risk management-related topics and an ERM executive committee consisting of members of executive management. The ERM operating committee conducts global risk reviews and provides regular updates to the ERM executive committee.

3.2 ESG PERFORMANCE

According to Investopedia 2020 (Chen, 2020), “Environmental, Social and Governance (ESG) criteria are a set of standards for a company’s operations that socially conscious investors use to screen potential investments. Environmental criteria consider how a company performs as a steward of nature. Social criteria examine how it manages relationships with employees, suppliers, customers, and the communities where it operates. Governance deals with a company’s leadership, executive pay, audits, internal controls, and shareholder rights.”

The current definition can be amplified by further defining what is included in each of the three factors.

- The Environmental criteria measures how the company embraces the climate crisis, if the company has policies to ensure that they’re not participating in any activity than will add a negative impact to climate change, and sustainability, which includes the long-term view of the company and how they plan to acquire the resources they need for their products or services.
- The Social criteria includes the diversity policy of the company, which indicates the level of inclusion of a company recruitment process and employee management; human rights, which includes the considerations and impact in local communities, as the welfare of its employees; consumer protection, which measures the ability of the company to protect their clients from possible harmful products; and animal welfare, which prevents a company from testing their products on animals and attempting against their environment.
- The Governance criteria covers the amount of investigation into the rights and responsibilities of the management of the company. These criteria measure the management structure, employees’ relations, executive’s compensation, and employee’s compensation.

Environmental impact

Cisco has the responsibility to reduce the environmental impacts from their global network of component, manufacturing, and logistics suppliers. To achieve these goals, they have established the following measures:

- *GHG Emissions:* Cisco is committed to reduce supply-chain-related Scope 3 GHG emissions by 30 percent absolute by fiscal 2030 (fiscal 2019 base year). To achieve this goal, Cisco, in meeting with their suppliers, are expected to report GHG emissions and energy consumption to CDP on an annual basis. What is more, suppliers must commit to a list of demands that includes providing a complete and accurate inventory of corporate-wide Scope 1 and 2 GHG emissions, making the response publicly available via the option provided by CDP, setting an absolute GHG emissions reduction goal and reporting annual progress against that goal, and demonstrating verification (third-party review) of reported GHG emissions.
- *Reducing material waste:* Cisco focus on developing and promoting a circular economy has commanded efforts to better understand how materials are consumed upstream and downstream in

their supply chain. The company has committed that 70% of Cisco component and manufacturing suppliers by spend will achieve a zero-waste diversion rate at one or more sites by fiscal 2025. To support Cisco in meeting this goal, manufacturing suppliers are expected to monitor and collect waste diversion data.

- *Improving water security:* The company investigated further into how we could help to improve environmental sustainability of water systems in the areas where our supply chain operates, during fiscal year 2020. Cisco surveyed to recognize the water consumption levels of different commodity types within their supply chain. Leveraging World Resources Institute's Aqueduct tools and the data the company collected from suppliers, they were able to identify high water consumption supplier sites operating in water-stressed areas. As a result, Cisco has prioritized suppliers to engage in capability-building in partnership with the Alliance for Water Stewardship in fiscal 2021. The goal is to reduce water-related risks to business and improve the health of water ecosystems long-term.

Social responsibility

Cisco has the commitment to ensure social inclusion, protection of human rights and protection of their clients. To accomplish these goals, the company has developed several policies within these areas.

In the Global Human Rights Policy, Cisco commits to upholding the human rights contained in the UN Universal Declaration of Human Rights and the eight International Labour Organization (ILO) Core Labour Conventions, this will adopt the approach set forth in the UN Guiding Principles on Business and Human Rights (UNGP). The commitments are the following:

- *Expand the scope:* The approach will include grew responsible minerals program to include cobalt and other conflict-affected and high-risk areas (CAHRAs), incorporate logistics suppliers into Supplier Code of Conduct assurance program, and extend Supplier Code of Conduct to global services suppliers.
- *Improve our effectiveness:* The measures will be a development of a Supply Chain Human Rights Governance Committee, a delivery of a Supply Chain Human Rights Training to Cisco employees, to work with leveraged data to improve risk assessments for forced labor and child labor risks, and to expand due diligence beyond audits with targeted assessments and spot checks.
- *Engage to learn and influence:* The approach will develop external stakeholder engagement strategy, partner within industry at the RBA, RMI, RLI, and CEPN, and partnered with one manufacturing site to engage workers in reskilling, including surveying workers on job satisfaction, Future of Work, and providing skills training.

Product recycling is the other big concern for the company, for this reason the company has implemented two programs: Cisco Migration Incentive Program (MIP; formerly the Technology Migration Program) and Product Takeback and Reuse Program (formerly Takeback and Recycling) allow customers to return the equipment at end-of-use.

- MIP is a global channel partner program that utilizes discounts in exchange for product returns to compensate partners for migrating their customers' networks to new Cisco technologies.
- The Product Takeback and Reuse Program, which includes the Exceptional Pick-Up Program (EPUP), provides a simple, secure, and sustainable means of returning end-of-use Cisco equipment, along with Cisco acquired company equipment, at no cost.

Corporate governance & stakeholder engagement

Cisco's Board of Directors is composed of experienced and diverse directors and has installed robust corporate governance practices and policies. Cisco promotes and strongly believes in an independent board of directors. It is the role of this board to implement the corporate governance policies, that includes held annual elections for new directors, assure that the board is independent from the management, ensure the right of the shareholders when time to elect directors comes, establish the code of ethics of the company, etc.

To make corporate information as transparent as possible, attracting more and more investors, interested in acquiring securities of a company which is committed to transparency, communication is key in our opinion. From the information included in the Annual Report (*Introduction to summary report*), we understand that the Company is engaged with a significant portion of its shareholders: for example, during FY 2020, the Chairman of the Board and Chief Executive Officer, Secretary and Investor Relations team held meetings and conference calls with investors representing approx. 27% of Cisco's share capital, including 65% of the Company's top 30 shareholders. They discussed a variety of topics, including Cisco's business and long-term strategy, corporate governance and risk management practices, board leadership and refreshment, diversity, corporate social responsibility initiatives (including ESG matters) and executive compensation program.

We believe that the shareholders' engagement strategy of Cisco should be further improved and represent a focus point for the Company. In particular, Cisco should aim to reach a greater audience during its presentations and conference call: we suggest setting some targets in such respect (e.g. 40% for the next fiscal year and 50% within two fiscal years).

PART IV – VALUATION

In this section we will analyze the valuation of Cisco. We will first analyze Cisco's market performance and then move on to a fundamental valuation using the Discounted Cash Flow (DCF) methodology. This will be followed by a multiple's valuation, to conclude with a complete valuation of the company. The goal is to find a range for Cisco's intrinsic value that fits its performance, expected growth and risk profile.

4.1 STOCK PRICE PERFORMANCE

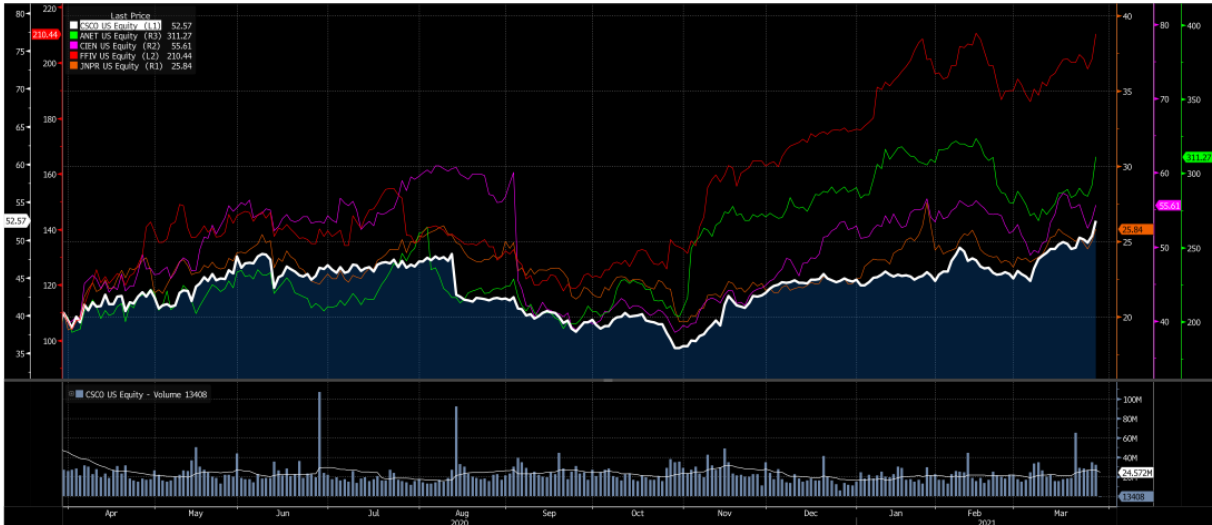
To analyze Cisco's share performance, we start with an analysis of the internal factors of the company that cause a movement in the share price. First, we notice that the share price is correlated to the change of the company's earnings. This is evident in the beginning of 2020, when the company was highly affected by the COVID-19 pandemic, which caused a decrease in the sales of Cisco and thus affecting the EPS (which have a direct impact in the share price). Considering this, the company must keep up high-profit margins, innovating in new products and services so that the stock remains at a consistent price in the market.



Source: Bloomberg

On the other hand, we first compare Cisco's share movement with the S&P 500 and then with the S&P 500 of technological companies. First, we can see that Cisco's share movement is consistent with the movement of the S&P 500 since in the cases where the index presented falls, Cisco's share price also dropped in price. Despite this relation, at the beginning of the year 2020, the S&P 500 had a better recovery than Cisco due to better-performing companies (especially companies in the technology sector). By the end of the second quarter of the year, Cisco had a better recovery than the index, which demonstrates its efficiency in times of the pandemic and its good performance in selling services especially as mentioned above. Finally, we compare Cisco's share performance with its direct competitors (which will be presented in more detail below), and we can see that, at the beginning of

2020, Cisco presented the lowest share price as its competitors presented higher valuations for their projected new services and technologies. With this in mind, we want to highlight the importance that Cisco develop new offerings that resemble those of its competitors so that it can do better in the market.



Source: Bloomberg

4.2 DISCOUNTED CASH FLOW ANALYSIS

The DCF analysis was performed as of 30th June 2020. All the assumptions, including Cisco’s financial rates and WACC, were made with available data at this date.

Our DCF analysis has been done with a 5-year forecast period with the terminal year in T+6. The valuation model with the respective Free Cash Flow (FCF) at the end of each projected year is shown in the Table 1.

To establish these values, the following assumptions were made:

1. **Sales growth:** considering the company's historical sales and considering Cisco's expansion and investment plans, we determined a sales growth rate of 2.19% per year. It is clear to us that this is a modest sales growth rate, but due to the uncertainty of COVID-19, we believe it is better to take a growth of this magnitude.
2. **Net Income:** we performed the same exercise for the Net Income taking into account historical performance, resulting in a growth rate of 5.01% per year for the next five years.
3. **Tax rate:** the tax rate was taken as 21%, which appears in the company's 2019 annual report and, it is expected to remain the same for the following years.
4. **D&A:** we decided that it should be part of the Capex growth since growth in investments would represent growth in depreciation and amortization of assets. Considering the historical information, we determined a D&A rate equal to 73.38% of the Capex for the next five years.

5. **Capex:** due to the sensitivity of sales to the growth and value of the company, we decided to calculate the Capex growth rate based on the historical rate of the Capex/Sales ratio. Therefore, we determined a growth rate equal to 4.42% per year by analyzing historical information and possible new projects in the coming years.
6. **Working Capital:** historical information was considered to determine the growth rate of working capital by calculating the growth rate in the change in inventories, accounts receivable, and accounts payable.

Assumptions & WACC calculation

To begin with, we calculated the WACC from different assumptions (Table 2) that come from company information as well as from different specialized sites such as Damodaran and Bloomberg. To calculate the cost of equity (K_e) we used the risk-free rate equal to 0.68%, then a rate from 10-year US government bonds. Next, we found the equity risk premium equal to 7.83% (from Bloomberg) and determined an unleveraged industry beta equal to 0.78. Next, we levered the beta by adjusting for Cisco's tax rate of 21% and adjusted it for the company's debt/equity ratio, resulting in a levered beta equal to 1.05. In the end, the cost of equity was 8.91%.

Now, moving on to the cost of debt, it was considered that the cost is equal to the rate currently paid by the company on the debt it has, which is equivalent to 3.18%. Finally, and using the corresponding ratios of debt and equity to assets, we calculate a WACC equal to 6.95% for Cisco.

Terminal Value

The terminal value of the company (Table 3) was determined from different factors such as the projected growth in sales, the development of new projects (R&D), and the maturity of the company. The maturity of Cisco is critical as it has a long history in the sector, and it presents a lower growth rate than some of its competitors (such as Ciena and F5) due to their implementation of new services and technologies. Given this, we consider that a rate of 1.75% corresponds to a modest but realistic growth rate for the company. This value will give us a better projection as there is a wider gap for the valuation of Cisco, in case the company presents a better growth rate in the future, as it has been showing it during the first quarters of the year 2021.

Once the terminal value of the free cash flows is derived, we discounted these FCF to the present value to determine the company's value. Next, we add the company's cash and subtract the net financial debt arriving at a market capitalization equal to \$191,477M. Finally, we use the number of shares in the market (4,244 for the 2Q of FY 2020) to determine the expected price per share for Cisco, which in our case is \$45.12 (Table 4).

Sensitivity analysis

The sensitivity analysis is performed for two critical variables that determine Cisco's share price. Firstly, the expected perpetual growth of the company is taken into account as this value significantly affects the company's valuation. Only with a change of 0.1%, we notice a significant change in the share price. On the other hand, the WACC is varied by 0.5% to check the company's value with the cases in which a higher cost of capital, or on the contrary scenario of resource optimization, may occur. It is worth noting that although these are not very high percentage changes, the variations made are critical in the valuation of the company as the share price is in a range of \$36.69 and \$58.68 in this sensitivity analysis.

		Growth rate				
		1,55%	1,65%	1,75%	1,85%	1,95%
WACC	45,12					
	5,95%	54,00	55,09	56,23	57,43	58,68
	6,45%	48,35	49,21	50,10	51,04	52,01
	6,95%	43,74	44,43	45,15	45,90	46,68
	7,45%	39,92	40,49	41,08	41,69	42,32
	7,95%	36,69	37,17	37,65	38,16	38,68

4.3 COMPARABLE COMPANIES ANALYSIS

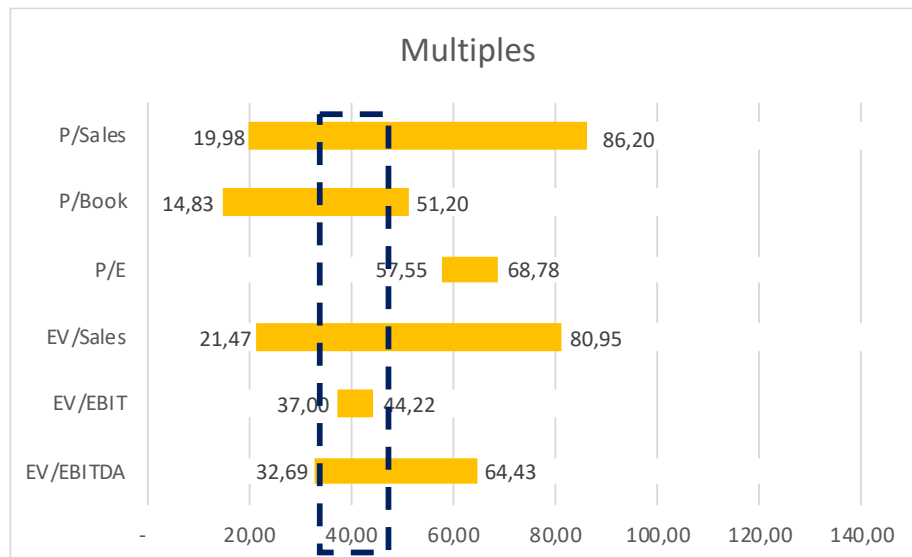
For the valuation method by comparables (multiples), four companies with a similar business model to Cisco were considered, especially with similar products and services. Besides, it is important to note that these companies are also in the same sector and market, so they have considerable similarities to compare their company value with that of Cisco. The companies considered are:

1. ARISTA NETWORKS INC
2. CIENA CORP
3. F5 NETWORKS INC
4. JUNIPER NETWORKS INC

The multiples that we chose for the valuation are EV/EBITDA, EV/EBIT, EV/Sales, P/E, P/Book, and P/Sales. We consider these multiples to be critical as they take into account fundamental factors such as the company's operational growth, growth based on sales, and growth based on the company's assets. Next, we calculated median values for the selected companies, and from these, we calculated the market capitalization to derive a price for the Cisco share. We ended by calculating a median value of these share prices to arrive at a median share value of \$40.83. It is interesting to see the range of the value of the stock, using these multiples, is from \$34.04 to \$60.59.

	ARISTA	CIENA	F5	JUNIPER	Median Value	Implied EV	Implied Market Cap.	Share Price
EV/EBITDA	17,92x	11,98x	12,38x	9,19x	12,18x	187 913,04	184 886,04	43,56
EV/EBIT	18,44x	14,00x	13,45x	11,75x	13,73x	186 934,50	183 907,50	43,33
EV/Sales	7,03x	2,21x	4,51x	1,91x	3,36x	165 651,36	162 624,36	38,32
P/E	21,78x	26,03x	24,02x	21,84x	22,93x		257 137,02	60,59
P/Book	5,73x	3,66x	4,11x	1,66x	3,89x		147 319,20	34,71
P/Sales	7,42x	2,31x	3,55x	1,72x	2,93x		144 451,93	34,04
								40,83

After determining the median share price, we present the following graph showing the lowest and highest values of each multiple. This graph allows us to see which multiples have the highest volatility among Cisco's peers, so we can see that multiples such as P/Sales and EV/Sales have the greatest distance between the extreme values, while multiples such as P/E and EV/EBIT have the smallest distance between the extreme values. This allows us to see to a large extent the sensitivity that critical factors such as sales have on the valuation of companies in the industry.



4.4 VALUATION RANGE

Considering the share price calculated by DCF valuation and multiples, we can determine that Cisco's share price is currently between \$40.83 and \$45.12.

PART V – CONCLUSION

From the results obtained by the two valuation methods used (DCF and multiples), a final target share price of \$42.97 is derived, which is equal to the average of the share prices found by each methodology. Considering Cisco's current share price is \$51.50 (as of 23 April 2021), we can say that the market is currently paying a premium equal to 19.85%. Therefore, we find that the stock is overvalued, thus we recommend selling the stock.

This overvaluation may be due to several factors, firstly the bubble that the S&P 500 is experiencing since the middle of mid-2020, making the index reach historic levels despite the COVID-19 crisis. This has caused many stocks in the US market to become overvalued and therefore the share price is rising higher than normal. On the other hand, the high volatility and risk that is currently present in the market are very high, which explains to a large extent the bubble that is present in the North American market. Finally, Cisco has presented good levels of growth for the last five years, and so far they have prepared the incursion of new projects and services, giving a great signal to the market that the company's performance will enhance for 2021 and the next years. Consistent with this, further growth in the company's earnings is expected, which has boosted the share price in the market.

APPENDIX

Table 1. Free Cash Flow Statement

	2020A	2021e	2022e	2023e	2024e	2025e
Net Sales	49 301,00	50 382,05	51 486,81	52 615,79	53 769,53	54 948,57
Net Income	11 214,00	11 776,18	12 366,55	12 986,51	13 637,56	14 321,24
Tax	2 212,52	2 473,00	2 596,98	2 727,17	2 863,89	3 007,46
Unlevered Net Income	9 001,48	9 303,19	9 769,58	10 259,35	10 773,67	11 313,78
D&A	1 808,00	1 528,35	1 561,86	1 596,11	1 631,10	1 666,87
Capex (Net Fixed Assets)	1 472,00	2 225,79	2 274,60	2 324,47	2 375,44	2 427,53
Change Net working capital	- 323,00	- 346,30	- 371,83	- 399,79	- 430,43	- 464,03
Change in Inventories	- 101,00	- 102,23	- 103,47	- 104,72	- 105,99	- 107,28
Change in Receivables	- 63,00	- 68,68	- 74,87	- 81,62	- 88,98	- 97,00
Change in Payables	159,00	175,40	193,49	213,45	235,46	259,75
Free Cash Flow (FCF)		8 952,05	9 428,67	9 930,77	10 459,77	11 017,15

Table 2. Assumptions WACC calculation

WACC calculation		
Metric	Rate	Data Source
Risk free rate	0,68%	10 year US bond yield (for June 30 2020)
Industry Unlevered Beta	0,78	Damodaran estimate
Levered Beta	1,05	
Cost of Equity (Ke)	8,91%	
Tax rate	21,00%	Company data
Capital structure FY2020	43,95%	Company data
Cost of Debt (Kd)	3,18%	Company data
Equity Risk Premium	7,83%	Data from Bloomberg
D/A	30,53%	Company data
E/A	69,47%	Company data
WACC	6,95%	

Table 3. Terminal Value calculation

Free Cash Flow (FCF)		8 952,05	9 428,67	9 930,77	10 459,77	11 017,15
Terminal Value (= 1,75%)						215 403,92
Free Cash Flow with Terminal		8 952,05	9 428,67	9 930,77	10 459,77	226 421,07

Table 4. Price per share calculation

Free Cash Flow with Terminal		8 952,05	9 428,67	9 930,77	10 459,77	226 421,07
Discount factor		0,93	0,87	0,82	0,76	0,71
PV of FCF		8 369,98	8 242,42	8 116,90	7 993,40	161 781,40
Enterprise Value	194 504,10					
Cash	11 809,00					
Net Financial Debt	- 14 836,00					
Market Capitalization	191 477,10					
# Shares	4 244,00					
Price per share	45,12					